Performance and governance in microfinance institutions

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Abstract

We examine the relationship between firm performance and corporate governance in microfinance institutions (MFI) using a self-constructed global dataset on MFIs collected from third-party rating agencies. Using random effects panel data estimations, we study the effects of board and CEO characteristics, firm ownership type, customer-firm relationship, and competition and regulation on an MFI's financial performance and outreach to poor clients. We find that financial performance improves with local rather than international directors, an internal board auditor, and a female CEO. The number of credit clients increase with CEO/chairman duality. Outreach is lower in the case of lending to individuals than in the case of group lending. We find no difference between non-profit organisations and shareholder firms in financial performance and outreach, and we find that bank regulation has no effect. The results underline the need for an industry specific approach to MFI governance.

JEL classification: G30; G32; J23

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1. Introduction

In this paper, we investigate the impact of governance mechanisms on microfinance institutions' (MFIs) dual missions of financial sustainability and providing banking services to micro-enterprises and low-income families. We identify three dimensions to this problem: a vertical dimension between owners and management, a horizontal dimension between the MFI and its customers, and an external governance dimension. Recommendations for better governance are made primarily for the first and third dimensions. For example, Rock et al. (1998), Otero and Chu (2002), and Helms (2006) suggest importing best practices in governance from developed countries, such as board independence and shareholder ownership. Van Greuning et al. (1999) and Hardy et al. (2003) argue for better MFI regulation.

However, problems of credit risk assessment and repayment[1] make governance of firm-customer interactions potentially more important in banking than in other industries (Adams and Mehran, 2003b). This is the focus in the present study. For example, if an MFI has a high percentage of female loan clients, should it adjust its governance accordingly? Group lending is seen as a method to ensure repayment (Armendariz de Aghion and Morduch, 2005). Is an MFI's financial performance enhanced when the MFI supplies its customers primarily with group loans?

[1] Two factors make an MFI's loan portfolio different from that of a bank. First, it is generally semi- or uncollateralised. Second, repayment time is generally short. Thus, an MFI faces the risk of steep deterioration of its portfolio in a matter of only a few weeks.

We use recently released data from third-party rating agencies, yielding a unique dataset of 278 MFIs from 60 countries between 1998 and 2007. Thus, we respond to Morduch (1999) and Hartarska's (2005) requests for the use of better data in the analysis of microfinance questions.

Microfinance is high on the public agenda after the UN Year of Microcredit in 2005 and the awarding of the Nobel Peace Prize to Mohammad Yunus and the Grameen Bank in 2006. Nevertheless, microfinance still reaches only a fraction of the world's poor (Robinson, 2001; Christen et al., 2004). Helms (2006) and the Consultative Group to Assist the Poor (C-GAP 2004, 2006) consider the lack of strong MFIs to be a major constraint on the further development of the microfinance industry, and CSFI (2008) identifies governance as a major obstacle to MFI growth.

Few studies have been published on corporate governance in MFIs. Hartarska (2005) investigates the relationship between governance mechanisms and financial and outreach performance, using three surveys of rated and unrated Eastern European MFIs between 1998 and 2002. Governance mechanisms include board characteristics, CEO compensation, and ownership type.[2] Hartarska (2005) includes several institutional and firm control variables and finds that a more independent board gives a better return on assets (ROA). However, a board with employee directors results in lower financial performance and outreach. The difference in financial performance and outreach between various ownership types is negligible.

[2] Ownership type refers to the various legal incorporations found in MFIs, ranging from shareholder-owned firms to cooperatives.

Cull et al. (2007) also investigate MFI financial performance and outreach by focusing on lending methodology.[3] They use data from 124 MFIs around the world and find that financial performance improves, up to a point, with individual loans, and that MFIs concentrate more on individual loans. Governance variables, such as board characteristics or ownership type, are not considered.

Our study is therefore justified by the neglect of the MFI-customer dimension, the limited number of academic studies available, our large and comprehensive global dataset, and the fact that some governance mechanisms, like competition and internal board auditor, remain unexplored in the literature.

Our findings indicate that most corporate governance mechanisms have little impact on MFIs' financial and outreach performance. However, results show that financial performance improves when the board is informed by an internal auditor and has local directors, and when the CEO is a woman. For outreach, measured by the number of credit customers and average loan amount, CEO/chairman duality increases the number of credit clients. Outreach is reduced with individual lending. Generally, there is no difference between non-profit organisations and shareholder firms in either financial performance or outreach. Similarly, bank regulation also does not seem to have an impact on financial and outreach performance.

This paper proceeds as follows. Section 2 develops our hypotheses. Section 3 presents an overview of the data sources and estimation method, and descriptive evidence is reported in Section 4. Section 5 presents econometric evidence. Section 6 concludes and proposes a new research agenda.

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[3] Lending methodology refers to the way loans are given. The categories used are individual loans, group loans, and village banks, which are larger groups of approximately 20 members.

2. Governance and performance in MFIs

Governance is about achieving corporate goals. The first goal of MFIs is to reach more clients in the poorer strata of the population, and the second goal is financial sustainability. We analyse the relationship between governance mechanisms and both outreach and financial performance. Financial performance is assessed in terms of overall profitability, through such measures as return on assets (ROA[4]), operational self-sufficiency (OSS[5]), revenues (portfolio yield), and operational costs (Christen, 2000). Using these measures enables us to pinpoint more clearly under what conditions a particular governance mechanism is effective. The outreach measures are the MFI's average outstanding loan and the number of credit clients served (Schreiner, 2002). Table 1 summarises the dependent variables.

Table 1

The table confirms the high (nominal) portfolio yield usually experienced in MFIs. Thus, an average of nearly 40% is not surprising in these markets. All returns in the regression analysis are adjusted for inflation. Thus, we use real rates for ROA [(ROA – inflation) / (1 + inflation)] and portfolio yield. The average loan reflects the "micro" in microfinance. The lowest loan amount is US $2.22, the average loan amount is US $788, and the median is US $441. The maximum amount of approximately US $25,000 is an extreme case, which is twice the amount of the next largest loan. We filter out the extreme cases above US $10,000 and adjust the remaining loans to purchasing power parity GDP (World Economic Outlook, IMF).

[4] Debt/equity levels differ considerably between MFIs. Hence, ROA is more appropriate than ROE (return on equity) when measuring financial results across different institutions. ROA is calculated based on operational profits before donations and taxes.

[5] OSS is a widely used proxy for institutional sustainability. Table 1 gives its definition.

Incentive problems in a bank have at least two dimensions: one between the owner(s) and management (including the board), and the other between the MFI and its customers (Macey and O'Hara, 2003). Overviews by Becht et al. (2003) and Hermalin and Weisbach (2003) show that governance in the owner-board dimension is important in general, while Rock et al. (1998), Otero and Chu (2002), and Helms (2006) underline its importance specifically in microfinance. In the MFI-customer dimension, an MFI is subject to problems of credit risk assessment and repayment because credit clients typically have little or no collateral (Armendariz de Aghion and Morduch, 2005). Microfinance initiatives find new ways to deal with these problems through group lending, character lending, and the gradual building of a credit history. In group lending, using either solidarity groups or village banks, the MFI delegates much of the screening and monitoring efforts to the group. In contrast, the customers' relationship with the MFI is more direct in individual lending. Furthermore, the special nature of banks as providers of a financial infrastructure often requires public regulation of the bank-customer relationship. Studying the governance of MFIs therefore requires three considerations: the relationship between the owner(s) and the board, the relationship between the MFI and its customers, and the external conditions of competition and regulation.

Table 2 summarises the independent variables, their definitions, and the hypotheses relating to financial performance and outreach.

Table 2

The remainder of this section discusses the three dimensions of governance. First, the owner-board dimension concerns board composition and ownership type. Board composition variables are CEO/chairman duality, international directors, internal auditor, and board size. Ownership type is a dummy variable for a shareholder-owned MFI.

CEO/chairman duality may be a sign of CEO entrenchment (Hermalin and Weisbach, 1991, 1998), in which the CEO can pursue policies that yield private benefits. The Cadbury Committee (1992) advises against this duplication in roles. However, duality may enhance decision-making effectiveness. This ambiguity may explain why Brickley et al. (1997) do not find that firms with a CEO-chairman separation outperform those with CEO/chairman duality. Oxelheim and Randøy (2003) find that firm performance improves with the presence of international directors.

Steinwand (2000) recommends an internal auditor in the MFI who reports directly to the board. Ideally, the internal auditor provides the board with independent, objective assessments on the MFI operations. This should improve financial and social performance.

A larger board may induce members to free-ride in their monitoring responsibility, allowing the CEO greater independence. Yermack (1996) and Eisenberg et al. (1998) report that larger boards are associated with lower firm performance, measured as Tobin's *Q* or ROA. Bennedsen et al. (2008) confirm the negative relationship in small family firms. Hartarska (2005) confirms the result in ROA regressions for MFIs. Adams and Mehran (2003a) present contrary evidence from banking firms in the USA, and de Andres and Eleuterio Vallelado (2008) agree based on Spanish data. Many MFIs are non-profit organisations (NPOs). Handy (1995) proposes that board members in NPOs offer their reputation as collateral and Speckbacher (2008) argues that NPOs need larger boards because they lack owners with monetary incentives to monitor their investments. Similar to Hartarska's findings (2005), we expect a larger board to reduce firm performance.

Legal incorporation or ownership type may play a role in MFI performance. Similar to regular banking (Rasmussen, 1988; Hansmann, 1996), ownership of MFIs differs significantly (Labie, 2001; Mersland, forthcoming). NPOs are often considered to be weaker structures because they

lack owners with a financial stake in operations (Jansson and Westley, 2004), which leads to lower financial performance than that of shareholder firms (SHFs). Accordingly, Ledgerwood and White (2006) and Fernando (2004) argue for the transformation of NPOs into SHFs. However, NPOs are believed to be more effective at reaching poor customers. These findings imply that SHFs should show better financial performance but reach fewer poor clients than NPOs. However, Mersland and Strøm (2008) find that SHFs and NPOs perform equally well. The incentive problems between owners and managers may be more pronounced in NPOs, but NPOs have the compensatory benefit of reducing adverse selection of customers and avoiding moral hazard (Hansmann, 1996; Desrochers and Fischer, 2002; Mersland, forthcoming) because they are better able to tap into local information networks. Evidence in Caprio and Vittas (1997) and Cull et al. (2006) confirms this. Many SHFs are not run according to the shareholder value model, since they may be committed to reaching the poor (Reille and Forster, 2008). If this were true, we would expect to confirm the findings of Valnek (1998), Crespi et al. (2004), and Mersland and Strøm (2008) that NPOs perform as well as SHFs.

Allen and Gale (2000) caution about the effectiveness of monitoring; they note that the board's monitoring is often ineffective due to the firm's financing out of retained earnings. Owners may find it advantageous to yield control to the CEO. They show that this is more relevant when the business uncertainty is greater and the divergence is smaller between the interests of the CEO and of the owners. This may be relevant for the microfinance field because the information asymmetry between the board and the CEO is likely to be large, and because the owners, board, and managers may share the same goals. Many MFIs are monitored by an agent and not a principal, since they are funded by back-donors or taxpayers. Furthermore, many MFIs often struggle with identifying board members who have an appropriate background and who are willing and able to dedicate the necessary time to monitor management effectively (Labie,

2001). Thus, we expect governance in the owner-board dimension to be less important than in the MFI-customer dimension.

This encourages an emphasis on the CEO in the MFI-customer dimension. One of the innovations in microfinance has been the targeting of female customers (Armendariz de Aghion and Morduch, 2005). Female customers constitute approximately 73% of our data. We presume that a female CEO is better at obtaining information from predominantly female customers than is a male CEO, and we expect that this improved knowledge influences the MFI's operational costs and overall profitability and outreach.

The loan methodology, group or individual lending, is another aspect of the MFI-customer dimension. Armendariz de Aghion and Morduch (2005) point out that group lending may increase the repayment rate because it leads to positive assortative matching. In other words, the best credit risk groups naturally come together as a result of local knowledge of trustworthiness. When this is the case, we should expect group lenders to show better firm performance. However, Cull et al. (2007) find that individual lenders enjoy the highest financial returns, whereas group lenders show greater outreach to poorer customers. We expect these empirical findings to hold in the present study.

Stakeholders on the board arguably influence the governance of an MFI. Hartarska (2005) finds that employee directors are negatively related to financial performance and outreach. In our data, stakeholder representation is surprisingly low, ranging from 2% for debt-holder representation to 11% for customers. Employee directors are found in 7% of MFIs, and donor directors in 9%. We also find that no stakeholder group improves firm performance or outreach (unpublished data).

External governance mechanisms, such as product market competition and regulation, may be relevant for microfinance. In general, the more intense the competition, the less owners need

internal governance mechanisms (Hart, 1983; Schmidt, 1997). However, Nickell (1996) argues that because increased competition may reduce costs, the negative effect of lower product prices may be outweighed. Therefore, the effect on performance is uncertain. Petersen and Rajan (1995) argue that the bank earns rent on survivors in long-term relationships. When relationships are undermined by competition, banks terminate lending to risky and costly customers. This can reduce outreach, and Berger and Udell (1998) confirm this for smaller firms, and McIntosh and Wydick (2005) do likewise for MFIs. However, Vesala (2007) introduces switching costs and predicts a V-shaped rather than a monotonous relationship between relational banking and competition. From Spanish bank data Delgado and Saurina (2007) report that relational banking is more common in mutual banks than in private.

Many MFIs are not regulated. Van Greuning et al. (1999) recommend a step-wise regulatory approach that reflects the heterogeneity of MFIs and their operating conditions. A regulated MFI is more likely to earn customers' trust, which should lead to improved financial performance. On the other hand, regulation is associated with costs like security requirements, investments in information technology, and the stifling of MFI innovations. Thus, such costs may outweigh the benefits (Hardy et al., 2003). When regulated, the MFIs gain access to low-cost depositor funding. Hence, the effect on financial performance is uncertain, as is the effect on outreach. Hartarska and Nadolnyak (2007) confirm that regulation has no direct effect on social and financial performance of MFIs, but may indirectly affect outreach if regulated MFIs are allowed the mobilisation of savings.

These considerations indicate the importance of taking into account firm-specific control variables. Therefore, in the present study, we include the following: weights of urban and rural lending, MFI experience, portfolio risk, and firm size. The 2004 Human Development Index (Human Development Report, 2006) is used to control for country-specific effects.

3. Data issues and methodology

The dataset contains information from risk assessment reports from five microlender rating agencies, MicroRate, Microfinanza, Planet Rating, Crisil, and M-Cril, and their reports can be found at www.ratingfund.org. All five are approved as official rating agencies by the Ratingfund of the C-GAP. Their rating methodology reveals no major difference in MFI assessment relevant to variables used in this study.

The rating agency obtains, at most, four years of financial data, along with data on the MFI's characteristics, such as board size and composition, at each rating. The reports in the database cover 278 MFIs from 60 countries[6] gathered from 2000 to 2007, with the vast majority from the last four years. When necessary, all entries in the dataset have been annualised and dollarised using official exchange rates.

The use of rating data may introduce sample selection bias. Few larger regulated microfinance banks are included in the dataset, since they have funders who demand traditional credit ratings offered by agencies such as Standard & Poor's. Moreover, neither the virtually endless number of small savings and credit cooperatives nor development programs offering microcredit solely as a social service are included. The 278 MFIs in the dataset represent commercial and professionally oriented institutions that have decided to be rated to improve access to funding, benchmark themselves against others, and increase transparency (see www.ratingfund.org). We consider our data, which were collected by third parties, to be more reliable than self-reported data sources like Mixmarket (www.mixmarket.org) or questionnaires. Compared to the MFIs included in Mixmarket Annual MFI Benchmarks (2006), the MFIs in our sample are younger (7 vs. 9 median years), smaller (median total assets $2.9 million vs. $6.2 million), have fewer

[6] The country list is available from the authors upon request.

credit clients (4,900 vs. 10,000), and have smaller loan portfolios ($2.1 million vs. $4.4 million), yet the median average loan is approximately the same ($433 for our dataset vs. $456 for the Mixmarket data). Comparing averages between the two is not meaningful, since the Mixmarket data contain more of the very large MFIs. Overall, our data seem sufficiently representative. Specifically, we avoid a large firm bias.

The panel data are structured such that annual observations of the financial variables are available for up to four consecutive years; however, because the governance variables are often reported only once, they must be assumed to be constant over the whole period. For example, board variables are constant. We estimate coefficients using the random effects method (Greene, 2003) from the model:

$$y_{it} = X_{it}'\beta + (\alpha + u_i) + \varepsilon_{it} \quad (1)$$

Here, α is the mean of unobserved heterogeneity, u_i is heterogeneity specific to firm i, ε_{it} is the remaining firm-year heterogeneity, y_{it} is the dependent variable, and $X_{it}'\beta$ is the vector of explanatory variables and the vector of coefficients, respectively. This formulation implies that the constant term in the regression must be interpreted as the average firm-year heterogeneity.

The random effects method transforms the original data. For example, using y_{it}, the dependent variable for the i^{th} case in year *t*, the transformed y_{rit} is:

$$y_{rit} = \frac{1}{\sigma_\varepsilon}\left(y_{it} - \theta\bar{y}_i\right) \text{ where } \theta = 1 - \frac{\sigma_\varepsilon}{\sqrt{\sigma_\varepsilon^2 + T\sigma_u^2}} \quad (2)$$

Here, $\bar{y}_i$ is the individual firm average and σ_ε is the standard deviation of the residual ε_{it}, which is assumed to be constant. σ_u is the standard deviation of firm heterogeneity, and it is also assumed to be constant. *T* is the number of years of data, which, in this case, equals four.

We calculate these standard deviations by first running a generalised least squares (GLS) regression assuming a random effects structure, carry out the transformations above, and then run a three-stage least squares procedure (3SLS; Greene, 2003) on the transformed data. The full procedure produces roughly the same coefficients as the original GLS regression, but the standard errors are smaller. Since the posited relationships, if they exist, are linear, the 3SLS is a valid method. One advantage of the 3SLS is that this method does not require assumptions of distributional form.

4. Descriptive evidence

Table 3 shows the main values of the explanatory variables.

Table 3

The table shows that the number of observations of most independent variables is much smaller than for the dependent variables in table 1 because the former often represent fixed firm characteristics.

The mean of many of the variables can be interpreted as the percentage of firms in the category. Thus, 28.9% are shareholder-owned firms.[7] Based on international comparison, the average board size of 7.33 directors is low. In addition, CEO/chairman duality is low. Half of MFIs in our sample have an internal auditor reporting to the board, which is also low given the importance given to this measurement in microfinance policy.

23.5% of CEOs are women. This is a very high percentage, which may reflect the high percentage of female customers (73%). More than half of the MFIs emphasise individual loans.

[7] 58.1% of the sample consists of non-profit, non-governmental MFIs, and the remainder is cooperatives, state banks, and "other" institutions.

This is a surprising finding because group lending is considered to be one of the hallmarks of microfinance.

Banking authorities regulate 34.9% of MFI firms. Our seven-point competition measure shows that the firm's average subjective experience of competition is high. The measure is based on on-site evaluations by raters, which we transform into a common 1-7 scale.

The urban market variable shows that 36.3% of MFIs concentrate efforts solely in urban markets. This is a surprisingly low percentage, considering the difficulties in reaching rural areas (Helms, 2006). 22.5% of MFIs serve only rural markets, and 41.2% serve both. We also see that the typical MFI is young, although one institution can trace its microfinance activity to 1923, when it began to give loans to small farmers. However, MFIs have generally had little time to build up a relationship with their customers.

The Human Development Index (HDI) minimum and maximum values show that firms come from a wide variety of country backgrounds. The inclusion of the HDI may capture some of their institutional differences.

Table 4 presents correlations between explanatory variables.

Table 4

Many correlations are significant. The question is whether multi-collinearity is strong enough to invalidate the simultaneous inclusion of these variables in regressions. Kennedy (2008) states that multi-collinearity is a problem when the correlation coefficient is above 0.70, which is not the case here. In addition, since panel data estimation gives more data points, the multi-collinearity problem here is reduced even further (Hsiao, 2003).

5. Econometric evidence

We report results from random effects panel data estimations of the relationships between financial performance and outreach, as well as the variables in the three dimensions of governance from Table 3.

5.1. Financial performance

Table 5 shows results from regressions with ROA, OSS, portfolio yield, and operational costs as dependent variables.

Table 5

The models encompass explanatory variables from Table 3. The overall Wald statistic shows rejection of the hypothesis that all coefficients are equal to zero in all specifications. We comment on all regressions together. Although the signs of the coefficients are mostly as expected, it is striking that so few results are significant. However, interesting results appear in both significant and non-significant findings.

In the owner-board relationship, CEO/chairman duality is significant only in the portfolio regressions. Thus, we cannot say whether the MFI is better governed when the CEO is not also the chairman, confirming the Brickley et al. (1997) result. Contrary to Oxelheim and Randøy (2003), we find that international directors reduce the MFI's performance by reducing OSS and inflating costs. The Oxelheim and Randøy (2003) result may be because international directors bring a superior business orientation to Scandinavian firms. However, in MFIs, they may bring a culture of higher costs. The board is presumably better informed with an internal board auditor, and this should improve financial performance. This is confirmed for OSS. We cannot confirm Hartarska (2005) and the general literature that performance improves with a smaller board. Thus, the MFI board improves performance when it is local and better informed through the internal auditor.

Furthermore, it turns out that being an SHF does not improve MFI performance. The SHF variable is not significant in any regressions. This is not necessarily surprising. Crespi et al. (2004) find similar results when they compare savings banks and commercial banks in Spain. Furthermore, Mersland and Strøm (2008) find no differences in profitability between microfinance SHFs and NPOs.

In the MFI-customer dimension, the female CEO variable is significant and positive in ROA and OSS regressions. The results confirm findings in Welbourne (1999) and Smith et al. (2006) that women in management have a positive impact on firm performance. Because approximately 73% of the customers in our sample are women, the result may indicate that a female CEO reduces information asymmetry vis-à-vis customers more than a male CEO does. It may be that a female CEO knows better what products women want and sets terms that appeal to women. In this way, our results underline the importance of the MFI-customer relationship. It is also possible to infer from Table 4 that women self-select ownership types with superior performance. However, further analysis shows this to be unlikely: while female CEOs in our dataset are over-represented in NPOs, the average real ROA shows a negligible difference between this and other ownership types, specifically SHFs.

Individual loan is never a significant variable in our regressions. Non-significance in the ROA and OSS regressions indicates that sustainable financial performance can be achieved with both individual and group lending. The proposed comparative efficiency in group lending is not confirmed.

External governance mechanisms show a positive, significant result for competition in a portfolio yield regression. Thus, it appears that MFI performance can increase with more competition, an outcome mentioned by Nickell (1996), and may be due to first entrants becoming more efficient when new MFIs enter their market. However, the portfolio yield

result is counter-intuitive and should be analysed further. We find no significant results concerning the impact of regulation, which is in line with Hartarska and Nadolnyak (2007).

We carry out additional regressions using various alternative specifications, and we find that they yield similar results to those reported in Tables 5 (unpublished data). New explanatory variables (female directors, stakeholders, the number of board meetings), alternative definitions (only rural instead of only urban in the market definition, MFIs per population as competition),[8] filtering cooperatives, state banks, and "other" ownership type definitions all yield results that are consistent with those in Table 5. We conclude that our reported results are robust to several specifications.

The overall conclusion is that few traditional internal and external corporate governance mechanisms influence the financial performance of MFIs, with the exception of internal auditors and local directors. The positive effect of having a female CEO indicates the importance of supplementing board monitoring with attention to the MFI-customer relationship. These results are internally consistent. For instance, the positive impact of a female CEO is reflected in the negative impact of international directors, which is probably due to differences in client knowledge. We also find internal consistency in the SHF result. From Table 4, it appears that the SHF has a presumably better board structure than other ownership types; it has an internal auditor, a smaller board, and it is regulated. However, the SHF has more international directors and fewer female CEOs. The SHF, therefore, may be less able to tap into local information networks, and the overall result is that its performance is not better than other MFIs. Both theoretical and empirical studies show that a board should not be wholly

[8] Data from the Mixmarket (www.mixmarket.org) are used; approximately 1,200 MFIs report to this service.

independent of the CEO, but should also include internal directors who can increase the board's access to local information. The female CEO may exert a similar effect in the MFIs.

An interpretation of the few significant results is that Allen and Gale (2000) are correct in maintaining that governance is of little importance for financial performance. Although the results confirm their emphasis on the CEO, their negative argument concerns the board, where we also find significance in international directors and the internal board auditor. Thus, despite the small number of significant results, we conclude that governance matters for the financial performance of microfinance institutions.

5.2. Outreach

Table 6 shows regressions of the effects of our variables on two measures of outreach – the average loan and the number of credit clients.

Table 6

Governance mechanisms generally have little impact on outreach. In fact, only CEO/chairman duality and individual loan are significant. Thus, the CEO/chairman can increase the number of customers. This is mainly a firm size effect. An interaction variable of the duality dummy with firm size is positive and significant. By instituting duality, the MFI presumably pursues a managerial goal of firm size maximisation (Berle and Means, 1932).

A puzzling question is why the female CEO is not significant in outreach while she is important for financial performance. We argue that the female CEO is better informed, which should result in greater outreach. However, better information is presumably independent of average loan size and the number of borrowers, thus giving only insignificant coefficients.

Individual loans tend to be associated with higher average loan sizes and fewer credit clients. Group lenders have better outreach compared to individual lenders, confirming the results in Cull et al. (2007).

6. Conclusions

This paper responds to the need for more knowledge on corporate governance in MFIs (CSFI, 2008). Using a comparatively large and unique self-constructed dataset based on rating reports, the effects of owner-board relationships, firm-customer relationships, and external corporate governance on four measures of financial performance and two measures of outreach are studied in MFIs.

Panel data estimations show that financial performance improves when the board has local rather than international directors and when it employs an internal board auditor. Ownership type, however, does not affect financial performance. In the MFI-customer dimension, we find that the MFI is better served with a female CEO. The external mechanisms of competition and bank regulation have little impact on MFI performance. In outreach performance regressions, even fewer governance variables are significant. We find that outreach increases with CEO/chairman duality (the number of credit clients), but decreases with individual loans for both average loan size and the number of credit clients. The significance of results may improve with better data.

Several of this study's findings and non-findings are puzzling, which motivates future research and the reconsideration of governance policy guidelines in the industry. We suggest the following five points.

First, a wholesale importation of best practices in governance mechanisms from mature markets is probably counter-productive at this stage of the industry's development. Traditional board

oversight and public regulation do not seem to be solutions to MFI governance, and the call for transforming NPOs into shareholder-owned firms lacks foundation. Instead, there is a need to better understand how the MFI can tap into local information networks, and how different incorporations operating in the same market influence MFI performance and overall customer satisfaction and outreach.

Second, the surprising effect of competition--that it may not bring customer benefits--highlights not only a need for new research, but also the need to search for governance mechanisms that do bring benefits to both the MFI and its customers. Perhaps studies of past pro-poor banking systems such as savings banks and cooperatives, which once operated in uncompetitive and unregulated markets similar to MFIs (Caprio and Vitas, 1997), can yield new governance knowledge for today.

Third, it is important to ask why individual lending reduces outreach, noting that MFIs tend to shift from group loans to individual loans (Armendariz de Aghion and Morduch, 2005). The results in Table 5 indicate that individual lending is not related to improved financial results, so why are MFIs shifting in their methodology when it lowers outreach? New dedicated studies are necessary to better understand the trade-offs in lending methodology.

Fourth, the negative effect of international directors on MFI financial performance warrant further research into the effect of international influence on MFI performance. Numerous international actors such as lenders, consultants, investors, networks, donors, and service providers are active in the microfinance industry. What is their impact? Does their presence hinder the MFI in its efforts to build relationships with local stakeholders?

Finally, the low stakeholder representation found in MFI boards deserves further study. Who is actually governing MFIs, and how do they govern? Are most MFIs fundamentally dominated by managers, and if so, does it matter?

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Table 1: Descriptive statistics for dependent variables used in the analysis

Variable	*Mean*	*Std*	*Min*	*Max*	*N*	*Definition*
ROA	0.015	0.126	-0.898	0.790	891	(Net operating income)/(Average annual assets)
OSS	1.119	0.384	0.076	2.949	614	(Revenue from operations)/(Financial expense + loan loss expense + operating expense)
Portfolio yield	0.391	0.202	0.033	1.825	895	(Interest revenue)/(Average loan portfolio)
Operational costs	0.314	0.263	0.028	3.507	867	(Operating expenses)/(Average loan portfolio)
Average loan	788	1377	2	24589	895	(Loan portfolio)/(Credit clients)
Credit clients	12805	26861	74	394374	905	Number of credit clients

Table 2: Definitions of independent variables and their hypothesised sign with respect to financial performance (FinP) and outreach firm performance

		Hypothesis	
Variable	*Explanation*	FinP	Outreach
CEO/chairman duality	CEO and chairman are the same person	+/-	-
International directors	International directors divided by board size	+	-
Internal board auditor	A dummy with the value 1 if the MFI has an internal auditor reporting to the board	+	-/+
Board size	The number of directors	-	-
SHF	A dummy indicating a shareholder firm when 1	+	-
Female CEO	A dummy indicating a female when 1	+	+
Individual loan	A dummy with the value 1 if loans are made mainly to individuals	+	-
Competition	A self-constructed measure of the local level of competition	-	+
Bank regulated	A dummy with the value 1 if the MFI is regulated by banking authorities	-/+	+
Urban market	A dummy with the value 1 if the market served is urban only	-	-
MFI age	Years of experience as an MFI		
Portfolio at risk	The fraction of the portfolio with more than 30 days in arrears		
Firm size	The natural logarithm of assets		
Human Development Index (HDI)	A composite country index covering life expectancy, education, and income (GDP per capita)		

Table 3: Descriptive statistics of independent variables

Variable	*Mean*	*Std*	*Min*	*Max*	*N*
CEO/chairman duality	0.147	0.355	0.000	1.000	238
International directors	0.576	1.216	0.000	6.000	210
Internal board auditor	0.496	0.501	0.000	1.000	226
Female CEO	0.235	0.425	0.000	1.000	234
Board size	7.391	3.765	2.000	33.000	248
SHF	0.285	0.452	0.000	1.000	277
Bank regulation	0.317	0.466	0.000	1.000	278
Competition	4.414	1,626	1.000	7.000	256
Individual loan	0.536	0.500	0.000	1.000	261
Urban market	0.363	0.482	0.000	1.000	267
MFI age	9.201	7.327	0.000	79.000	964
Portfolio at risk (30)	0.071	0.105	0.000	0.980	839
Firm size	14.887	1.367	9.856	19.337	930
Human Dev. Index	0.684	0.120	0.338	0.863	274

Table 4: Pearson correlations between explanatory variables

	Int. dir.	Intern audit	Board size	SHF	Femal CEO	Indiv. loan	Bank Regul.	Compe	Urban Market	MFI age	PaR30	Assets	HDI
CEO/chair.	-0.128	0.054	-0.026	0.020	0.029	-0.089	-0.037	0.045	-0.030	-0.027	-0.016	0.091	-0.068
Internat. Dir.		**0.174**	**-0.149**	***0.219***	-0.010	-0.034	0.120	-0.062	-0.113	***-0.225***	***-0.193***	-0.053	-0.089
Internal auditor			-0.137	***0.184***	-0.002	0.096	**0.168**	***0.199***	**-0.192**	0.100	-0.054	***0.212***	0.114
Board size				**-0.206**	***0.169***	***-0.185***	-0.008	**-0.221**	0.034	0.009	-0.004	0.057	-0.084
SHF					***-0.170***	**0.144**	***0.503***	0.020	0.114	-0.061	-0.081	***0.198***	**-0.133**
Female CEO						-0.095	-0.059	-0.086	**-0.123**	-0.069	-0.062	-0.096	**0.161**
Individual loan							***0.172***	0.077	0.049	0.015	0.120	***0.162***	***0.272***
Bank regul.								0.014	***0.191***	0.066	-0.045	***0.195***	***-0.174***
Competition									**-0.120**	0.089	0.053	**0.125**	-0.053
Urban market										-0.065	**-0.243**	-0.007	0.003
MFI age											***0.180***	***0.424***	-0.003
PaR30												0.106	-0.005
Assets													-0.085

Bold: Correlation is significant at the 0.05 level (2-tailed).
Bold and italics: Correlation is significant at the 0.01 level (2-tailed).

Table 5: Return on assets (ROA), operational self-sufficiency (OSS), portfolio yield (PY), and operational costs (OC) explained by board characteristics, internal and external governance mechanisms, and firm and economy characteristics. 3SLS random effects estimation of panel data spanning 1998 to 2007.

	ROA	OSS	PY	OC
Constant	-0.418**	-0.411	-0.104**	1.140**
CEO/chairman duality	-0.032	-0.154	0.118**	0.074
International directors	-0.010	-0.095**	0.010	0.037**
Internal board auditor	0.022	0.133*	-0.034	-0.018
Board size	-0.001	-0.005	-0.001	0.001
SHF	-0.012	-0.129	-0.011	0.027
Female CEO	0.053**	0.215**	0.059	-0.036
Individual loan	0.034	0.014	-0.026	-0.039
Competition	0.011	-0.011	0.022*	0.004
Bank regulation	0.005	0.056	0.019	0.015
Urban market	0.001	0.090	0.066*	0.044
MFI experience	0.000	-0.010**	-0.002	-0.003
Portfolio at risk (30)	-0.085	0.436**	-0.132*	-0.131**
Firm size	0.026**	0.119**	0.006	-0.078**
Human dev. Index	-0.100	-0.194	0.279	0.413**
Wald F (sign.)	0.002	0.000	0.000	0.000
Firm years	342	303	343	352

The Wald test (Greene, 2003 p. 107) is here a test of the null hypothesis that the coefficients in the given equation are all zero. A low value indicates null hypothesis rejection. If R is the $\mathrm{q} \times \mathrm{K}$ matrix of q restrictions and K coefficients, $\hat{\gamma}$ the K vector of coefficients, and r the vector of the q restrictions, the Wald χ^2 statistic is $\chi^2(\mathrm{q}) = \left(\mathrm{r} - \mathrm{R}\hat{\gamma}\right)' \left[\mathrm{R}\sum_{\mathrm{X}}\mathrm{R}'\right]^{-1}\left(\mathrm{r} - \mathrm{R}\hat{\gamma}\right)$, where $\sum_{\mathrm{X}}$ is the estimated covariance matrix of coefficients.

Significant results at the 5% (10%) level are marked with ** (*).

Variables are defined in Table 1.

ROA is inflation-adjusted. ROA0 is for the most recent rating year, ROA1 for the second most recent year. The same applies to OSS0, OSS1.

Table 6: Outreach performance, specified as average loan size and the number of credit clients, regressed on board characteristics, MFI innovations, and external variables. Random effects panel data 3SLS estimation for four years of observations.

	Average Loan	Credit Client
Constant	-2.825**	-58.962**
CEO/chairman duality	-0.120	14.004**
International directors	-0.068	-0.201
Internal board auditor	-0.067	1.110
Board size	-0.028	0.801
SHF	-0.241	0.059
Female CEO	0.180	4.964
Individual loan	0.548**	-6.641*
Competition	-0.020	1.410
Bank regulation	0.234	-0.673
Urban market	-0.170	1.442
MFI experience	-0.020*	0.221
Portfolio at risk (30)	0.331	1.784
Firm size	0.209**	5.228**
Human dev. Index	0.999	-33.809**
Wald F (sign.)	0.000	0.000
Firm years	351	355

Average loan size is defined to be between US $0 to $10,000, and weighted using purchasing power parity GDP adjustments (IMF: World Economic Outlook).
The number of credit clients is scaled by 1,000.