

# A New Index of the Business Environment for Microfinance

*Robert Cull*  
*Sergio Navajas*  
*Ippei Nishida*  
*Renate Zeiler*

The World Bank  
Development Research Group  
Finance and Private Sector Development Team  
September 2013



## Abstract

This paper describes a new index of the quality of the business environment for microfinance institutions (the Global Microscope on the Microfinance Business Environment). Regressions are used to validate the index by linking it and its subcomponents to microfinance outcomes. The main findings are that the components of the index related to the supporting institutional framework are strongly linked to measures of microfinance penetration (such as microfinance borrowers as a share of total population). Components

related to the framework for regulation and supervision are more strongly linked to outcomes at the microfinance institution level, including loan portfolio quality, financial self-sufficiency, average loan size, and the share of lending to women. Many, but not all, of these relationships are robust to using instrumental variables estimation in which a country's general stringency with respect to financial regulation is used as an instrument for the index and its components.

---

This paper is a product of the Finance and Private Sector Development Team, Development Research Group. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at [rcull@worldbank.org](mailto:rcull@worldbank.org).

*The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.*

# **A New Index of the Business Environment for Microfinance**

**Robert Cull, Sergio Navajas, Ippei Nishida, Renate Zeiler\***

JEL CODES: G21; O16.

KEY WORDS: microfinance, business environment, developing countries.

---

\* Cull and Nishida are from the World Bank Development Research Group, Navajas is from the Multilateral Investment fund (MIF), member of the Inter-American Development Bank Group, and Zeiler is from the International Finance Corporation (IFC). We have benefited from helpful comments from participants in the panel discussions to revise the Global Microscope on the Microfinance Business Environment, including especially colleagues from the Economist Intelligence Unit, Vanesa Sanchez and Lucy Hurst. We also benefited from comments from participants at the Foromic conference in Barbados in October, 2012. We are grateful to the authors' respective institutions for financial support. We are responsible for all remaining errors.

Recent years have witnessed a concerted effort to measure the quality of the environment for business and investment, and assess its implications for economic growth. Perhaps the most well-known example, the World Bank's Ease of Doing Business index focuses on the complexity of business regulations and the strength of property rights protections. This index is a composite of information on the ease of performing specific business activities including starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency (Doing Business, 2012).

This and similar indexes have been shown to be strongly associated with economic outcomes. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2002) find that burdensome regulations governing business entry are associated with higher levels of corruption and a larger unofficial economy. Ciccone and Papaioannou (2007) confirm that longer periods to register a new business are significantly negatively associated with business entry. Similarly, using a large database of European firms, Klapper, Laeven, and Rajan (2006) find that more streamlined business entry regulations contribute to more rapid creation of new firms, and effects are most pronounced in industries that naturally have a high rate of entry.

Moreover, regulatory and procedural reforms have improved the quality of the business environment as measured by these indexes. For example, since 2003, 17 countries (including Belgium, Ireland, Mauritius, and Norway) have introduced electronic registration, which has shortened the average reported time to start a business from 40 days to 14. In addition, because it substantially reduces contact between entrepreneurs and government officials, online registration improves transparency and reduces opportunities for corrupt behavior such as demands for bribes. Ultimately, the quality of the business environment impacts economic growth. Using measures of business regulations in 135 countries from 1993 to 2002, Djankov, McLiesh, and Ramalho (2006) show that an improvement in the business environment from the worst quartile of their sample to the best is associated with an increase in annual growth of 2.3 percentage points.

In principle, aspects of the business environment are also likely to affect microfinance and its clients (who are largely in the informal sector), though not necessarily in the same ways that it has been shown to affect firms in the formal economy. By 2011, the microfinance industry was serving over 200 million clients worldwide and had \$73 billion in loans outstanding.<sup>1</sup> As the industry has grown and flourished, so too has academic interest in it, though studies have tended to focus on the mechanics of micro-lending (e.g., group liability lending) and the impact of micro-banking services on clients and their households. Less attention has been paid to the macro impacts of microfinance on developing economies or the environments (macroeconomic, institutional, regulatory, and financial) in which microfinance institutions ("MFIs") are most likely to flourish. In this paper, we therefore describe and attempt to validate a new tool, the

---

<sup>1</sup> *Microfinance Banana Skins Survey 2012*, Centre for the Study of Financial Innovation.

Global Microscope on the Microfinance Business Environment (hereafter, “the Microscope”), that summarizes the quality of the business environment as it pertains specifically to the microfinance industry.

The 2011 Microscope summarizes information from surveys that were conducted by the Economist Intelligence Unit (EIU) of microfinance experts in each country in an index comprised of two broad categories. The first, *Regulatory Framework and Practices*, has five subcomponents: regulation and supervision of microfinance portfolios; formation of regulated and supervised microcredit institutions; formation and operations of non-regulated microcredit institutions; regulatory and supervisory capacity for microfinance; and the regulatory framework for deposit taking.<sup>2</sup> The second broad category, the *Supporting Institutional Framework for Microfinance*, also summarizes expert survey responses in five areas: microfinance institutions’ accounting transparency; microfinance client protection as it relates to transparency in pricing; client protection as it relates to resolution of disputes between microfinance borrowers and lenders; the effectiveness and reliability of credit bureaus for microfinance; and the quality of policies and practices for financial transactions through agents. The overall index also makes adjustments for political shocks and tensions that could affect microfinance operations and for general political stability.<sup>3</sup>

To provide additional context for the revised Microscope, the 2011 report provides information from the Microfinance Information Exchange (the MIX) on the average financial performance, overall penetration measures, proxies for outreach to the poor, deposit levels, and measures of efficiency for microfinance institutions in each country. That report also marked the beginning of an analytical effort to empirically validate the revised index by linking it (and its subcomponents) to the microfinance outcomes reported by the MIX and other sources. In the analysis that follows, we control for a number of factors that could also affect microfinance penetration measures (and other MIX outcomes) including macroeconomic variables such as GDP growth and inflation and non-performance characteristics of microfinance institutions in each country such as their age, legal status (non-profit, for profit), organizational type (bank, non-bank formal financial institution, NGO), and preferred lending methodology (individual liability, group liability, or village banking).<sup>4</sup>

---

<sup>2</sup> See, Economist Intelligence Unit, “Global Microscope on the Microfinance Business Environment 2011” for fuller description of the survey methodology and questions and Appendix A of this document for the format of questions used in the survey that enter this analysis.

<sup>3</sup> The 2011 Microscope represents a major reorganization of previous versions. Not only have the sub-components and their groupings changed, but a major effort was made to adapt the questions specifically to the microfinance context. For example, the components related to the institutional framework were changed from previous versions to make sure that questions asked respondents about institutional development (e.g., accounting standards, client protection) only as it pertained to microfinance institutions.

<sup>4</sup> We are very grateful to Blaine Stephens of the MIX and Scott Gaul (formerly of the MIX) for help in obtaining the data and advice on its use.

In this paper we undertake multiple empirical analyses to (a) test whether the links between the Microscope and MFI outcomes are robust to controlling simultaneously for other relevant variables, (b) identify which components of the index best explain variation in which outcomes, and (c) examine where microfinance fits into the broader formal financial sector across developing countries, and how the interplay between microfinance institutions and formal providers of financial services is related to the Microscope and its components.

In addition, the direction of causation is sometimes difficult to infer from simple correlations. For example, it could well be that supervisory capacity improves as a result of widespread microfinance penetration rather than the reverse. We therefore provide instrumental variables regressions to address the potential endogeneity of the Microscope. As instruments we rely on measures of the strictness of commercial banking regulation and supervision in a country reasoning that those variables reveal a general approach to financial regulation that could be tied to underlying exogenous factors such as culture, ethnic fractionalization, religion, and geography. Importantly, because the microfinance sector is quite small relative to the formal banking sector in almost every country, it is plausible to argue that a country's approach to banking sector regulation and supervision is much more likely to influence microfinance regulation and supervision than the reverse. In essence, we use the broader financial regulatory variables to identify an exogenous component of the microfinance business environment and we link it to microfinance financial performance and outreach.

Microfinance institutions occupy unique places within the financial sectors of developing countries, niches that vary by country. The interplay between the microfinance and banking sectors is therefore likely to shape both the business environment for microfinance and resulting outcomes in terms of their financial performance and outreach to underserved market segments, and thus we account for the development of the formal financial sector in the analyses that follow.<sup>5</sup> We also hypothesize and test whether responses to the competitive and business environment vary across types of MFIs, as has been suggested by recent studies. Baquero, Hamadi, and Heinen (2012) use combined data from three rating agencies to construct measures of concentration and competition within the microfinance sector. They find that non-profit institutions are relatively insensitive to competitive pressures, while for-profit institutions are sensitive. Competition pushes the for-profit microfinance institutions to reduce interest rates charged to borrowers, creating greater consumer surplus. Similarly, Cull, Demirguc-Kunt, and

---

<sup>5</sup> In that sense, our work is related to a growing body of research on competition between banks and microfinance institutions (and within the microfinance sector itself). For example, Vanroose and D'Espallier (2013) find that microfinance institutions reach more clients and are more profitable in countries where the formal banking sector is less developed. This suggests that microfinance institutions fill niches left uncovered by lagging bank development. However, another interpretation consistent with those results is that as the formal banking sector develops, it puts competitive pressure on microfinance providers resulting in lower profitability and competition for the most attractive customers. This interpretation is consistent with Hermes, Lensink, and Meesters (2009) who use a stochastic frontier analysis to show that MFIs are more efficient where the formal financial system is better developed.

Morduch (forthcoming) show that microbanks are more likely to respond to competition from commercial banks by reducing their average loan size than NGO MFIs (who maintain smaller loans sizes than microbanks regardless of competition from banks).<sup>6</sup>

## 1. The Microscope and Microfinance Penetration at the Country Level

Broad outreach to a large number of customers is one basic indication that the business environment is conducive to a flourishing microfinance sector. As a first step, the analysis assesses the strength of relationships between the Microscope and measures of the market penetration of microfinance institutions (MFIs). At the country level we focus on three penetration measures: the number of borrowers as a share of the total population, of the self-employed population, and of the poor population. All three measures yield qualitatively similar results, and thus we present only those that use borrowers as a share of the total population in Table 1. The simple country-level regression linking penetration to the Microscope is summarized in equation (1):

$$(1) \text{ Penetration}_i = \alpha + \beta_1 \text{MICROSCOPE}_i + \beta_2 \text{FORMAL}_i + \beta_3 \text{Country}_i + \varepsilon_i$$

MICROSCOPE represents a set of potential explanatory variables including the overall index, its broad subcategories (regulatory framework and practices and supporting institutional framework), and the components of those subcategories. Like the penetration variables, the MICROSCOPE is measured at the country level. ‘Country’ represents a set of control variables that have been important in describing variation in MFI performance and outcomes across countries. The two key macroeconomic variables are current GDP growth and annual inflation.<sup>7</sup> The set of country controls includes a general measure of institutional development (adherence to the rule of law), and a composite measure of the quality of the business environment (the “Ease of Doing Business” index). Many of those controls could be negatively associated with microfinance penetration because development on those dimensions might make it easier for formal (i.e., non-MFI) banking institutions to flourish. In addition, we control directly for the efficiency of the formal banking sector using the ratio of bank overhead costs to total assets averaged across banks in each country. Appendix B provides definitions and summary statistics for all of the variables used in the regression analysis.

Table 1, Panel A shows that a country’s Overall Nominal Score on the Microscope is positively associated with microfinance penetration, though it achieves significance at conventionally accepted levels in only one model, and does not achieve significance in any of the instrumental variables (hereafter IV) models. In large part, this is because the instruments are not

---

<sup>6</sup> Conversely, to maintain profitability, microbanks appear to absorb the costs associated with prudential supervision by increasing their average loan size whereas NGOs maintain small loan sizes but suffer reduced profitability (Cull, Demirguc-Kunt, and Morduch, 2011).

<sup>7</sup> See, for example, Ahlin, Lin, and Maio (2011) on the importance of controlling for growth and inflation when benchmarking MFI performance across institutions operating in different countries.

strongly linked to overall Microscope scores at the country level (see the low F-statistics for excluded instruments and Shea's partial r-squared statistic at the bottom of the panel).<sup>8</sup> Still, in the other models a 1-point increase in the overall Microscope score (relative to a mean of 46.2, standard deviation of 12.1) is associated with a 0.05-0.10 percentage point increase the share of microfinance (MF) borrowers relative to the population (mean 3.9%, standard deviation 3.6%). Most of the control variables are also not significant, though our measure of formal institutional development (adherence to the rule of law) is negative and significant in some specifications, as hypothesized.

In Table 1, Panel B the overall Microscope score is replaced with the score for the category *Supporting Institutional Framework for Microfinance* (hereafter the SIF score). That score is much more robustly associated with microfinance penetration than the overall score. The coefficient for the SIF variable is positive in all models, and significant in all but two, including multiple IV models. The magnitude of the coefficient is also slightly larger than that for the overall Microscope in Panel A. In addition, adherence to rule of law is more robustly negatively associated with microfinance penetration across models, and inflation is negative (and significant in one model), suggesting that an unstable pricing environment adversely affects the extension of microcredit in much the same way that it is a drag on lending by banks.

In Panel C, we focus on a specific aspect of the supporting institutional framework, by replacing the SIF score with that for the subcomponent describing client protection as it relates to transparency in pricing (hereafter TIP). The TIP score is strongly positively associated with microfinance penetration across estimation techniques. Its coefficient implies that a 1-point increase in the TIP score is associated with 2-4 percentage point increase in microfinance borrowers as a share of the population.<sup>9</sup> Again, microfinance borrowers represent about 4 percent of the population in the typical country in our sample, so a 2-4 percentage point increase is substantial. The control variables in Panel C perform similarly to those in Panels A and B, except that the Ease of Doing Business Index, a measure of the quality of the business environment for formal firms is negatively associated with microfinance penetration.<sup>10</sup>

Overall, the country level results provide some indications that the Microscope, and especially its components related to the supporting institutional framework and client protection, is associated with broader microfinance penetration. Because the revised Microscope is available for only a single year, and thus the analysis in this section relates only the most recent

---

<sup>8</sup> Again, the instruments describe a country's supervisory approach to commercial banks. They include (a) the discretion of supervisors to exercise forbearance in dealing with banks, (b) the political independence of the supervisory authority, and (c) the share of the ten largest banks that are rated by a domestic rating agency. The inclusion of the instruments also reduces sample size considerably, making it harder to identify significant relationships.

<sup>9</sup> Note that the overall and SIF scores are calculated on a 0-100 basis, whereas the TIP score (and those for other sub-components) take values from 0 to 4. The coefficients for the two types of variables are not, therefore, directly comparable to one another.

<sup>10</sup> This, too, was hypothesized.



microfinance penetration figures to the index, there are relatively few observations available for the regressions. In terms of validating the Microscope, it is therefore encouraging that there are significant relationships between penetration and the index across multiple estimation techniques and after controlling for additional factors that are likely to affect penetration. Also, the general insignificance of the components of the Microscope related to the *Regulatory Framework and Practices* (hereafter RFP) at the country level should not be taken to indicate that those parts of the index are not useful for describing variation in microfinance outcomes. In fact, in the next section, we use detailed MFI-level data to show that the RFP index (and its subcomponents) can explain substantial variation in financial performance, portfolio quality, and outreach profiles across institutions.

## 2. The Microscope and MFIs' Financial Performance and Outreach

While it would be desirable to link changes in the Microscope index to changes in MFI performance, such time series data are not currently available. To the extent that the Microscope is repeated over a reasonably long time horizon (say five years) this may become possible, but for now the revised index is available for only a single year, 2011. In recent years, however, the quality of the data produced by the *Microfinance Information Exchange* (the MIX) at the MFI-level has steadily improved so that the institutions that hold the vast majority of microfinance assets in many (or most) countries now report to the MIX. This makes it possible to test whether the business environment for microfinance as described by the Microscope affects different types of MFIs in different ways. For example, an environment conducive to the formation and operations of non-regulated MFIs is likely to have greater relevance for NGO microfinance institutions than for regulated commercial banks that provide microfinance services. With respect to the *Supporting Institutional Framework for Microfinance*, credit bureaus and effective dispute resolution mechanisms could be more relevant for MFIs that make loans based on individual liability (such as commercial banks) than for MFIs that extend group liability loans (which are more likely to be NGOs). Here we consider separately how the business environment is likely to affect the financial performance of MFIs and their outreach to the disadvantaged.

### a. Outreach

Equation 2 links measures of outreach for MFI  $j$  in country  $i$  to characteristics of that MFI, country level control variables, and to the Microscope. Measurement of outreach to poorer population segments (i.e., *depth* of outreach) is more difficult than for breadth of outreach in terms of the number of clients served. It is not a surprise, therefore, that variables such as the size and growth of MFI loan portfolios and growth in the number of MFI clients have provided the easiest path to study outreach. Two readily available, though admittedly imperfect, indicators of depth of outreach are average loan size as a percentage of per capita GDP and the share of total loans directed toward women. In the literature, smaller loan sizes and greater lending to women

have been taken to indicate greater depth of outreach.<sup>11</sup> Because depth of outreach is at least as important as its breadth for most MFIs, we focus on those two variables in the analyses that follow.

Both the MICROSCOPE and ‘Country’ variables are measured at country level as described above. Because we have more observations than in the country-level penetration regressions we are also able to include a basic measure of banking sector development, *Bank Cred/GDP*, in the MFI-level regressions. We also include regional dummy variables in the regressions since those have explained substantial variation in the outreach and financial performance of MFIs in other studies (see, e.g., Cull, Demirguc-Kunt, and Morduch, 2007). ‘MFI’ represents a set of variables summarizing an MFI’s characteristics including its size in terms of assets, organizational type (bank, rural bank, credit union, cooperative, non-bank financial institution, or NGO), and preferred lending methodology.<sup>12</sup> The lending methodology variables are not available for a substantial fraction of the MFIs in our sample. We therefore present models with and without those variables.

$$(2) \text{ OUTREACH}_{ij} = \alpha + \beta_1 \text{MICROSCOPE}_i + \beta_2 \text{Country}_i + \beta_3 \text{MFI}_{ij} + \varepsilon_{ij}$$

The organizational type for each MFI is among the control variables under the ‘MFI’ umbrella in Equation 2. To derive more precise tests of how the business environment affects the financial performance of different types of MFIs, Equation 3 adds interactions between the Microscope and dummy variables describing organizational type to the set of explanatory variables. The coefficients on the simple organizational type dummy variables will therefore summarize the average depth of outreach for that type, while the coefficient on the interaction term ( $\beta_2$ ) summarizes how that average effect changes as the business environment for microfinance as summarized in the Microscope improves (or worsens).

$$(3) \text{ OUTREACH}_{ij} = \alpha + \beta_1 \text{MICROSCOPE}_i + \beta_2 \text{MICROSCOPE}_i * \text{Type}_j + \beta_3 \text{Country}_i + \beta_4 \text{MFI}_{ij} + \varepsilon_{ij}$$

Results from regressions that use average loan size (as a share of per capita income) appear in Table 2. In Panel A, the overall Microscope score is used as the measure of the quality of the business environment for microfinance. As in the country-level penetration regressions,

---

<sup>11</sup> See, for example, Cull, Demirguc-Kunt, and Morduch (2009).

<sup>12</sup> Note that the revised Microscope carries a 2011 title, while the most recent MFI-level data from the MIX is for 2010. While this might seem problematic at first blush, the survey underlying the Microscope was conducted beginning in late 2010 and 2011, so the two sources of information are close to contemporaneous. Also, to the extent that survey responses tend to summarize the recent past rather than forecast future events, this is not a severe problem. Moreover, to the extent that there is persistence in both MFI financial performance over time and in the Microscope, the relationships that are uncovered are unlikely to be misleading. Certainly, measures such as portfolio quality are likely to exhibit such persistence because they tend to change relatively slowly over time. In any event, given the time-consuming nature of collecting, vetting, and processing the MFI-level information, the MIX data will always lag the Microscope by some interval.

there is not a robust relationship between the overall score and average loan size, though there is a significant positive relationship in the IV models. This suggests that loan sizes are larger (and thus outreach less deep) for MFIs in countries with higher overall Microscope scores.

The control variables explain more variation in the MFI-level regressions than in the country-level ones. For example, in Panel A, *Bank Credit/GDP* and the *Ease of Doing Business Index* are both associated with larger loan sizes. Regional dummies also explain some variation. Loan sizes (relative to per capita income) tend to be larger in Eastern Europe and Central Asia and Sub-Saharan Africa. Larger MFIs (as measured by the log of their assets) extend larger loans, while non-bank financial institutions (NBFIs) and NGOs, and to a lesser extent, credit unions/cooperatives, grant smaller loans than microfinance banks and rural microfinance banks (the omitted organizational type in our regressions). Finally, MFIs that extend loans based on individual liability make larger loans than those that rely on group liability.

In sum, the coefficients on the country- and MFI-level control variables are sensible and the overall fit of the regressions is reasonably good (r-squared between .20 and .55). Moreover, in the IV regressions the instruments are relevant (as indicated by the Shea partial r-squared statistic) and valid (see insignificance for the Hansen J statistic).<sup>13</sup> We use the same instruments in those models as we did in the country-level regressions.

We next drill down to examine the relationship between components of the Microscope and loan size. To conserve space, and because we have many results worthy of note, we do not present the coefficients for the country- and MFI-level control variables in subsequent panels and tables. In Panel B, we find that the sub-index of the Microscope for *Regulatory Framework and Practices* (RFP) is robustly positively linked to average loan size, and the test statistics for the IV models are similar to those presented in Panel A. While our prior was that it was just as likely that microfinance business models that produce large loan sizes prompt improvements in the regulatory framework as the reverse, the positive coefficients for RFP in the IV models suggest that stronger regulatory frameworks and practices positively influence loan sizes. Similar results are found in Table 2, Panel D in which the Microscope subcomponent for the *Regulatory Framework for Deposit Taking* (RFDT) is used as the measure of the microfinance business environment. This suggests that deposit taking, and the more highly developed regulatory framework that tends to accompany it, is associated with larger loan sizes. This is also consistent with results from past studies that indicate (a) deposit taking tends to trigger prudential supervision of MFIs, and (b) more stringent supervision is associated with larger loan sizes (Christen, Lyman, and Rosenberg, 2003; Cull, Demirguc-Kunt, and Morduch, 2011).

---

<sup>13</sup> The F-statistics for the excluded instruments in the first stage in the IV models are significant, which provides another indication that the instruments are relevant. They do not, however, approach 10, which is a rough benchmark for highly relevant instruments.

In contrast, the subcomponents of the Microscope related to regulatory and supervisory capacity (Panel C) and the formation/operation of unregulated microfinance institutions (Panel E) are not as strongly associated with average loan sizes. There is some evidence from the IV models that both of those subcomponents are positively linked to loan sizes. However, the test statistics indicate that our instruments are not particularly relevant for those variables, and thus we do not put much stock in those results.

Note that to conserve space we present results only for the *Regulatory Framework and Practices* portion of the Microscope. This does not imply that the *Supporting Institutional Framework* (and its subcomponents) is not significantly associated with MFI-level outcomes. For example, the subcomponent measuring client protection and pricing transparency is strongly positive associated with larger MFI loan portfolios and larger average loan sizes. Still, more robust relationships at the MFI level are found for a number of the RFP variables, and so we emphasize those in this section of the paper.

In Table 3, we interact the Microscope variables with our organizational type variables to better understand the types of MFIs responsible for the significant relationships between the Microscope and average loan size found in Table 2. In Panel B, the coefficient for the RFP sub-index variable is positive and insignificant or weakly significant. This indicates that there is no strong relationship between the regulatory framework and average loan size for MFIs in the omitted category, NGOs. By contrast, the interaction between the RFP sub-index and NBF status and the one between the RFP sub-index and MFIs in the combined category that includes banks and credit unions/cooperatives are positive and sometimes significant.<sup>14</sup> To evaluate the effect of the regulatory framework on average loan size we need to add the coefficient for the RFP sub-index and the respective interactions, and test whether the sum is significantly different from zero. Those statistics, which appear at the bottom of Panel B, show a significant positive relationship between the RFP sub-index and average loan size for all MFIs other than NGOs. This suggests that those banks, which tend to be more commercially-oriented than NGOs, are the ones whose loan size is influenced by the regulatory framework (as shown in Table 2).

Similar, though perhaps less pronounced, patterns emerge when the Microscope variable used in the interactions is either the overall score (Panel A) or the regulatory framework for deposit taking (Panel D).<sup>15</sup> As in the base results in Table 2, there is no strong relationship between *Regulatory and Supervisory Capacity for Microfinance* and average loan size for any MFI type (Panel C). Finally, Panel E suggests that MFIs in the combined group extend larger loans where the formation of and operation of non-regulated institutions is easier. This could

---

<sup>14</sup> Because rural banks are different from other microbanks in terms of their size and business operations, we show results with and without them included in the combined category in all tables that include Microscope\*organizational type interactions.

<sup>15</sup> Note that the OLS regressions in Panel D suggest a positive significant relationship between the RFP sub-index and average loan size. That relationship appears to be driven by a handful of observations, however. When outliers are accounted for, the relationship is no longer significant, and thus we do not emphasize it here.

suggest a higher degree of client segmentation in countries where non-regulated MFIs are better developed. Overall, the interactions results point to differences between NGOs and other types of MFIs in terms of how the regulatory framework could influence the size of the loans that they extend.

Table 4 shows results from regressions that use our other measure of outreach, the share of lending to women, as the dependent variable. In Panel A, the overall Microscope score is negatively associated with women's lending share, though it is not significant for the IV models. This could be because the inclusion of the instruments substantially reduces the sample size in those regressions. A similar pattern is found for the RFP sub-index in Panel B and the subcomponents for *Regulatory and Supervisory Capacity* (Panel C) and the *Regulatory Framework for Deposit Taking* (Panel D). Because the Microscope variables are insignificant in all of the IV models, we can provide no evidence consistent with the notion that improvements in the regulatory/supervisory framework reduce lending to women. Rather, the significant associations that we find in the non-IV models suggest only that better developed regulatory and supervisory structures (as measured by the Microscope) are found in countries where there is less lending to women.

An interesting sidelight to these results is shown in Panel E, where the *Formation/Operation of Non-regulated Microcredit Institutions* is significantly positively associated with the share of lending to women in multiple models. The result suggests that less formal MFIs are more likely to serve women than formal ones, and that 'light touch' regulatory frameworks may make it easier for them to flourish.

In Table 5, interactions between the Microscope variable and organizational types are introduced for models that use the share of lending to women as the dependent variable. Differences between NGOs and other types of MFIs are not as pronounced as they were for average loan sizes. For example, in Panel A there is a negative significant relationship between the overall Microscope score and the share of lending to women for all MFI types, though the coefficients tend to be a bit larger (in absolute value) for non-NGOs. A similar pattern emerges for the *Regulatory and Supervisory Capacity for Microfinance* variable in Panel C.

The negative relationship between the share of lending to women and the Microscope is especially strong for banks, credit unions, and cooperatives for the *Regulatory Framework and Practices* variable (Panel B) and the *Regulatory Framework for Deposit Taking* variable (Panel D). Because this strong relationship only holds when rural banks are included in the regression, that small subsample of observations is driving the results for the combined group for those variables. We do not, therefore, ascribe much weight to those findings for banks, credit unions, and cooperatives. It does however suggest that rural banks operating in settings where the regulatory and supervisory framework is well established tend to lend less to women.

Finally, Panel E indicates that the *Formation of Non-Regulated Microfinance Institutions* is positively associated with the share of lending to women, but only for NGOs and NBFIs. For all of the Microscope components in Table 5, this is the strongest indication that the type of MFI and its interaction with the regulatory environment matter for lending to women. Again, it appears that less formal MFIs are better able to deepen their outreach to underserved market segments in environments where they are freer to enter and operate.

### ***b. Financial Performance***

The standard measures of financial performance include profitability (ROA and ROE) and measures of financial and operational self-sufficiency that are computed by the MIX. The MIX's financial self-sufficiency (FSS) index adjusts for inflation and the subsidies that MFIs receive such as donated equity and concessional loans, and thus provides a fairer basis for comparing the financial performance of MFIs with different funding structures. We therefore rely on that measure in the regressions that follow, though results are often similar when we use other measures. Measures of loan portfolio quality also serve as the dependent variable in some regressions (also available in the MIX data). The FSS index and the share of the loan portfolio that is 30 days past due simply replace the outreach indicators in Equations 2 and 3.

Table 6 shows results from regressions that use the FSS index as the dependent variable. Unlike for the outreach measures, there are no strong relationships between the Microscope and its subcomponents and the FSS index in the non-IV models. However, there is a significant positive relationship in the IV models between FSS and the Microscope for the overall score (Panel A), the RFP sub-index (Panel B), and the RFDT subcomponent (Panel D).<sup>16</sup> We find it difficult to argue that better developed, more formal regulatory and supervisory practices *cause* MFIs to become more profitable. Rather, the results suggest that strong financial performance for MFIs tends to be a part of business environments that also feature advanced regulation and supervision.

The models with interactions between the Microscope and organizational type also cast doubt on the notion that better developed regulatory structures improve the financial performance of MFIs (see Table 7). Instead, the significant positive coefficient for formal microbanks and credit unions/cooperatives indicates that those types tend to have better financial performance than other types. The significant negative coefficient on the interactions between that group and the Microscope variables (seen in models in all panels in Table 7) indicate that that as the regulatory and supervisory framework develops, the financial performance of those MFIs declines somewhat. Presumably these are the MFIs likely to face the most stringent forms of supervision and so it is plausible that complying with the costs of prudential supervision

---

<sup>16</sup> There are also positive relationships between FSS and the formation/operation of non-regulated microcredit institutions for the IV models in Panel E. However, the test statistics indicate that our instruments are not highly relevant in those models. We therefore do not ascribe much meaning to those significant coefficients.

erodes their profits somewhat. NBFIs show similar patterns, but only in the regressions that use the *Regulatory Framework for Deposit Taking* (RFDT) as the Microscope variable (Panel D).

Table 8 shows that higher scores on multiple dimensions of the Microscope are associated significantly lower non-performing loan ratios. For example, in Panel D a 1-point improvement in the RFDT variable (scored from 0-4) is associated with a 1 percentage point decline the share of the loan portfolio that is considered at risk. This is sizable in an industry where delinquent loans tend to represent substantially less than five percent of an MFI's portfolio. Interpreting those significant relationships is, again, somewhat tricky. Because the coefficients for the Microscope variables are insignificant in the IV models, we are reluctant to conclude that improvements in the regulatory environment cause MFIs to improve the quality of their loan portfolios. It seems more plausible that high repayment rates on loans and a well-developed supervisory structure are elements of the microfinance business environment that tend to go hand in hand. Since the primary purpose of this exercise is to validate that the Microscope can explain variation in microfinance outcomes, we are not as focused on understanding the causal mechanisms underlying some of the significant relationships that we find.

Interactions between the Microscope variables and MFIs' organizational types indicate that the positive relationship between the quality of regulation/supervision as reflected in the Microscope and loan repayment rates holds across types (Table 8). In contrast to the results for the FSS index, where more commercially oriented MFIs appeared to drive the significant relationships for the Microscope variables, the coefficients for the organizational type variables and their interaction terms tend not to be significant. Instead, the coefficients for the Microscope variables themselves are significant in models across multiple panels in Table 8. This, too, could be plausible to the extent that supervisory practices to ensure portfolio quality apply to all types of MFIs. Another interpretation is that less formal MFIs such as NGOs keep default rates low using group liability and peer monitoring, while formal microbanks improve portfolio quality as a result of more stringent supervision. Our regression results suggest that where regulatory/supervisory practice is better developed, both groups have relatively low default rates, though the mechanisms by which they accomplish this may differ.

### **3. The Microscope and the Institutional Landscape of Microfinance**

Both the business environment and the development of the formal financial sector could affect not only the penetration of MFIs but also the composition of those institutions in terms of organizational type (banks, credit unions/cooperatives, non-bank financial intermediaries, and non-governmental organizations). To date, the empirical literature on microfinance has not focused on institutional composition within a country. However, it is possible that certain environments attract particular types of institutions, and recent research (including that presented

above) suggests strongly that organizational type affects MFIs' funding structures, financial performance, and outreach profiles.<sup>17</sup>

To explore these possibilities and as a final empirical exercise, Equation 4 mimics Equation 2, but variables summarizing the organizational types of MFIs within a country replace the outreach measures as the dependent variable. The dependent variables that we use are dummy variables for each organizational type (Banks, credit unions/cooperatives, NGOs, and NBFIs). Thus, we run separate models for each organizational type.

$$(4) \text{Type}_{ij} = \alpha + \beta_1 \text{MICROSCOPE}_i + \beta_2 \text{Country}_i + \beta_3 \text{MFI}_{ij} + \varepsilon_{ij}$$

Table 10 shows results from Logit regressions linking the Microscope variables to the organizational type dummy variables. In general, the Microscope variables are not strongly associated with the likelihood that an MFI assumes a particular organizational form. The main exception is the strong positive association between the *Formation/Operation of Non-regulated Microcredit Institutions* and the likelihood that an MFI is organized as an NGO. Like the results for the share of lending to women, this suggests that this dimension of the Microscope captures information about the conditions under which less formal MFIs that focus on deeper outreach to underserved market segments are likely to do well.

#### 4. Conclusions

At the simplest level, this is an analysis to test whether the newly designed Global Microscope on the Microfinance Business Environment can explain variation in the penetration and performance of microfinance institutions. A number of encouraging signs emerge. Controlling for a large set of potentially relevant control variables, the Microscope and its subcomponents are significantly linked to the overall penetration of microfinance institutions at the country level and to the financial performance and outreach of individual MFIs. Many of these relationships continue to hold when we control for the potential endogeneity of the microscope (i.e., the possibility that microfinance outcomes drive Microscope scores, or that some factor omitted from the analysis drives both Microscope scores and microfinance outcomes) using instrumental variables regressions.

The patterns that emerge are both interesting and sensible. For example, the portions of the Microscope describing the supporting institutional framework for microfinance are significantly positively linked to microfinance penetration at the country level, particularly the

---

<sup>17</sup> Cull, Demircuc-Kunt, and Morduch (2009) show that commercial microfinance banks are more likely than others to have for-profit status, use lending methods based on individual liability, make larger loans, lend less to women, and be relatively profitable. By contrast, NGO microfinance institutions are more likely to have non-profit status, making smaller loans based on group liability, serving more women, relying more heavily on subsidies for their funding, and, ultimately, being less profitable.



components related to client protection and pricing transparency. The parts of the Microscope related to the regulatory framework and supervisory practices are more strongly linked to MFI-level outreach and financial performance. Often these associations suggest that better developed regulatory and supervisory regimes are associated less outreach and better financial performance, but those relationships tend not to hold in instrumental variables regressions, suggesting that regulation/supervision as reflected in the Microscope does not have a causal impact on those outcomes. Rather those associations describe performance and regulatory/supervisory characteristics that go hand in hand in specific types of environments.

Moreover, these positive relationships tend to be much stronger for more formal, commercially oriented MFIs such as banks as compared with NGO MFIs. In addition, the component of the Microscope summarizing the ease of entering and operating a non-regulated MFI displays patterns distinct from other components. It is often associated with deeper outreach for NGOs and NBFIs, meaning smaller loan sizes and a greater share of lending to women. In all, it is impressive that the Microscope explains as much variation in outcomes as it does and can capture such nuances across different types of MFIs.

As mentioned above, going forward it might be possible to link changes in Microscope scores to changes in microfinance outcomes, but that will not be feasible unless and until this version of the Microscope is repeated over multiple years. Perhaps a more promising approach for the near term would be to use the Microscope to help identify regulatory and supervisory improvements that are currently under way or that occurred in the past (as reflected in high current Microscope scores). Researchers could therefore begin conducting case studies linking those improvements to outcomes for individuals and households, thus providing guidance about approaches that have worked in particular contexts.

## **References**

- Ahlin, Christian, Jocelyn Lin, and Michael Maio, 2011. "Where does Microfinance Flourish? Microfinance Institution Performance in Macroeconomic Context." *Journal of Development Economics* 95(2): 105-120.
- Baquero, Guillermo, Malika Hamadi, and Andréas Heinen, 2012. "Competition, Loan Rates and Information Dispersion in Microcredit Markets." European School of Management and Technology Working Paper No. 12-02. Berlin.
- Center for the Study of Financial Innovation, 2012. "Staying Relevant: Microfinance Banana Skins 2012," The CSFI Survey of Microfinance.
- Christen, Robert Peck, Timothy Lyman, and Richard Rosenberg, 2003. *Guiding Principles for Regulation and Supervision of Microfinance*, Washington, DC: Consultative Group to Assist the Poor.
- Cicchone, Antonio, and Elias Papaioannou, 2007. "Red Tape And Delayed Entry." *Journal of the European Economic Association* 5(2-3): 444-458.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch, Forthcoming. "Banks and Microbanks." *Journal of Financial Services Research*.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch, 2011. "Does Regulatory Supervision Curtail Microfinance Profitability and Outreach?" (joint with Asli Demirgüç-Kunt and Jonathan Morduch), *World Development*, 39(6): 949-965.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch, 2009. "Microfinance Meets the Market." *Journal of Economic Perspectives*, 23(1): 167-192.
- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch, 2007. "Financial Performance and Outreach: A Global Analysis of Leading Microbanks." *Economic Journal*, 117(517): F107-F133.
- Djankov, Simeon, 2009. "The Regulation Of Entry: A Survey." *World Bank Research Observer*, 24(2): 183-203.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez-De-Silanes, and Andrei Shleifer, 2002. "The Regulation Of Entry." *Quarterly Journal of Economics*, 117(1): 1-37.
- Djankov, Simeon, Caralee McLiesh, and Rita Ramalho, 2006. "Regulation and Growth." *Economics Letters*, 92(3): 395-401.
- Doing Business, 2012. "Doing Business 2013 - Smarter Regulations for Small and Medium-Size Enterprises " *Doing Business - Measuring Business Regulations - World Bank Group*.

- Economist Intelligence Unit, 2011. "Global Microscope on the Microfinance Business Environment 2011."
- Hermes, Niels, Robert Lensink, and Aljar Meesters, 2009. "Financial Development and Efficiency of Microfinance Institutions." University of Groningen, mimeo.
- Hermes, Niels, Robert Lensink, and Aljar Meesters, 2011. "Outreach and Efficiency of Microfinance Institutions." *World Development*, 39(6): 938-948.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi, 2007. "Governance Matters VI: Governance Indicators of 1996-2006." World Bank Policy Research Working Paper 4280. Washington, DC.
- Klapper, Leora, Lus Laeven, and Raghuram Rajan, 2006. "Entry Regulation as a Barrier to Entrepreneurship." *Journal of Financial Economics* 82(3): 591-629.
- Maksudova, Nargiza, 2010. "Macroeconomics of Microfinance: How Do the Channels Work?" CERGE-EI Working Paper Series No. 423. Prague.
- Vanroose, Annabel and Bert D'Espallier. 2013. "Do Microfinance Institutions Accomplish Their Mission? Evidence from the Relationship Between Traditional Financial Sector Development and Microfinance Institutions' Outreach and Performance." *Applied Economics* 45(15): 1965-1982.
- Vanroose, Annabel and Bert D'Espallier. 2009. "Microfinance and Financial Sector Development." Centre Emile Bernheim Working Paper no. 09/240.

# Table 1. Country-level regression

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. All models are estimated via three regression models: ordinary least squares (OLS), robust regression and instrumental variable model. In dropping outlier model, Top 5% samples on each dependent variable. The details of instrumental variable model are shown as below.

\*1 IV1: 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 IV2: 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

\*3 IV3: 1st excluded IV is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies, and 2nd is Independence of Supervisory Authority - Political respectively

## Panel A: Overall Score Nominal

	Dependent Variable: Number of borrowers as % of population						
	OLS	Robust Reg	OLS dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>	Instrumental Variable 3* <sup>3</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Overall Score Nominal	0.0463 [0.277]	0.0912** [0.017]	0.0642 [0.101]	0.0487 [0.348]	0.2319 [0.138]	0.1258 [0.260]	0.3466 [0.135]
Inflation, GDP deflator (annual %)	-0.1321 [0.273]	-0.1139 [0.279]	-0.1003 [0.357]	-0.1024 [0.531]	-0.086 [0.624]	-0.105 [0.402]	-0.1004 [0.649]
GDP growth (annual %)	0.0053 [0.980]	-0.061 [0.740]	-0.0319 [0.867]	-0.1687 [0.569]	-0.0626 [0.848]	-0.1284 [0.559]	-0.1759 [0.684]
Rule of law	-1.9015* [0.080]	-1.6397* [0.084]	-1.6604* [0.091]	-1.6968 [0.184]	-0.6516 [0.681]	-1.4536 [0.212]	-0.2136 [0.917]
Bank overhead costs / Total assets	-12.2374 [0.397]	-3.1799 [0.800]	-9.4274 [0.470]	-10.8249 [0.533]	-13.5384 [0.469]	-18.6009 [0.305]	-22.7005 [0.414]
Ease of doing business index (1=most business-friendly regulations)	-0.0168 [0.234]	-0.0144 [0.241]	-0.0175 [0.170]	-0.0187 [0.272]	-0.0089 [0.651]	-0.0097 [0.531]	0 [1.000]
Constant	3.2903 [0.267]	0.4184 [0.870]	2.3342 [0.384]	3.8895 [0.290]	-5.2471 [0.526]	-0.0435 [0.994]	-9.6378 [0.399]
Observations (countries)	47	47	46	34	34	36	31
R-squared	0.159	0.276	0.2	0.179	-0.214	0.156	-0.792
Adjusted R-squared	0.033	0.168	0.077	-0.004	-0.484	-0.019	-1.239
F statistics for excluded instruments on 1st stage					1.849	2.502	1.172
Shea's adj. partial R-sq					0.125	0.152	0.093
P-values of Hansen J statistics					0.022	0.724	0.140

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. All models are estimated via three regression models: ordinary least squares (OLS), robust regression and instrumental variable model. In dropping outlier model, Top 5% samples on each dependent variable. The details of instrumental variable model are shown as below.

\*1 IV1: 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 IV2: 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

\*3 IV3: 1st excluded IV is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies , and 2nd is Independence of Supervisory Authority - Political respectively

## Panel B: Supporting Institutional Framework

Dependent Variable: Number of borrowers as % of population

	OLS	Robust Reg	OLS dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>	Instrumental Variable 3* <sup>3</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Supporting Institutional Framework (Nominal)	0.0586 [0.106]	0.1096*** [0.000]	0.0717** [0.031]	0.0782* [0.080]	0.2130** [0.049]	0.0858 [0.242]	0.2051** [0.048]
Inflation, GDP deflator (annual %)	-0.1409 [0.220]	-0.1622* [0.072]	-0.1174 [0.254]	-0.108 [0.491]	-0.1102 [0.494]	-0.1588 [0.122]	-0.1199 [0.464]
GDP growth (annual %)	0.071 [0.733]	0.0645 [0.690]	0.051 [0.784]	-0.0673 [0.817]	0.1558 [0.648]	0.0096 [0.966]	0.0486 [0.889]
Rule of law	-2.0331* [0.054]	-1.8579** [0.025]	-1.8531* [0.051]	-1.7743 [0.139]	-1.4295 [0.248]	-1.8137* [0.062]	-1.5643 [0.208]
Bank overhead costs / Total assets	-13.373 [0.346]	-2.3468 [0.830]	-10.3053 [0.417]	-10.2426 [0.538]	-10.4817 [0.539]	-14.3801 [0.375]	-17.1873 [0.397]
Ease of doing business index (1=most business-friendly regulations)	-0.014 [0.317]	-0.0097 [0.372]	-0.0145 [0.248]	-0.0121 [0.471]	0.0037 [0.858]	-0.0081 [0.594]	0.0056 [0.790]
Constatnt	2.3956 [0.401]	-0.969 [0.660]	1.5935 [0.533]	1.586 [0.661]	-6.5612 [0.350]	1.0207 [0.827]	-5.4174 [0.416]
Observations (countries)	47	47	46	34	34	36	31
R-squared	0.189	0.425	0.241	0.244	-0.031	0.276	0.017
Adjusted R-squared	0.067	0.339	0.124	0.076	-0.260	0.126	-0.228
F statistics for excluded instruments on 1st stage					2.685	4.377	2.688
Shea's adj. partial R-sq					0.171	0.238	0.189
P-values of Hansen J statistics					0.027	0.616	0.042

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. All models are estimated via three regression models: ordinary least squares (OLS), robust regression and instrumental variable model. In dropping outlier model, Top 5% samples on each dependent variable. The details of instrumental variable model are shown as below.

\*1 IV1: 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 IV2: 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

\*3 IV3: 1st excluded IV is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies, and 2nd is Independence of Supervisory Authority - Political respectively

**Panel C: Client Protection: Transparency in Pricing**

Dependent Variable: Number of borrowers as % of population

	OLS	Robust Reg	OLS dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>	Instrumental Variable 3* <sup>3</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Client Protection: Transparency in pricing	1.9637*** [0.000]	2.0731*** [0.000]	1.6876*** [0.001]	1.8877*** [0.003]	3.9929*** [0.002]	1.8588 [0.200]	2.8433*** [0.002]
Inflation, GDP deflator (annual %)	-0.1038 [0.303]	-0.1601* [0.083]	-0.1017 [0.287]	-0.0758 [0.588]	-0.0412 [0.787]	-0.1394 [0.141]	-0.0704 [0.599]
GDP growth (annual %)	0.1663 [0.370]	0.1632 [0.331]	0.1252 [0.477]	-0.0059 [0.982]	0.207 [0.493]	0.078 [0.735]	0.0886 [0.752]
Rule of law	-1.6228* [0.081]	-1.7283** [0.042]	-1.5783* [0.074]	-1.4764 [0.169]	-0.9208 [0.437]	-1.5626* [0.096]	-1.2612 [0.220]
Bank overhead costs / Total assets	-12.8061 [0.298]	-4.6985 [0.671]	-9.6165 [0.411]	-9.982 [0.501]	-9.8464 [0.539]	-7.359 [0.626]	-5.684 [0.736]
Ease of doing business index (1=most business-friendly regulations)	-0.0204* [0.092]	-0.0182* [0.097]	-0.0213* [0.065]	-0.019 [0.189]	-0.0164 [0.290]	-0.0176 [0.136]	-0.0171 [0.221]
Constant	1.3644 [0.528]	0.5105 [0.794]	1.8526 [0.369]	1.7512 [0.503]	-3.3416 [0.396]	1.6103 [0.675]	-0.611 [0.850]
Observations (countries)	47	47	46	34	34	36	31
R-squared	0.375	0.463	0.345	0.398	0.091	0.421	0.345
Adjusted R-squared	0.282	0.383	0.244	0.265	-0.111	0.302	0.181
F statistics for excluded instruments on 1st stage					3.904	1.818	6.578
Shea's adj. partial R-sq					0.231	0.115	0.364
P-values of Hansen J statistics					0.534	0.535	0.112

**Table 2. Average loan size, per capita GNI (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel A: Overall Score Nominal**

Dep var: Average loan size / per capita GNI							
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OVERALL SCORES (0-100)	-0.0001 [0.920]	0.0011 [0.598]	0.0009 [0.151]	0.0022 [0.291]	0.0122** [0.023]	0.0384*** [0.002]	0.0375** [0.019]
Inflation, GDP deflator (annual %)	0.0024 [0.227]	0.009 [0.228]	0.0011 [0.620]	0.0028 [0.684]	0.0376** [0.023]	0.0566** [0.028]	0.0446 [0.114]
GDP growth (annual %)	0.0058* [0.081]	0.0155 [0.142]	0.0077** [0.043]	0.0087 [0.481]	0.0414* [0.090]	0.0488 [0.167]	0.039 [0.390]
Rule of law	-0.1335*** [0.000]	-0.2173*** [0.001]	-0.1470*** [0.000]	-0.2259*** [0.001]	-0.0528 [0.773]	0.0636 [0.771]	0.0842 [0.725]
BANK OVERHEAD COSTS / TOTAL ASSETS	-1.1797*** [0.000]	-1.0808* [0.073]	-0.4700* [0.061]	-0.5368 [0.430]	0.5864 [0.710]	4.5297** [0.017]	5.2612* [0.054]
Ease of doing business index (1=most business-friendly regulations)	0.0003 [0.133]	0.0022*** [0.009]	0.0004* [0.087]	0.0023** [0.013]	0.0063*** [0.004]	0.0089*** [0.000]	0.0084*** [0.000]
Bank Credit / GDP	0.1725*** [0.000]	0.2299* [0.079]	0.2279*** [0.000]	0.3046** [0.012]	0.3646 [0.333]	0.6382* [0.093]	0.4696 [0.304]
Europe and Central Asia dummy	0.3190*** [0.000]	0.6106*** [0.000]	0.2823*** [0.000]	0.5173*** [0.000]	1.7165*** [0.000]	1.5769*** [0.000]	1.4400*** [0.000]
Latin America and Caribbean dummy	0.1347*** [0.000]	0.2031** [0.015]	0.0633* [0.077]	0.077 [0.335]	0.207 [0.399]	-0.3785 [0.308]	-0.4516 [0.230]
Sub-Saharan Africa dummy	0.2729*** [0.000]	0.3237*** [0.001]	0.3121*** [0.000]	0.2886*** [0.004]	0.4081 [0.145]	0.0381 [0.903]	-0.066 [0.823]
South Asia dummy	-0.0194 [0.508]	-0.0935** [0.037]	-0.0127 [0.678]	-0.0459 [0.336]	-0.1931 [0.330]	-0.4365 [0.158]	-0.4193 [0.160]
East Asia and Pacific dummy	-0.0238 [0.465]	0.0028 [0.968]	-0.0467 [0.169]	-0.0436 [0.538]	-0.2306 [0.318]	-0.7126** [0.017]	-0.7571** [0.020]

Panel A: Overall Score Nominal (cont.)

Dep var: Average loan size / per capita GNI

	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bank dummy	-0.1762*** [0.000]	-0.1535 [0.118]	-0.0965*** [0.004]	-0.0319 [0.763]	0.1864 [0.535]	0.1475 [0.610]	0.1186 [0.705]
Credit Union & coop dummy	-0.1344*** [0.000]	-0.1317* [0.084]	-0.1032*** [0.001]	-0.0418 [0.568]	0.004 [0.980]	0.0407 [0.804]	0.0673 [0.695]
NGO dummy	-0.2479*** [0.000]	-0.3371*** [0.000]	-0.1949*** [0.000]	-0.2077** [0.011]	-0.2878*** [0.001]	-0.2881*** [0.000]	-0.3027*** [0.000]
NBFI dummy	-0.1982*** [0.000]	-0.2034** [0.028]	-0.1417*** [0.000]	-0.0883 [0.425]	-0.3402*** [0.003]	-0.3791*** [0.002]	-0.3890*** [0.002]
Preferring individual lending dummy			0.1007*** [0.000]	0.1609*** [0.003]	0.2877*** [0.002]	0.3747*** [0.000]	0.3637*** [0.003]
Preferring solidarity lending dummy			0.0192 [0.355]	-0.0289 [0.447]	-0.0228 [0.797]	-0.046 [0.727]	-0.0519 [0.684]
Log of total assets (PPP\$)	0.0269*** [0.000]	0.0436*** [0.000]	0.0243*** [0.000]	0.0332*** [0.000]	0.0829** [0.014]	0.0727** [0.011]	0.0733** [0.010]
Constant	-0.2417*** [0.004]	-0.8441*** [0.011]	-0.3873*** [0.000]	-0.8500** [0.031]	-2.9340*** [0.007]	-4.3329*** [0.000]	-4.0163*** [0.004]
Observations	770	737	641	616	558	558	536
Number of countries	41	41	39	39	29	29	28
R-squared	0.500	0.378	0.547	0.414	0.304	0.248	0.240
Adjusted R-squared	0.489	0.364	0.534	0.396	0.279	0.222	0.212
F statistic for weak identification						3.893	4.340
Shea partial R-squared						0.182	0.229
Hansen J statistics						0.518	0.448



P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

### Panel B: Regulatory Framework and Practices

Dep var: Average loan size / per capita GNI

	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory Framework and Practices (0-100)	0.0005 [0.280]	0.0022 [0.204]	0.0013** [0.013]	0.0034** [0.044]	0.0122*** [0.002]	0.0315** [0.018]	0.0301*** [0.006]
Observations	770	737	641	616	558	558	536
Number of countries	41	41	39	39	29	29	28
R-squared	0.503	0.381	0.555	0.421	0.312	0.263	0.259
Adjusted R-squared	0.491	0.367	0.542	0.403	0.287	0.237	0.232
F statistic for weak identification						3.078	5.410
Shea partial R-squared						0.193	0.227
Hansen J statistics						0.954	0.696

### Panel C: Regulatory and supervisory capacity for microfinance (0-4)

Dep var: Average loan size / per capita GNI

<i>Microscope variable</i>	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory and supervisory capacity for microfinance (0-4)	-0.0046 [0.461]	-0.0059 [0.760]	0.0056 [0.419]	0.0116 [0.556]	0.0980** [0.039]	0.5878** [0.046]	0.6259* [0.099]
Observations	770	737	641	616	558	558	536
Number of countries	41	41	39	39	29	29	28
R-squared	0.502	0.378	0.544	0.412	0.299	0.123	0.073
Adjusted R-squared	0.490	0.363	0.530	0.393	0.274	0.092	0.039
F statistic for weak identification						2.304	1.681
Shea partial R-squared						0.095	0.103
Hansen J statistics						0.742	0.966

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively \*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel D: Regulatory framework for deposit-taking (0-4)**

Dep var: Average loan size / per capita GNI							
<i>Microscope variable</i>	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory framework for deposit-taking (0-4)	0.0274*** [0.006]	0.059 [0.113]	0.0286*** [0.007]	0.0555 [0.114]	0.2180*** [0.003]	0.6658** [0.044]	0.5482** [0.014]
Observations	770	737	641	616	558	558	536
Number of countries	41	41	39	39	29	29	28
R-squared	0.508	0.384	0.557	0.418	0.307	0.242	0.264
Adjusted R-squared	0.497	0.370	0.544	0.399	0.283	0.215	0.237
F statistic for weak identification						2.028	5.607
Shea partial R-squared						0.166	0.275
Hansen J statistics						0.681	0.455

**Panel E: Formation/operation of non-regulated microcredit institutions (0-4)**

Dep var: Average loan size / per capita GNI							
<i>Microscope variable</i>	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Formation/operation of non-regulated microcredit institutions (0-4)	0.0143* [0.058]	0.0436 [0.164]	0.0161** [0.048]	0.0331 [0.232]	0.1404** [0.039]	0.8365* [0.054]	0.8470* [0.052]
Observations	770	737	641	616	558	558	536
Number of countries	41	41	39	39	29	29	28
R-squared	0.509	0.383	0.555	0.415	0.301	0.086	0.095
Adjusted R-squared	0.498	0.368	0.541	0.396	0.276	0.054	0.062
F statistic for weak identification						1.902	1.548
Shea partial R-squared						0.070	0.076
Hansen J statistics						0.453	0.521

**Table 3. Average loan size, per capita w/ Interaction term (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel A: Overall Score Nominal (0-100)**

	Dep var: Average loan size / per capita GNI					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Overall Score Nominal	0.0049 [0.178]	-0.0003 [0.697]	0.0014 [0.472]	0.0052 [0.166]	-0.0004 [0.588]	0.0012 [0.561]
NBFI dummy * Overall Score Nominal (0-100)	0.0067 [0.273]	0.0032*** [0.002]	0.0021 [0.454]	0.0079 [0.210]	0.0032*** [0.001]	0.0023 [0.430]
Combined group dummy * Overall Score Nominal (0-100)	0.0063 [0.497]	0.0024** [0.032]	0.0013 [0.666]	0.0119 [0.357]	0.0039*** [0.001]	0.0006 [0.869]
NBFI dummy	-0.3001 [0.348]	-0.0963* [0.064]	0.0138 [0.930]	-0.3419 [0.295]	-0.0973** [0.046]	-0.0002 [0.999]
Combined group dummy	-0.0303 [0.945] [0.002]	0.0206 [0.710] [0.000]	0.1097 [0.526] [0.012]	-0.2077 [0.731] [0.002]	-0.0914 [0.130] [0.000]	0.1562 [0.425] [0.015]
Observations	641	641	616	583	583	560
Number of countries	39	39	39	39	39	39
R-squared	0.272	0.573	0.409	0.283	0.615	0.431
Adjusted R-squared	0.25	0.56	0.39	0.258	0.602	0.41
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.0115* [0.067]	0.00296*** [0.002]	0.00353 [0.315]	0.0131** [0.048]	0.00279*** [0.002]	0.00354 [0.330]
Combined group dummy	0.0112 [0.197]	0.00211** [0.041]	0.00273 [0.413]	0.0172 [0.157]	0.00351*** [0.002]	0.00182 [0.649]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel B: Regulatory Framework and Practices (0-100)

	Dep var: Average loan size / per capita GNI					
	Version 1 (Ful samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory Framework and Practices (0-100)	0.0062* [0.058]	0 [0.988]	0.0013 [0.411]	0.0055* [0.069]	0 [0.967]	0.001 [0.552]
NBFI dummy * Regulatory Framework and Practices (0-100)	0.0042 [0.409]	0.0031*** [0.001]	0.0051* [0.091]	0.0058 [0.207]	0.0030*** [0.001]	0.0054* [0.079]
Combined group dummy * Regulatory Framework and Practices (0-100)	0.0098 [0.282]	0.0019** [0.044]	0.0023 [0.295]	0.0255* [0.052]	0.0025** [0.034]	0.004 [0.288]
NBFI dummy	-0.2152 [0.455]	-0.1122** [0.040]	-0.169 [0.306]	-0.2821 [0.307]	-0.1089** [0.033]	-0.1893 [0.257]
Combined group dummy	-0.2709 [0.550]	0.0273 [0.626]	0.0521 [0.730]	-1.0054 [0.109]	-0.0384 [0.554]	-0.0213 [0.922]
Observations	641	641	616	583	583	560
Number of countries	39	39	39	39	39	39
R-squared	0.282	0.575	0.421	0.304	0.615	0.443
Adjusted R-squared	0.26	0.562	0.402	0.28	0.602	0.423
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.0103** [0.029]	0.00312*** [0.000]	0.0064** [0.049]	0.0113** [0.013]	0.00302*** [0.000]	0.00642** [0.042]
Combined group dummy	0.0159* [0.054]	0.00194** [0.024]	0.00357 [0.145]	0.031** [0.015]	0.00251** [0.021]	0.00498 [0.213]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel C: Regulatory and supervisory capacity for microfinance (0-4)

	Dep var: Average loan size / per capita GNI					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory and supervisory capacity for microfinance (0-4)	0.0206 [0.611]	-0.0089 [0.297]	0.01 [0.604]	0.0212 [0.615]	-0.0092 [0.245]	0.014 [0.500]
NBFI dummy * Regulatory and supervisory capacity for microfinance (0-4)	0.0341 [0.584]	0.0345*** [0.006]	-0.0004 [0.990]	0.0472 [0.468]	0.0321*** [0.005]	0.0021 [0.945]
Combined group dummy * Regulatory and supervisory capacity for microfinance (0-4)	0.06 [0.524]	0.0092 [0.497]	-0.003 [0.917]	0.1166 [0.437]	0.021 [0.162]	0.0092 [0.806]
NBFI dummy	-0.0502 [0.771]	-0.015 [0.614]	0.115 [0.244]	-0.0604 [0.725]	-0.0152 [0.580]	0.1065 [0.274]
Combined group dummy	0.1439 [0.489]	0.1162*** [0.000]	0.1747** [0.041]	0.1098 [0.729]	0.0485 [0.164]	0.1596 [0.122]
Observations	641	641	616	583	583	560
Number of countries	39	39	39	39	39	39
R-squared	0.266	0.565	0.406	0.275	0.605	0.429
Adjusted R-squared	0.244	0.552	0.387	0.25	0.591	0.408
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.0547 [0.307]	0.0255** [0.016]	0.00964 [0.761]	0.0685 [0.222]	0.0229** [0.019]	0.0161 [0.609]
Combined group dummy	0.0806 [0.337]	0.000227 [0.985]	0.00699 [0.829]	0.138 [0.309]	0.0118 [0.395]	0.0232 [0.593]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel D: Regulatory framework for deposit-taking (0-4)

	Dep var: Average loan size / per capita GNI					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory framework for deposit-taking (0-4)	0.1368** [0.026]	0.0077 [0.530]	0.0106 [0.744]	0.1245** [0.042]	0.0101 [0.373]	0.0038 [0.910]
NBFI dummy * Regulatory framework for deposit-taking (0-4)	0.1308 [0.105]	0.0656*** [0.000]	0.1399*** [0.007]	0.1403* [0.072]	0.0629*** [0.000]	0.1417*** [0.007]
Combined group dummy *Regulatory framework for deposit-taking (0-4)	-0.0697 [0.636]	0.0327* [0.079]	0.0077 [0.858]	0.0284 [0.903]	0.0258 [0.242]	0.0184 [0.765]
NBFI dummy	-0.1909 [0.331]	-0.0464 [0.137]	-0.1203 [0.163]	-0.1997 [0.294]	-0.0461 [0.110]	-0.1286 [0.136]
Combined group dummy	0.4256 [0.228]	0.0720* [0.069]	0.1717 [0.108]	0.3119 [0.526]	0.0469 [0.274]	0.1556 [0.239]
Observations	641	641	616	583	583	560
Number of countries	39	39	39	39	39	39
R-squared	0.278	0.582	0.43	0.285	0.624	0.45
Adjusted R-squared	0.256	0.569	0.412	0.26	0.611	0.431
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.268*** [0.007]	0.0733*** [0.000]	0.151** [0.010]	0.265*** [0.006]	0.073*** [0.000]	0.145** [0.010]
Combined group dummy	0.0671 [0.625]	0.0404** [0.025]	0.0183 [0.721]	0.153 [0.496]	0.0359* [0.092]	0.0222 [0.754]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel E: Formation/operation of non-regulated microcredit institutions (0-4)

	Dep var: Average loan size / per capita GNI					
	Version 1 (Ful samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Formation/operation of non-regulated microcredit institutions (0-4)	-0.055 [0.470]	-0.0026 [0.842]	0.015 [0.586]	-0.0514 [0.508]	-0.0056 [0.652]	0.0097 [0.728]
NBFI dummy * Formation/operation of non-regulated microcredit institutions (0-4)	0.0369 [0.712]	0.0282 [0.102]	0.0311 [0.449]	0.0451 [0.649]	0.0291* [0.072]	0.0387 [0.349]
Combined group dummy * Formation/operation of non-regulated microcredit institutions (0-4)	0.5282** [0.037]	0.0517*** [0.007]	0.0257 [0.739]	0.5632** [0.025]	0.0849*** [0.000]	0.0153 [0.839]
NBFI dummy	-0.0555 [0.803]	-0.0042 [0.915]	0.0503 [0.634]	-0.0628 [0.777]	-0.0116 [0.756]	0.0301 [0.776]
Combined group dummy	-0.8064 [0.113]	0.0318 [0.459]	0.1219 [0.482]	-0.8381* [0.094]	-0.0772* [0.073]	0.1498 [0.372]
Observations	641	641	616	583	583	560
Number of countries	39	39	39	39	39	39
R-squared	0.309	0.584	0.41	0.321	0.635	0.431
Adjusted R-squared	0.288	0.571	0.391	0.298	0.623	0.411
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.0181 [0.849]	0.0256** [0.034]	0.0461 [0.217]	-0.0063 [0.947]	0.0235** [0.038]	0.0484 [0.191]
Combined group dummy	0.473** [0.030]	0.049*** [0.000]	0.0407 [0.575]	0.512** [0.018]	0.0793*** [0.000]	0.025 [0.726]

**Table 4. % of Women borrowers (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel A: Overall Score Nominal**

Dep var: % of Women borrowers							
	Robust Reg w/o Lending methodology dummy	OLS w/o Lending methodology dummy	Robust Reg	OLS	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OVERALL SCORES (0-100)	-0.0022** [0.011]	-0.0053* [0.052]	-0.0043*** [0.000]	-0.0075*** [0.002]	-0.0057*** [0.007]	-0.001 [0.761]	-0.0024 [0.445]
Observations	713	713	611	611	530	530	510
Number of countries	40	40	39	39	29	29	28
R-squared	0.464	0.388	0.548	0.491	0.473	0.455	0.489
Adjusted R-squared	0.451	0.373	0.533	0.474	0.453	0.434	0.470
F statistic for weak identification						4.287	4.254
Shea partial R-squared						0.203	0.238
Hansen J statistics						0.183	0.135

**Panel B: Regulatory Framework and Practices**

Dep var: % of Women borrowers							
	Robust Reg w/o Lending methodology dummy	OLS w/o Lending methodology dummy	Robust Reg	OLS	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory Framework and Practices (0-100)	-0.0007 [0.336]	-0.0036 [0.121]	-0.0015** [0.031]	-0.0049** [0.027]	-0.0032* [0.056]	0.002 [0.659]	-0.001 [0.707]
Observations	713	713	611	611	530	530	510
Number of countries	40	40	39	39	29	29	28
R-squared	0.476	0.379	0.566	0.469	0.460	0.423	0.478
Adjusted R-squared	0.463	0.364	0.552	0.451	0.440	0.402	0.458
F statistic for weak identification						3.596	5.485
Shea partial R-squared						0.208	0.244
Hansen J statistics						0.195	0.140



P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel C: Regulatory and supervisory capacity for microfinance (0-4)**

<i>Microscope variable</i>	Dep var: % of Women borrowers						
	Robust Reg w/o Lending methodology dummy	OLS w/o Lending methodology dummy	Robust Reg	OLS	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory and supervisory capacity for microfinance (0-4)	-0.0398*** [0.000]	-0.0639** [0.022]	-0.0631*** [0.000]	-0.0857*** [0.000]	-0.0729*** [0.001]	0.0027 [0.964]	-0.0099 [0.868]
Observations	713	713	611	611	530	530	510
Number of countries	40	40	39	39	29	29	28
R-squared	0.449	0.396	0.533	0.499	0.486	0.443	0.478
Adjusted R-squared	0.435	0.381	0.518	0.483	0.466	0.422	0.457
F statistic for weak identification						2.598	1.722
Shea partial R-squared						0.105	0.108
Hansen J statistics						0.188	0.131

**Panel D: Regulatory framework for deposit-taking (0-4)**

<i>Microscope variable</i>	Dep var: % of Women borrowers						
	Robust Reg w/o Lending methodology dummy	OLS w/o Lending methodology dummy	Robust Reg	OLS	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory framework for deposit-taking (0-4)	-0.0567*** [0.000]	-0.0958** [0.030]	-0.0244* [0.086]	-0.0864* [0.061]	-0.0566 [0.138]	0.0036 [0.959]	-0.036 [0.450]
Observations	713	713	611	611	530	530	510
Number of countries	40	40	39	39	29	29	28
R-squared	0.459	0.393	0.568	0.461	0.457	0.445	0.481
Adjusted R-squared	0.446	0.378	0.554	0.444	0.436	0.424	0.460
F statistic for weak identification						2.336	5.651
Shea partial R-squared						0.184	0.289
Hansen J statistics						0.188	0.154

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel E: Formation/operation of non-regulated microcredit institutions (0-4)**

<i>Microscope variable</i>	Dep var: % of Women borrowers						
	Robust Reg w/o Lending methodology dummy	OLS w/o Lending methodology dummy	Robust Reg	OLS	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Formation/operation of non-regulated microcredit institutions (0-4)	0.0406*** [0.000]	0.0337 [0.142]	0.0333*** [0.002]	0.027 [0.222]	0.0787*** [0.004]	0.1357 [0.411]	-0.0585 [0.510]
Observations	713	713	611	611	530	530	510
Number of countries	40	40	39	39	29	29	28
R-squared	0.507	0.366	0.588	0.438	0.473	0.459	0.429
Adjusted R-squared	0.495	0.351	0.575	0.420	0.454	0.439	0.407
F statistic for weak identification						1.881	1.626
Shea partial R-squared						0.069	0.081
Hansen J statistics						0.290	0.212

**Table 5. % of Women borrowers w/ Interaction term (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel A: Overall Score Nominal (0-100)**

	Dep var: % of Women borrowers			
	Version 1 (Full samples)		Version 2 (Dropping Rural bank samples)	
	OLS	Robust Reg	OLS	Robust Reg
	(1)	(2)	(3)	(4)
Overall Score Nominal	-0.0066***	-0.0043***	-0.0066***	-0.0024**
	[0.002]	[0.000]	[0.001]	[0.012]
NBFI dummy * Overall Score Nominal (0-100)	-0.0022	-0.0034**	-0.0013	-0.0021
	[0.340]	[0.029]	[0.543]	[0.120]
Combined group dummy * Overall Score Nominal (0-100)	-0.002	-0.0021	0.0006	0.0001
	[0.518]	[0.204]	[0.761]	[0.967]
NBFI dummy	0.0145	0.09	-0.0109	0.0516
	[0.894]	[0.240]	[0.919]	[0.440]
Combined group dummy	-0.1018	-0.0947	-0.1508	-0.1092
	[0.422]	[0.253]	[0.110]	[0.194]
Observations	611	611	557	557
Number of countries	39	39	39	39
R-squared	0.472	0.507	0.483	0.57
Adjusted R-squared	0.455	0.491	0.464	0.555
<i>Microscope index+ interaction term (P-value in brackets)</i>				
NBFI dummy	-0.00881***	-0.00774***	-0.0079**	-0.00449***
	[0.006]	[0.000]	[0.015]	[0.000]
Combined group dummy	-0.00861***	-0.00647***	-0.00594**	-0.00231
	[0.007]	[0.000]	[0.035]	[0.154]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel B: Regulatory Framework and Practices (0-100)**

	Dep var: % of Women borrowers			
	Version 1 (Full samples)		Version 2 (Dropping Rural bank samples)	
	OLS	Robust Reg	OLS	Robust Reg
	(1)	(2)	(3)	(4)
Regulatory Framework and Practices (0-100)	-0.0040**	-0.0009	-0.0045***	-0.0006
	[0.041]	[0.324]	[0.007]	[0.446]
NBFI dummy * Regulatory Framework and Practices (0-100)	-0.0007	-0.0016	-0.0001	-0.001
	[0.737]	[0.247]	[0.975]	[0.420]
Combined group dummy * Regulatory Framework and Practices (0-100)	-0.0028	-0.0033**	0.0007	0.0004
	[0.360]	[0.020]	[0.717]	[0.802]
NBFI dummy	-0.0469	0.0215	-0.068	0.0085
	[0.698]	[0.784]	[0.565]	[0.903]
Combined group dummy	-0.0395	-0.0127	-0.1563	-0.1226
	[0.797]	[0.877]	[0.129]	[0.178]
Observations	611	611	557	557
Number of countries	39	39	39	39
R-squared	0.449	0.523	0.46	0.577
Adjusted R-squared	0.431	0.507	0.441	0.562
<i>Microscope index+ interaction term (P-value in brackets)</i>				
NBFI dummy	-0.00477	-0.00255**	-0.00461	-0.00164
	[0.107]	[0.033]	[0.125]	[0.122]
Combined group dummy	-0.00681**	-0.00426***	-0.00382	-0.000234
	[0.032]	[0.001]	[0.156]	[0.879]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel C: Regulatory and supervisory capacity for microfinance (0-4)**

	Dep var: % of Women borrowers			
	Version 1 (Full samples)		Version 2 (Dropping Rural bank samples)	
	OLS	Robust Reg	OLS	Robust Reg
	(1)	(2)	(3)	(4)
Regulatory and supervisory capacity for microfinance (0-4)	-0.0678*** [0.000]	-0.0560*** [0.000]	-0.0712*** [0.000]	-0.0303*** [0.006]
NBFI dummy * Regulatory and supervisory capacity for microfinance (0-4)	-0.0362 [0.209]	-0.0481*** [0.010]	-0.025 [0.382]	-0.0207 [0.202]
Combined group dummy * Regulatory and supervisory capacity for microfinance (0-4)	-0.0305 [0.435]	-0.0392* [0.058]	-0.0125 [0.657]	-0.0146 [0.507]
NBFI dummy	-0.0146 [0.827]	0.0233 [0.598]	-0.0222 [0.744]	-0.0065 [0.866]
Combined group dummy	-0.1389* [0.065]	-0.1231** [0.010]	-0.0960* [0.097]	-0.0752 [0.132]
Observations	611	611	557	557
Number of countries	39	39	39	39
R-squared	0.479	0.5	0.494	0.561
Adjusted R-squared	0.462	0.484	0.476	0.545
<i>Microscope index+ interaction term (P-value in brackets)</i>				
NBFI dummy	-0.104*** [0.002]	-0.104*** [0.000]	-0.0962*** [0.005]	-0.0509*** [0.000]
Combined group dummy	-0.0983*** [0.010]	-0.0952*** [0.000]	-0.0837*** [0.010]	-0.0449** [0.029]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel D: Regulatory framework for deposit-taking (0-4)**

	Dep var: % of Women borrowers			
	Version 1 (Full samples)		Version 2 (Dropping Rural bank samples)	
	OLS	Robust Reg	OLS	Robust Reg
	(1)	(2)	(3)	(4)
Regulatory framework for deposit-taking (0-4)	-0.0644*	-0.0131	-0.0734**	-0.0062
	[0.084]	[0.446]	[0.037]	[0.690]
NBFI dummy * Regulatory framework for deposit-taking (0-4)	-0.0234	-0.0328	-0.0156	-0.0268
	[0.566]	[0.156]	[0.693]	[0.197]
Combined group dummy * Regulatory framework for deposit-taking (0-4)	-0.1050**	-0.1272***	-0.0011	-0.0102
	[0.021]	[0.000]	[0.976]	[0.756]
NBFI dummy	-0.0491	-0.009	-0.0516	-0.0019
	[0.510]	[0.839]	[0.487]	[0.962]
Combined group dummy	0.0075	0.0417	-0.1160*	-0.082
	[0.921]	[0.475]	[0.084]	[0.194]
Observations	611	611	557	557
Number of countries	39	39	39	39
R-squared	0.449	0.542	0.454	0.583
Adjusted R-squared	0.432	0.527	0.435	0.569
<i>Microscope index+ interaction term (P-value in brackets)</i>				
NBFI dummy	-0.0878	-0.0459**	-0.089	-0.0329**
	[0.140]	[0.029]	[0.136]	[0.081]
Combined group dummy	-0.169***	-0.14***	-0.0745	-0.0163
	[0.008]	[0.000]	[0.213]	[0.609]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel E: Formation/operation of non-regulated microcredit institutions (0-4)

	Dep var: % of Women borrowers			
	Version 1 (Full samples)		Version 2 (Dropping Rural bank samples)	
	OLS	Robust Reg	OLS	Robust Reg
	(1)	(2)	(3)	(4)
Formation/operation of non-regulated microcredit institutions (0-4)	0.0273	0.0406**	0.0372	0.0551***
	[0.438]	[0.033]	[0.278]	[0.001]
NBFI dummy * Formation/operation of non-regulated microcredit institutions (0-4)	0.0148	-0.0106	0.0159	-0.0151
	[0.654]	[0.667]	[0.601]	[0.481]
Combined group dummy * Formation/operation of non-regulated microcredit institutions (0-4)	-0.0337	-0.0225	-0.0295	-0.0362
	[0.454]	[0.435]	[0.403]	[0.161]
NBFI dummy	-0.1192	-0.0377	-0.103	-0.0038
	[0.197]	[0.508]	[0.214]	[0.939]
Combined group dummy	-0.118	-0.1335**	-0.0382	-0.004
	[0.348]	[0.039]	[0.663]	[0.947]
Observations	611	611	557	557
Number of countries	39	39	39	39
R-squared	0.417	0.536	0.439	0.607
Adjusted R-squared	0.398	0.521	0.419	0.593
<i>Microscope index+ interaction term (P-value in brackets)</i>				
NBFI dummy	0.0422**	0.03*	0.0531**	0.04***
	[0.038]	[0.082]	[0.012]	[0.008]
Combined group dummy	-0.00638	0.0181	0.00774	0.0189
	[0.845]	[0.411]	[0.701]	[0.345]

**Table 6. Financial Self-Sufficiency (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel A: Overall Score Nominal**

	Dep var: Financial Self_Sufficiency						
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OVERALL SCORES (0-100)	-0.0014 [0.174]	-0.001 [0.600]	0.0003 [0.805]	-0.0002 [0.900]	0.0019 [0.320]	0.0105** [0.035]	0.0094** [0.032]
Observations	751	713	636	611	554	554	532
Number of countries	41	40	39	39	29	29	28
R-squared	0.209	0.253	0.229	0.264	0.256	0.198	0.21
Adjusted R-squared	0.191	0.235	0.205	0.240	0.229	0.170	0.181
F statistic for weak identification						3.954	4.324
Shea partial R-squared						0.184	0.229
Hansen J statistics						0.974	0.903

**Panel B: Regulatory Framework and Practices**

	Dep var: Financial Self_Sufficiency						
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory Framework and Practices (0-100)	-0.0016* [0.061]	-0.0009 [0.588]	-0.0002 [0.841]	-0.0002 [0.904]	0.0006 [0.706]	0.0072** [0.014]	0.0073** [0.023]
Observations	751	713	636	611	554	554	532
Number of countries	41	40	39	39	29	29	28
R-squared	0.211	0.253	0.229	0.264	0.253	0.197	0.191
Adjusted R-squared	0.193	0.235	0.205	0.240	0.227	0.168	0.161
F statistic for weak identification						3.125	5.391
Shea partial R-squared						0.194	0.228
Hansen J statistics						0.503	0.843



P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel C: Regulatory and supervisory capacity for microfinance (0-4)**

<i>Microscope variable</i>	Dep var: Financial Self_Sufficiency						
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory and supervisory capacity for microfinance (0-4)	-0.0295*** [0.006]	-0.0233 [0.141]	-0.0183* [0.097]	-0.0175 [0.292]	-0.0022 [0.899]	0.1509* [0.088]	0.1491 [0.112]
Observations	751	713	636	611	554	554	532
Number of countries	41	40	39	39	29	29	28
R-squared	0.218	0.258	0.234	0.267	0.253	0.085	0.108
Adjusted R-squared	0.200	0.239	0.210	0.243	0.226	0.053	0.075
F statistic for weak identification						2.333	1.661
Shea partial R-squared						0.095	0.102
Hansen J statistics						0.807	0.756

**Panel D: Regulatory framework for deposit-taking (0-4)**

<i>Microscope variable</i>	Dep var: Financial Self_Sufficiency						
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory framework for deposit-taking (0-4)	-0.0107 [0.530]	0.0014 [0.971]	0.0151 [0.382]	0.0148 [0.674]	0.0214 [0.530]	0.1705* [0.068]	0.1374*** [0.007]
Observations	751	713	636	611	554	554	532
Number of countries	41	40	39	39	29	29	28
R-squared	0.207	0.252	0.231	0.264	0.254	0.184	0.211
Adjusted R-squared	0.189	0.234	0.207	0.241	0.228	0.155	0.181
F statistic for weak identification						2.044	5.548
Shea partial R-squared						0.167	0.275
Hansen J statistics						0.776	0.901

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel E: Formation/operation of non-regulated microcredit institutions (0-4)**

<i>Microscope variable</i>	Dep var: Financial Self_Sufficiency						
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Formation/operation of non-regulated microcredit institutions (0-4)	-0.003 [0.817]	-0.0018 [0.937]	0.0023 [0.860]	0.0002 [0.993]	0.024 [0.364]	0.1580** [0.023]	0.2112* [0.098]
Observations	751	713	636	611	554	554	532
Number of countries	41	40	39	39	29	29	28
R-squared	0.207	0.252	0.229	0.263	0.255	0.176	0.046
Adjusted R-squared	0.189	0.234	0.205	0.240	0.229	0.147	0.010
F statistic for weak identification						1.893	1.556
Shea partial R-squared						0.070	0.076
Hansen J statistics						0.152	0.894

**Table 7. Financial Self-Sufficiency w/ Interaction term (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel A: Overall Score Nominal (0-100)**

	Dep var: Financial Self-Sufficiency					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Overall Score Nominal (0-100)	0.0021 [0.380]	0.0022* [0.078]	0.0014 [0.489]	0.002 [0.394]	0.0021 [0.102]	0.0013 [0.557]
NBFI dummy * Overall Score Nominal (0-100)	-0.002 [0.275]	-0.0024 [0.178]	-0.0021 [0.207]	-0.0023 [0.199]	-0.0029 [0.121]	-0.0024 [0.156]
Combined group dummy * Overall Score Nominal (0-100)	-0.0066** [0.011]	-0.0061*** [0.001]	-0.0059*** [0.005]	-0.0072*** [0.007]	-0.0068*** [0.004]	-0.0060*** [0.004]
NBFI dummy	0.0958 [0.334]	0.1338 [0.125]	0.1145 [0.224]	0.1039 [0.311]	0.1469 [0.108]	0.1122 [0.238]
Combined group dummy	0.2849** [0.032]	0.2808*** [0.003]	0.2665*** [0.009]	0.2775* [0.064]	0.2747** [0.019]	0.2325** [0.046]
Observations	636	636	611	579	579	556
Number of countries	39	39	39	39	39	39
R-squared	0.222	0.233	0.26	0.229	0.239	0.261
Adjusted R-squared	0.198	0.209	0.236	0.203	0.213	0.235
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.0000819 [0.972]	-0.000153 [0.924]	-0.000695 [0.742]	-0.000318 [0.893]	-0.000719 [0.672]	-0.00105 [0.632]
Combined group dummy	-0.00453** [0.047]	-0.00389** [0.028]	-0.00443** [0.034]	-0.0052* [0.066]	-0.00462** [0.039]	-0.00474* [0.093]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel B: Regulatory Framework and Practices (0-100)

	Dep var: Financial Self-Sufficiency					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory Framework and Practices (0-100)	0.0011 [0.631]	0.0016 [0.150]	0.0011 [0.592]	0.0014 [0.530]	0.0019 [0.104]	0.0012 [0.538]
NBFI dummy * Regulatory Framework and Practices (0-100)	-0.0013 [0.481]	-0.0018 [0.265]	-0.0013 [0.448]	-0.0017 [0.355]	-0.0023 [0.167]	-0.0016 [0.351]
Combined group dummy * Regulatory Framework and Practices (0-100)	-0.0044 [0.176]	-0.0045*** [0.005]	-0.004 [0.133]	-0.0060* [0.082]	-0.0064*** [0.004]	-0.0049* [0.059]
NBFI dummy	0.0749 [0.510]	0.1214 [0.181]	0.0884 [0.411]	0.0846 [0.459]	0.1382 [0.145]	0.0872 [0.409]
Combined group dummy	0.2115 [0.241]	0.2426*** [0.010]	0.2075 [0.145]	0.2533 [0.200]	0.2953** [0.016]	0.2098 [0.150]
Observations	636	636	611	579	579	556
Number of countries	39	39	39	39	39	39
R-squared	0.217	0.231	0.255	0.226	0.242	0.258
Adjusted R-squared	0.193	0.208	0.231	0.2	0.216	0.232
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.000228 [0.900]	-0.000189 [0.891]	-0.000262 [0.881]	-0.000311 [0.865]	-0.000437 [0.763]	-0.000342 [0.850]
Combined group dummy	-0.00327 [0.128]	-0.00295** [0.041]	-0.00288 [0.153]	-0.00459* [0.092]	-0.00452** [0.027]	-0.00368 [0.172]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel C: Regulatory and supervisory capacity for microfinance (0-4)

	Dep var: Financial Self-Sufficiency					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory and supervisory capacity for microfinance (0-4)	0.0103 [0.684]	0.0024 [0.867]	0.0005 [0.982]	0.0114 [0.657]	0.006 [0.687]	-0.0007 [0.978]
NBFI dummy * Regulatory and supervisory capacity for microfinance (0-4)	-0.0296 [0.153]	-0.0218 [0.290]	-0.0226 [0.259]	-0.0348* [0.093]	-0.0305 [0.159]	-0.0244 [0.225]
Combined group dummy * Regulatory and supervisory capacity for microfinance (0-4)	-0.0705** [0.022]	-0.0574** [0.011]	-0.0539** [0.032]	-0.0781*** [0.010]	-0.0666** [0.019]	-0.0514* [0.050]
NBFI dummy	0.0624 [0.288]	0.0649 [0.189]	0.0602 [0.282]	0.0647 [0.293]	0.0722 [0.163]	0.0514 [0.377]
Combined group dummy	0.111 [0.109]	0.1035** [0.049]	0.0950* [0.078]	0.0894 [0.271]	0.0827 [0.210]	0.0476 [0.483]
Observations	636	636	611	579	579	556
Number of countries	39	39	39	39	39	39
R-squared	0.222	0.229	0.258	0.228	0.237	0.259
Adjusted R-squared	0.198	0.206	0.235	0.202	0.211	0.232
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.0194 [0.359]	-0.0194 [0.266]	-0.0221 [0.261]	-0.0234 [0.284]	-0.0245 [0.182]	-0.0251 [0.221]
Combined group dummy	-0.0602** [0.014]	-0.055*** [0.005]	-0.0534** [0.014]	-0.0667** [0.050]	-0.0605** [0.022]	-0.0521 [0.118]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel D: Regulatory framework for deposit-taking (0-4)**

	Dep var: Financial Self-Sufficiency					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory framework for deposit-taking (0-4)	0.0156 [0.736]	0.0397* [0.052]	0.0277 [0.517]	0.0234 [0.599]	0.0470** [0.028]	0.0334 [0.418]
NBFI dummy * Regulatory framework for deposit-taking (0-4)	-0.0216 [0.579]	-0.0530* [0.052]	-0.028 [0.448]	-0.0258 [0.518]	-0.0569** [0.045]	-0.0307 [0.406]
Combined group dummy * Regulatory framework for deposit-taking (0-4)	-0.0493 [0.459]	-0.0581* [0.062]	-0.0437 [0.405]	-0.0876 [0.291]	-0.0980** [0.019]	-0.0677 [0.285]
NBFI dummy	0.0437 [0.652]	0.1202** [0.021]	0.0667 [0.458]	0.0425 [0.668]	0.1171** [0.031]	0.0582 [0.513]
Combined group dummy	0.0654 [0.670]	0.1008 [0.128]	0.0729 [0.551]	0.0911 [0.614]	0.1305 [0.108]	0.0694 [0.616]
Observations	636	636	611	579	579	556
Number of countries	39	39	39	39	39	39
R-squared	0.212	0.227	0.251	0.223	0.239	0.256
Adjusted R-squared	0.188	0.204	0.227	0.197	0.213	0.23
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.00599 [0.854]	-0.0133 [0.591]	-0.0003 [0.993]	-0.00239 [0.941]	-0.00995 [0.701]	0.00267 [0.937]
Combined group dummy	-0.0336 [0.458]	-0.0185 [0.540]	-0.0161 [0.732]	-0.0643 [0.308]	-0.051 [0.206]	-0.0344 [0.586]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel E: Formation/operation of non-regulated microcredit institutions (0-4)**

	Dep var: Financial Self-Sufficiency					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Formation/operation of non-regulated microcredit institutions (0-4)	0.0243 [0.614]	0.0496** [0.026]	0.048 [0.220]	0.0209 [0.667]	0.0477** [0.042]	0.0393 [0.337]
NBFI dummy * Formation/operation of non-regulated microcredit institutions (0-4)	-0.033 [0.435]	-0.037 [0.202]	-0.0436 [0.172]	-0.031 [0.476]	-0.0401 [0.187]	-0.038 [0.257]
Combined group dummy * Formation/operation of non-regulated microcredit institutions (0-4)	-0.0708 [0.212]	-0.0999*** [0.002]	-0.1039*** [0.010]	-0.0671 [0.258]	-0.1000*** [0.004]	-0.0961** [0.021]
NBFI dummy	0.0751 [0.482]	0.1092 [0.102]	0.1136 [0.188]	0.0631 [0.573]	0.1073 [0.126]	0.0889 [0.322]
Combined group dummy	0.1166 [0.396]	0.1980*** [0.006]	0.2061** [0.035]	0.0771 [0.618]	0.1717** [0.034]	0.1538 [0.154]
Observations	636	636	611	579	579	556
Number of countries	39	39	39	39	39	39
R-squared	0.215	0.233	0.261	0.223	0.24	0.262
Adjusted R-squared	0.191	0.209	0.237	0.196	0.214	0.236
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.00873 [0.720]	0.0126 [0.536]	0.00441 [0.847]	-0.0101 [0.679]	0.0076 [0.721]	0.00129 [0.956]
Combined group dummy	-0.0465* [0.075]	-0.0503** [0.033]	-0.0559*** [0.009]	-0.0462 [0.134]	-0.0523** [0.040]	-0.0568** [0.025]

**Table 8. Portfolio at Risk(>30days) (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel A: Overall Score Nominal**

Dep var: Portfolio at Risk(>30days)							
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OVERALL SCORES (0-100)	-0.0006*** [0.001]	-0.0004 [0.261]	-0.0006*** [0.000]	-0.0004 [0.143]	-0.0011** [0.013]	-0.0003 [0.683]	-0.0008 [0.255]
Observations	741	702	627	598	547	547	525
Number of countries	40	40	39	39	29	29	28
R-squared	0.174	0.130	0.249	0.177	0.104	0.100	0.103
Adjusted R-squared	0.154	0.108	0.226	0.150	0.072	0.067	0.069
F statistic for weak identification						4.080	4.445
Shea partial R-squared						0.187	0.236
Hansen J statistics						0.075	0.753

**Panel B: Regulatory Framework and Practices**

Dep var: Portfolio at Risk(>30days)							
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory Framework and Practices (0-100)	-0.0004*** [0.002]	-0.0003 [0.244]	-0.0005*** [0.000]	-0.0004 [0.114]	-0.0008** [0.022]	-0.0007 [0.260]	-0.0006 [0.273]
Observations	741	702	627	598	547	547	525
Number of countries	40	40	39	39	29	29	28
R-squared	0.172	0.130	0.250	0.179	0.103	0.103	0.101
Adjusted R-squared	0.152	0.108	0.226	0.152	0.071	0.071	0.068
F statistic for weak identification						3.250	5.468
Shea partial R-squared						0.196	0.231
Hansen J statistics						0.103	0.686



P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel C: Regulatory and supervisory capacity for microfinance (0-4)**

Dep var: Portfolio at Risk(>30days)							
<i>Microscope variable</i>	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory and supervisory capacity for microfinance (0-4)	-0.0061*** [0.001]	-0.0053* [0.086]	-0.0060*** [0.001]	-0.0055* [0.074]	-0.0108** [0.010]	-0.0083 [0.443]	-0.0112 [0.281]
Observations	741	702	627	598	547	547	525
Number of countries	40	40	39	39	29	29	28
R-squared	0.174	0.133	0.248	0.180	0.104	0.104	0.104
Adjusted R-squared	0.155	0.111	0.224	0.153	0.072	0.071	0.070
F statistic for weak identification						2.458	1.778
Shea partial R-squared						0.099	0.109
Hansen J statistics						0.093	0.656

**Panel D: Regulatory framework for deposit-taking (0-4)**

Dep var: Portfolio at Risk(>30days)							
<i>Microscope variable</i>	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regulatory framework for deposit-taking (0-4)	-0.0069** [0.016]	-0.0063 [0.123]	-0.0109*** [0.000]	-0.0102** [0.011]	-0.0134* [0.052]	-0.0087 [0.520]	-0.0119 [0.294]
Observations	741	702	627	598	547	547	525
Number of countries	40	40	39	39	29	29	28
R-squared	0.167	0.130	0.255	0.184	0.101	0.101	0.100
Adjusted R-squared	0.148	0.108	0.231	0.157	0.069	0.068	0.066
F statistic for weak identification						2.115	5.602
Shea partial R-squared						0.170	0.278
Hansen J statistics						0.096	0.753

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the Country level. All models are estimated via three methods: ordinary least squares (OLS) model, robust regression model and instrumental variable model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), status dummies (commercial bank, credit union / coop, NGO, non-bank financial institution, omitting rural bank), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. The details of instrumental variable model are shown as below.

\*1 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Independence of Supervisory Authority - Political respectively

\*2 1st excluded IV is Supervisory Forbearance Discretion, and 2nd is Percent of 10 Biggest Banks Rated by Domestic Credit Rating Agencies respectively

**Panel E: Formation/operation of non-regulated microcredit institutions (0-4)**

<i>Microscope variable</i>	Dep var: Portfolio at Risk(>30days)						
	Robust Reg w/o Lending methodology dummy	OLS Dropping top 5% of dep var w/o Lending methodology dummy	Robust Reg	OLS Dropping top 5% of dep var	OLS w/ the same observations to IV	Instrumental Variable 1* <sup>1</sup>	Instrumental Variable 2* <sup>2</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Formation/operation of non-regulated microcredit institutions (0-4)	0.0006 [0.786]	0.0029 [0.269]	0.0005 [0.817]	0.003 [0.291]	-0.0023 [0.644]	-0.0319 [0.156]	-0.0191 [0.418]
Observations	741	702	627	598	547	547	525
Number of countries	40	40	39	39	29	29	28
R-squared	0.161	0.127	0.235	0.174	0.096	0.058	0.075
Adjusted R-squared	0.141	0.106	0.211	0.147	0.063	0.024	0.040
F statistic for weak identification						1.873	1.493
Shea partial R-squared						0.068	0.074
Hansen J statistics						0.424	0.807

**Table 9. Portfolio at Risk(>30days) w/ Interaction term (MFI-level regression)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel A: Overall Score Nominal (0-100)

	Dep var: Portfolio at Risk(>30days)					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Overall Score Nominal	-0.0003	-0.0007***	-0.0006**	-0.0003	-0.0007***	-0.0007**
	[0.455]	[0.001]	[0.047]	[0.458]	[0.001]	[0.020]
NBFI dummy * Overall Score Nominal (0-100)	0.0004	0.0007**	0.0008*	0.0006	0.0006**	0.0008*
	[0.355]	[0.025]	[0.079]	[0.199]	[0.026]	[0.093]
Combined group dummy * Overall Score Nominal (0-100)	-0.0007	0.0002	0.0003	0.001	0.0005	0.0007
	[0.407]	[0.563]	[0.523]	[0.190]	[0.157]	[0.132]
NBFI dummy	-0.0108	-0.0315**	-0.0359	-0.0196	-0.0298**	-0.0385
	[0.697]	[0.029]	[0.134]	[0.492]	[0.025]	[0.112]
Combined group dummy	0.055	0.0004	-0.0015	-0.0288	-0.0229	-0.0289
	[0.186]	[0.979]	[0.947]	[0.494]	[0.175]	[0.204]
Observations	627	627	598	572	572	546
Number of countries	39	39	39	39	39	39
R-squared	0.074	0.208	0.165	0.071	0.25	0.172
Adjusted R-squared	0.0447	0.183	0.137	0.0391	0.224	0.143
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.000104	-0.000018	0.000177	0.000303	-0.0000575	0.000134
	[0.806]	[0.946]	[0.709]	[0.490]	[0.815]	[0.783]
Combined group dummy	-0.000993	-0.000487*	-0.00031	0.000659	-0.00017	0.0000706
	[0.161]	[0.094]	[0.515]	[0.316]	[0.598]	[0.883]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

**Panel B: Regulatory Framework and Practices (0-100)**

	Dep var: Portfolio at Risk(>30days)					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory Framework and Practices (0-100)	-0.0002 [0.610]	-0.0006*** [0.002]	-0.0006* [0.051]	-0.0002 [0.651]	-0.0005*** [0.004]	-0.0006** [0.028]
NBFI dummy * Regulatory Framework and Practices (0-100)	0.0001 [0.779]	0.0002 [0.377]	0.0004 [0.332]	0.0002 [0.661]	0.0002 [0.430]	0.0003 [0.433]
Combined group dummy * Regulatory Framework and Practices (0-100)	-0.0009 [0.162]	0.0003 [0.280]	0.0003 [0.375]	0.0005 [0.520]	0.0005 [0.119]	0.0007* [0.096]
NBFI dummy	0.0024 [0.935]	-0.0125 [0.412]	-0.02 [0.391]	-0.0032 [0.918]	-0.0117 [0.410]	-0.0195 [0.415]
Combined group dummy	0.0723* [0.074]	-0.0081 [0.608]	-0.0068 [0.762]	-0.0102 [0.837]	-0.0282 [0.123]	-0.0359 [0.136]
Observations	627	627	598	572	572	546
Number of countries	39	39	39	39	39	39
R-squared	0.076	0.205	0.162	0.069	0.24	0.171
Adjusted R-squared	0.0468	0.18	0.135	0.0371	0.214	0.141
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.0000685 [0.874]	-0.000337 [0.147]	-0.000146 [0.716]	0.0000519 [0.905]	-0.0003 [0.166]	-0.000231 [0.566]
Combined group dummy	-0.0011* [0.063]	-0.00028 [0.248]	-0.000211 [0.613]	0.000324 [0.634]	0.0000151 [0.960]	0.000174 [0.657]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel C: Regulatory and supervisory capacity for microfinance (0-4)

	Dep var: Portfolio at Risk(>30days)					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory and supervisory capacity for microfinance (0-4)	-0.0041 [0.445]	-0.0077*** [0.001]	-0.0077** [0.042]	-0.0032 [0.542]	-0.0069*** [0.002]	-0.0080** [0.028]
NBFI dummy * Regulatory and supervisory capacity for microfinance (0-4)	0.0067 [0.276]	0.0065* [0.055]	0.0063 [0.261]	0.0079 [0.210]	0.0058* [0.066]	0.0055 [0.358]
Combined group dummy * Regulatory and supervisory capacity for microfinance (0-4)	-0.0101 [0.219]	0.0021 [0.566]	0.0021 [0.625]	0.0097 [0.192]	0.0074* [0.072]	0.0070* [0.077]
NBFI dummy	-0.0049 [0.793]	-0.0142* [0.082]	-0.0116 [0.446]	-0.0067 [0.726]	-0.0134* [0.075]	-0.0124 [0.415]
Combined group dummy	0.0435** [0.038]	0.0048 [0.580]	0.0081 [0.427]	-0.0019 [0.939]	-0.015 [0.117]	-0.0093 [0.371]
Observations	627	627	598	572	572	546
Number of countries	39	39	39	39	39	39
R-squared	0.076	0.209	0.165	0.071	0.247	0.172
Adjusted R-squared	0.0475	0.184	0.138	0.0388	0.221	0.142
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.00264 [0.576]	-0.00123 [0.668]	-0.00142 [0.783]	0.00465 [0.319]	-0.00109 [0.682]	-0.00257 [0.618]
Combined group dummy	-0.0141* [0.050]	-0.00561* [0.085]	-0.00569 [0.172]	0.00646 [0.248]	0.000553 [0.884]	-0.000987 [0.746]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel D: Regulatory framework for deposit-taking (0-4)

	Dep var: Portfolio at Risk(>30days)					
	Version 1 (Full samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory framework for deposit-taking (0-4)	-0.0029 [0.701]	-0.0115*** [0.001]	-0.0121*** [0.009]	-0.0014 [0.842]	-0.0099*** [0.002]	-0.0119*** [0.004]
NBFI dummy * Regulatory framework for deposit-taking (0-4)	-0.0062 [0.589]	0.0004 [0.936]	0.0054 [0.417]	-0.005 [0.669]	-0.0001 [0.988]	0.0032 [0.608]
Combined group dummy * Regulatory framework for deposit-taking (0-4)	-0.0214* [0.075]	0.0058 [0.260]	0.0016 [0.812]	-0.0068 [0.668]	0.0061 [0.325]	-0.0004 [0.968]
NBFI dummy	0.0221 [0.328]	-0.0011 [0.898]	-0.0078 [0.467]	0.0181 [0.450]	-0.0016 [0.845]	-0.0072 [0.475]
Combined group dummy	0.0641** [0.033]	-0.0039 [0.721]	0.0085 [0.568]	0.0288 [0.423]	-0.0117 [0.332]	0.0045 [0.802]
Observations	627	627	598	572	572	546
Number of countries	39	39	39	39	39	39
R-squared	0.077	0.216	0.167	0.069	0.25	0.175
Adjusted R-squared	0.0479	0.192	0.14	0.0374	0.224	0.145
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	-0.00911 [0.374]	-0.0112*** [0.007]	-0.00672 [0.326]	-0.00642 [0.510]	-0.00995*** [0.010]	-0.00867 [0.172]
Combined group dummy	-0.0243** [0.027]	-0.00572 [0.251]	-0.0105 [0.156]	-0.00818 [0.565]	-0.00382 [0.520]	-0.0123 [0.165]

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via two methods: ordinary least squares (OLS) model and robust regression model. In dropping outlier OLS model, top 5% samples on each dependent variable are dropped except % of Women Borrowers. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa), lending methodology dummies (individual and solidarity lending, omitting village banking) and log of MFI's total asset values. Combined group dummy is 1 if one of the three status dummies (commercial bank, credit union / coop or rural bank) equals 1. NGO dummy is omitted in these models.

Panel E: Formation/operation of non-regulated microcredit institutions (0-4)

	Dep var: Portfolio at Risk(>30days)					
	Version 1 (Ful samples)			Version 2 (Dropping Rural bank samples)		
	OLS	Robust Reg	OLS Dropping top 5% of dep var	OLS	Robust Reg	OLS Dropping top 5% of dep var
	(1)	(2)	(3)	(4)	(5)	(6)
Formation/operation of non-regulated microcredit institutions (0-4)	0.0063 [0.353]	0.0015 [0.688]	0.0008 [0.880]	0.0059 [0.350]	0.001 [0.770]	-0.0009 [0.846]
NBFI dummy * Formation/operation of non-regulated microcredit institutions (0-4)	-0.0057 [0.504]	0.0033 [0.487]	0.0069 [0.268]	-0.0037 [0.662]	0.0034 [0.445]	0.0082 [0.148]
Combined group dummy * Formation/operation of non-regulated microcredit institutions (0-4)	-0.011 [0.254]	-0.0061 [0.237]	-0.0003 [0.970]	-0.0049 [0.518]	-0.0042 [0.394]	0.0033 [0.589]
NBFI dummy	0.0231 [0.323]	-0.0063 [0.568]	-0.0128 [0.403]	0.018 [0.457]	-0.0079 [0.448]	-0.0187 [0.180]
Combined group dummy	0.0462* [0.077]	0.0211* [0.074]	0.0127 [0.424]	0.0287 [0.261]	0.0093 [0.432]	-0.0017 [0.905]
Observations	627	627	598	572	572	546
Number of countries	39	39	39	39	39	39
R-squared	0.071	0.206	0.159	0.069	0.242	0.164
Adjusted R-squared	0.0416	0.182	0.131	0.0373	0.215	0.134
<i>Microscope index+ interaction term (P-value in brackets)</i>						
NBFI dummy	0.000575 [0.926]	0.00477 [0.156]	0.00767* [0.072]	0.00226 [0.709]	0.0044 [0.162]	0.00735* [0.073]
Combined group dummy	-0.0047 [0.461]	-0.00469 [0.221]	0.000503 [0.913]	0.00101 [0.874]	-0.00325 [0.379]	0.00236 [0.589]

**Table 10. MFI status regression (using Logit model w/o MFI status dummies & lending methodology dummies)**

P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via logit model. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa) and log of MFI's total asset values.

**Panel A: Overall Score Nominal**

	Bank dummy	Credit Union & corp dummy	NGO dummy	NBFI dummy	Group A (Bank, NBFI or Rural Bank) dummy	Group B (NGO or NBFI dummy)
	(1)	(2)	(3)	(4)	(5)	(6)
OVERALL SCORES (0-100)	-0.0133 [0.519]	-0.0434** [0.048]	0.0124 [0.597]	0.009 [0.671]	0.0018 [0.933]	0.0194 [0.252]
Observations	778	778	778	778	778	778
Number of countries	41	41	41	41	41	41

**Panel B: Regulatory Framework and Practices**

	Bank dummy	Credit Union & corp dummy	NGO dummy	NBFI dummy	Group A (Bank, NBFI or Rural Bank) dummy	Group B (NGO or NBFI dummy)
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory Framework and Practices (0-100)	-0.0262 [0.195]	-0.0309 [0.159]	0.0144 [0.464]	0.0122 [0.492]	-0.0016 [0.922]	0.0230* [0.079]
Observations	778	778	778	778	778	778
Number of countries	41	41	41	41	41	41



P-values are in brackets. \*, \*\*, \*\*\* represent statistical significance at the 10%, 5%, and 1% level respectively. Standards errors allow for clustering at the country level. All models are estimated via logit model. Though we do not present the coefficients to conserve space, all models include all of the following controls; annual % of inflation rate (GDP deflator), annual % of GDP growth, Rule of law, Bank overhead costs / Total assets, Ease of doing business index, Bank Credit / GDP, regional dummies (Europe and Central Asia, Latin America and Asia, Sub-Saharan Africa, South Asia and East Asia and Pacific, omitting Middle East and North Africa) and log of MFI's total asset values.

**Panel C: Regulatory and supervisory capacity for microfinance (0-4)**

<i>Microscope variable</i>	Bank dummy	Credit Union & corp dummy	NGO dummy	NBFI dummy	Group A (Bank, NBFI or Rural Bank) dummy	Group B (NGO or NBFI dummy)
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory and supervisory capacity for microfinance (0-4)	-0.3461 [0.281]	-0.2492 [0.326]	0.1676 [0.467]	0.0332 [0.873]	-0.1006 [0.626]	0.2711 [0.185]
Observations	778	778	778	778	778	778
Number of countries	41	41	41	41	41	41

**Panel D: Regulatory framework for deposit-taking (0-4)**

<i>Microscope variable</i>	Bank dummy	Credit Union & corp dummy	NGO dummy	NBFI dummy	Group A (Bank, NBFI or Rural Bank) dummy	Group B (NGO or NBFI dummy)
	(1)	(2)	(3)	(4)	(5)	(6)
Regulatory framework for deposit-taking (0-4)	-0.2722 [0.354]	-0.1851 [0.619]	0.4202 [0.214]	-0.0905 [0.745]	-0.3355 [0.251]	0.2551 [0.331]
Observations	778	778	778	778	778	778
Number of countries	41	41	41	41	41	41

**Panel E: Formation/operation of non-regulated microcredit institutions (0-4)**

<i>Microscope variable</i>	Bank dummy	Credit Union & corp dummy	NGO dummy	NBFI dummy	Group A (Bank, NBFI or Rural Bank) dummy	Group B (NGO or NBFI dummy)
	(1)	(2)	(3)	(4)	(5)	(6)
Formation/operation of non-regulated microcredit institutions (0-4)	-0.383 [0.130]	-0.2897 [0.539]	0.5520** [0.044]	-0.022 [0.905]	-0.2721 [0.208]	0.34 [0.250]
Observations	778	778	778	778	778	778
Number of countries	41	41	41	41	41	41

## Appendix A. Definitions of Microscope variables

\*Only Microscope variables used in this paper are shown

Microscope variables	Definitions	Scoring criteria
Overall Score Nominal (0-100)	Overall score for each country is calculated as the weighted sum of the "Regulatory Framework and Practices (REP)" and "Supporting Institutional Framework (SIF)" category scores, reduced by the adjustment factor. The adjustment factor is based on each country's Stability score and represents a combined assessment of the likelihood and potential impact that political shocks or weak governance could have on the Microfinance environment.	0-100 where 100=most favorable
Regulatory Framework and Practices (0-100)	Regulatory Framework and Practices (RFP) is calculated as the weighted sum of the scores in this category: Regulation and supervision of microcredit portfolios, Formation of regulated/supervised microcredit institutions, Formation/operation of non-regulated microcredit institutions, Regulatory and supervisory capacity for microfinance (including credit and other services) and Regulatory framework for deposit-taking.	0-100 where 100=most favorable
Regulatory and supervisory capacity for microfinance (0-4)	Sub-categories of Regulatory Framework and Practice (RFP). Regulatory and supervisory capacity for microfinance (including credit and other services): "Do regulatory institutions possess an adequate capacity for the regulation and supervision of microfinance? Is supervision truly risk-based and not focused arbitrarily on strictly traditional indicators (for example, collateral)? Does regulatory capacity match or reflect the pace of innovation in non-traditional forms of microfinance that are allowed and that exist in the country (such as insurance, mobile banking, and remittances)? Are data on the industry collected, and are institutional checks conducted when and where relevant?"	Scoring: 0=Very weak capacity to regulate or supervise microfinance operations; 1=Limited capacity to regulate and supervise; 2=Some capacity to regulate and supervise; 3=Substantial capacity to regulate and supervise; 4=Excellent capacity to regulate and supervise
Regulatory framework for deposit-taking (0-4)	Sub-categories of Regulatory Framework and Practice (RFP). Regulatory framework for deposit-taking: "Are regulated MFIs permitted to take deposits? Are the regulations reasonable and not overly burdensome? Are deposits (any type; for example, time, sight and contractual savings) only taken by regulated entities? Are regulations, including know-your-client regulations/anti-money laundering regulations, present without being burdensome? Do they have minimum balance requirements or fees that limit micro-deposits?" This indicator assigns more points to countries that do not inhibit more varied forms of deposit-taking. It also strikes a balance between the need for prudential regulation and the removal of unnecessary obstacles to deposit-taking.	Scoring: 0=Regulated institutions may not take deposits; 1=Regulated institutions can take deposits, but are limited in the types they may accept and most regulations are burdensome; 2=Regulated institutions may take a reasonably broad range of deposits and regulation is only moderately burdensome; 3=Regulated institutions can take a reasonably broad range of deposits and regulations are prudent, posing only minor obstacles; 4=Regulated institutions can take the widest range of deposits and regulations are prudent, posing no significant obstacles
Formation/operation of non-regulated microcredit institutions (0-4)	Sub-categories of Regulatory Framework and Practice (RFP). Formation/operation of non-regulated microcredit institutions: "Is the legal framework conducive to the formation and functioning of non-regulated microcredit institutions? Do non-regulated institutions take deposits?"	Scoring: 0=Unregulated institutions are barred from offering micro-loans; 1=Unregulated institutions face many obstacles to establishing operations; 2=Unregulated institutions face some obstacles; 3=Unregulated institutions face only minor obstacles; 4=Unregulated institutions face no significant obstacles
Supporting Institutional Framework (0-100)	Supporting Institutional Framework (SIF) is calculated as the weighted sum of scores in this category: Accounting transparency, Client protection (transparency in pricing), Client protection (dispute resolution), Credit bureaus and Policy and practice for financial transactions through agents	0-100 where 100=most favorable
Client Protection: Transparency in pricing	Sub-categories of Supporting Institutional Framework (SIF). Client protection: Transparency in pricing: "Does the regulatory system protect microfinance borrowers by requiring transparency on interest rates? Do institutions, both regulated and non-regulated, follow these practices?"	Scoring: 0= Regulations do not require transparency on interest rates; 1=Regulations are technically in place, but they are not followed or enforced; 2=Regulations are in place, but less than a majority of institutions comply; 3=Regulations are in place and the majority of institutions comply; 4=Regulations are robust and failure to comply is the exception

## Appendix B. Definitions and Summary statistics

Variable Name	Level	Definition	Obs#	Mean	Median	Min	Max	St. Dev.
Number of borrowers as % of population	Country	The share of MFI borrowers as a percentage of population. Data for the number of microfinance borrowers comes from MIX market. All borrower and microenterprise data proxies are for 2010 or the latest available year.	41	3.14	2.14	0.01	11.96	3.35
Average loan size, per capita GNI	MFI	Average loan size relative to the average per capita Gross National Income, taking the average from 2007 to 2009 of MIX dataset.	770	0.57	0.25	0.01	16.22	1.17
% of Women borrowers	MFI	Number of Active Borrowers who are women / Number of Active Borrowers, taking the average from 2007 to 2009 of MIX dataset.	735	0.65	0.64	0.01	1.00	0.27
Portfolio at Risk(>30days)	MFI	The value of all loans outstanding that have one or more installments of principal past due more than 30 days. This includes the entire unpaid principal balance, including both the past due and future installments, but not accrued interest. It also includes loans that have been restructured or rescheduled, taking the average from 2007 to 2009 of MIX dataset.	748	0.07	0.05	0.00	0.96	0.09
Financial Self-Sufficiency (FSS)	MFI	Ratio greater than one if institution generates sufficient revenue to cover its cost adjusted for inflation and the subsidies that MFIs receives such as donated equity and concessional loans. $FSS = \text{Adjusted Financial Revenue} / \text{Adjusted (Financial Expense + Impairment Losses on Loans + Operating Expense)}$ , taking the average from 2007 to 2009 of MIX dataset.	759	1.02	1.04	0.07	3.17	0.27
Overall Score Nominal (0-100)	Country	Overall score for each country is calculated as the weighted sum of the "Regulatory Framework and Practices" and "Supporting Institutional Framework" category scores, reduced by the adjustment factor. Using the Microscope scores in 2010.	41	42.85	43.90	19.70	67.80	12.87

## Appendix B. Definitions and Summary statistics (cont.)

Variable Name	Level	Definition	Obs#	Mean	Median	Min	Max	St. Dev.
Regulatory Framework and Practices (0-100)	Country	Regulatory Framework and Practices (RFP) is calculated as the weighted sum of the scores in this category: Regulation and supervision of microcredit portfolios, Formation of regulated/supervised microcredit institutions, Formation/operation of non-regulated microcredit institutions, Regulatory and supervisory capacity for microfinance (including credit and other services) and Regulatory framework for deposit-taking. Using the Microscope scores in 2010.	41	49.02	50	20	75	15.05
Regulatory and supervisory capacity for microfinance (0-4)	Country	Sub-categories of Regulatory Framework and Practice (RFP). Regulatory and supervisory capacity for microfinance (including credit and other services): “Do regulatory institutions possess an adequate capacity for the regulation and supervision of microfinance? Is supervision truly risk-based and not focused arbitrarily on strictly traditional indicators (for example, collateral)? Does regulatory capacity match or reflect the pace of innovation in non-traditional forms of microfinance that are allowed and that exist in the country (such as insurance, mobile banking, and remittances)? Are data on the industry collected, and are institutional checks conducted when and where relevant?” Scoring: 0=Very weak capacity to regulate or supervise microfinance operations; 1=Limited capacity to regulate and supervise; 2=Some capacity to regulate and supervise; 3=Substantial capacity to regulate and supervise; 4=Excellent capacity to regulate. Using the Microscope scores in 2010.	41	1.73	2	0	4	1.00
Regulatory framework for deposit-taking (0-4)	Country	Sub-categories of Regulatory Framework and Practice (RFP). Regulatory framework for deposit-taking: “Are regulated MFIs permitted to take deposits? Are the regulations reasonable and not overly burdensome? Are deposits (any type; for example, time, sight and contractual savings) only taken by regulated entities? Are regulations, including know-your-client regulations/anti-money laundering regulations, present without being burdensome? Do they have minimum balance requirements or fees that limit micro-deposits?” This indicator assigns more points to countries that do not inhibit more varied forms of deposit-taking. It also strikes a balance between the need for prudential regulation and the removal of unnecessary obstacles to deposit-taking. Scoring: 0=Regulated institutions may not take deposits; 1=Regulated institutions can take deposits, but are limited in the types they may accept and most regulations are burdensome ;2=Regulated institutions may take a reasonably broad range of deposits and regulation is only moderately burdensome; 3=Regulated institutions can take a reasonably broad range of deposits and regulations are prudent, posing only minor obstacles; 4=Regulated institutions can take the widest range of deposits and regulations are prudent, posing no significant obstacles. Using the Microscope scores in 2010.	41	1.63	2	0	3	0.83
Formation/operation of non-regulated microcredit institutions (0-4)	Country	Sub-categories of Regulatory Framework and Practice (RFP). Formation/operation of non-regulated microcredit institutions: “Is the legal framework conducive to the formation and functioning of non-regulated microcredit institutions? Do non-regulated institutions take deposits?” Scoring: 0=Unregulated institutions are barred from offering micro-loans; 1=Unregulated institutions face many obstacles to establishing operations; 2=Unregulated institutions face some obstacles; 3=Unregulated institutions face only minor obstacles; 4=Unregulated institutions face no significant obstacles. Using the Microscope scores in 2010.	41	1.98	2	0	4	0.99

Appendix B. Definitions and Summary statistics (cont.)

Variable Name	Level	Definition	Obs#	Mean	Median	Min	Max	St. Dev.
Supporting Institutional Framework (0-100)	Country	Supporting Institutional Framework (SIF) is calculated as the weighted sum of scores in this category: Accounting transparency, Client protection (transparency in pricing), Client protection (dispute resolution), Credit bureaus and Policy and practice for financial transactions through agents. Using the Microscope scores in 2010.	41	39.76	35	10	70	14.53
Client Protection: Transparency in pricing (0-4)	Country	Sub-categories of Supporting Institutional Framework (SIF). Client protection: Transparency in pricing: "Does the regulatory system protect microfinance borrowers by requiring transparency on interest rates? Do institutions, both regulated and non-regulated, follow these practices?" Scoring: 0= Regulations do not require transparency on interest rates; 1=Regulations are technically in place, but they are not followed or enforced; 2=Regulations are in place, but less than a majority of institutions comply; 3=Regulations are in place and the majority of institutions comply; 4=Regulations are robust and failure to comply is the exception. Using the Microscope scores in 2010.	41	1.80	2	0	4	0.84
Inflation, GDP deflator (annual %)	Country	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency, taking the average from 2007 to the latest of World Development Indicators in the World Bank database.	41	7.68	6.82	1.46	24.74	4.22
GDP growth (annual %)	Country	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2000 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources taking the average from 2007 to the latest of World Development Indicators in the World Bank database.	41	4.61	4.55	0.51	8.17	1.95
Rule of law	Country	Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence derived from the Worldwide Governance Indicators (WGI) in the World Bank database.	41	-0.59	-0.63	-1.58	1.27	0.53
Bank overhead costs / Total assets	Country	Accounting value of a bank's overhead costs as a share of its total assets, taking the average from 2007 to the latest derived from Financial Development and Structure Dataset in the World Bank database.	41	0.05	0.05	0.01	0.17	0.04
Ease of doing business index (1=most business-friendly regulations)	Country	Ease of doing business ranks economies from 1 to 185, with first place being the best. A high ranking (a low numerical rank) means that the regulatory environment is conducive to business operation. The index averages the country's percentile rankings on 10 topics covered in the World Bank's Doing Business. The ranking on each topic is the simple average of the percentile rankings on its component indicators. The ranks in 2010 are used.	41	104.76	112	16	175	39.19

## Appendix B. Definitions and Summary statistics (cont.)

Variable Name	Level	Definition	Obs#	Mean	Median	Min	Max	St. Dev.
Bank Credit / GDP	Country	Private credit by deposit money banks as a share of GDP, taking the average from 2007 to the latest derived from Financial Development and Structure Dataset in the World Bank database.	41	0.35	0.30	0.08	0.96	0.22
Supervisory Forbearance Discretion	Country	Whether the supervisory authorities may engage in forbearance when confronted with violations of laws and regulations or other imprudent behavior. Higher values indicate greater discretion taking the average of 2003 and 2007 derived from Bank Regulation and Supervision Dataset in the World Bank database.	33	1.09	1.00	0.00	2.50	0.74
Independence of Supervisory Authority-Political	Country	The degree to which the supervisory authority is independent within the government from political influence. Higher values signify greater independence taking the average of 2003 and 2007 derived from Bank Regulation and Supervision Dataset in the World Bank database.	30	0.33	0.00	0.00	1.00	0.48
Percentage of Ten biggest Banks Rated by Domestic Credit Rating Agencies	Country	The percentage of the top ten banks that are rated by domestic credit rating agencies taking the average of 2003 and 2007 derived from Bank Regulation and Supervision Dataset in the World Bank database.	30	24.20	0.00	0.00	100.00	31.82
Europe and Central Asia dummy	MFI	Dummy equal to one if the institution is in Europe and Central Asia in MIX dataset.	772	0.12	0	0	1	0.33
Latin America and Caribbean dummy	MFI	Dummy equal to one if the institution is in Latin America and Caribbean in MIX dataset.	772	0.34	0	0	1	0.48
Sub-Saharan Africa dummy	MFI	Dummy equal to one if the institution is in Sub-Saharan Africa in MIX dataset.	772	0.11	0	0	1	0.32
South Asia dummy	MFI	Dummy equal to one if the institution is in South Asia in MIX dataset.	772	0.22	0	0	1	0.41
East Asia and Pacific dummy	MFI	Dummy equal to one if the institution is in East Asia and Pacific in MIX dataset.	772	0.17	0	0	1	0.37
Bank dummy	MFI	Dummy equal to one if the institution is commercial bank in MIX dataset.	772	0.07	0	0	1	0.26
Credit Union & coop dummy	MFI	Dummy equal to one if the institution is credit union & coop in MIX dataset.	772	0.08	0	0	1	0.27
NGO dummy	MFI	Dummy equal to one if the institution is NGO in MIX dataset.	772	0.42	0	0	1	0.49
NBFI dummy	MFI	Dummy equal to one if the institution is non-bank financial institution in MIX dataset.	772	0.32	0	0	1	0.47
Rural bank dummy	MFI	Dummy equal to one if the institution is rural bank in MIX dataset.	772	0.09	0	0	1	0.28
Combined group dummy	MFI	Dummy equal to one if the institution is a bank, credit union & coop or rural bank in MIX dataset.	772	0.24	0	0	1	0.43
Preferring individual lending dummy	MFI	Dummy equal to one if the institution's gross loan portfolio on individual lending is larger than the two lending methodologies, solidarity and village lending, taking the average from 2007 to 2009 of MIX dataset.	772	0.60	1	0	1	0.49
Preferring solidarity lending dummy	MFI	Dummy equal to one if the institution's gross loan portfolio on solidarity lending is larger than the two lending methodologies, individual and village lending, taking the average from 2007 to 2009 of MIX dataset.	772	0.30	0	0	1	0.46
Log of total ass (PPP\$)	MFI	Log of assets in purchasing power parity terms, taking the average from 2007 to 2009 of MIX dataset.	772	16.62	16.55	10.71	22.87	1.90