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RESEARCH ARTICLE

International Debt Financing and Performance of Microfinance Institutions[1]

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The international financing of microfinance has become a new specialized market which attracts investors with varying degrees of profit motivation.

Investors lending at commercial rates target MFIs with relatively better financial performance, while those lending at subsidized rates target financially weaker MFIs that focus on female customers.

Commercial funding to microfinance institutions (MFIs) seems to follow the negative screening approach, being driven mainly by financial performance and professionalization of the MFIs while subsidized funding seems to follow a positive approach, being driven mainly by targeting poverty alleviation and social inclusion.

Introduction

During recent decades, the provision of microfinance services to poor families and micro-entrepreneurs has evolved to become a global industry. Until recently, donations and subsidies have been the main source of funding for microfinance institutions (MFIs). Lately, however, the growth of the industry and the pressure by donors toward financial sustainability has pushed MFIs to turn to international capital markets. Moreover, international funding is regarded by many as essential to fuel the growth of the sector, arguing that only international capital markets can handle the estimated US$200 billion needed to reach the potential demand for microfinance services worldwide (Swanson, 2008). Recent academic research (Mersland *et al.*, 2011) has also shown that internationalization, notably through investments, can have an overall positive influence on the social performance of MFIs.

The development of specialized investment funds, called microfinance investment vehicles (MIVs), illustrates the emergence of this new specialized capital market. MFIs typically have both financial and social objectives (Armendariz and Morduch, 2010) and attract funding from actors with varying degrees of profit motivation, from purely development-oriented to maximum profit-oriented (Goodman, 2004). In 2010, the 95 MIVs in operation managed US$8 billion coming from public and private institutional investors (42%), individuals (34%), development institutions (21%), and others (3%), mostly invested in the form of loans to MFIs[2] (MicroRate, 2011; Reille *et al.*, 2011).

[1] JEL classification codes: G11, G23, L2, O16, O17.
[2] The repartition of microfinance assets invested by MIVs in 2010 was 82% loans and 18% equity (MicroRate, 2011).

This article examines the profiles of the MFIs receiving loans from MIVs. More specifically, using data from 319 MFIs in 68 developing countries, we study whether there is a relationship between an MFI's access to international debt and its financial and social performance. We find that access to commercial debt is related to strong financial performance, a high level of professionalization, and a low average loan size indicating outreach to poor customers. The targeting of women is not a priority for MFIs accessing international commercial debt. As for MFIs accessing subsidized international debt, they target female customers to a greater extent than other MFIs.

The rest of this article is organized as follows. The next section discusses how the financial and social performances of MFIs influence the type of funding received, and outlines the hypotheses to be tested. The third section explains the model, the methodology, and the dataset used for estimations, while the fourth section presents and discusses the findings. The fifth section concludes.

International funding and the performance of MFIs

In this section we develop hypotheses on how international funding is associated with the social and financial performances of MFIs.

The relationship between international funding and MFI social performance

First, we investigate the link between the MFI's social performance and its access to international funding. As all MIVs claim to offer social returns to investors, they belong to the field of socially responsible investments (SRIs). Indeed, an SRI is "*an investment process that integrates social, environmental and ethical considerations into investment decision making*" (Renneboog *et al.*, 2008, p. 1). In other words, we label "socially responsible" any investment that is linked to the corporate social responsibility (CSR) of the target firm. In its modern understanding, CSR not only involves the ethical obligations of firms toward their stakeholders, but also requires investing in projects that yield social and economic benefits (Carrol, 1979; Porter and Kramer, 2002). In the microfinance world, CSR would then mean that MFIs fulfill their social mission in an economically sustainable way.

There are two approaches for responsible investment selection: *negative screening* and *positive screening* (Bollen, 2007; Juravle and Lewis, 2008). Negative screening (also called avoidance, or exclusion) involves a two-step process. First, the investment manager excludes specific fields or activities that investors consider undesirable (for instance, firms involved in weapons, alcohol, or tobacco). Then, investments are selected by a classical risk/return analysis. In contrast, with positive screening, nothing is excluded beforehand but investments are selected primarily with non-financial criteria (e.g., high environmental or social performance).

We will test two hypotheses. In the first one, MIVs use a positive screening approach and we expect to find a positive relationship between the social performance of an MFI and its access to international funding. In the second one, they use a negative screening approach and we expect to find a positive relationship with financial performance and none with social performance. The hypothesis of a negative screening in microfinance is based on the idea that MIVs consider microfinance a social investment *per se*, as if they avoid or exclude any other activity which is not microfinance, and then apply a typical financial analysis to the remaining potential investment projects.

Based on the above, we propose the following hypotheses.

In the case of positive screening

H1a: The presence of international funding in an MFI is positively related to its social performance

In the case of negative screening

H1b: There is no relationship between the presence of international funding in an MFI and its social performance, but a positive relationship with financial performance

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The relationship between international funding and MFI financial performance

To propose hypotheses on the influence of an MFI's financial performance on its access to international funding, we make the assumption that the microfinance investment landscape is as described by Goodman (2004): on the one hand, development-oriented investors finance not financially sustainable MFIs with grants, subsidized loans, or donated equity while on the other hand, commercial investors fund financially well-performing MFIs with loans and equity at market prices. Therefore, and as we focus on debt investments, the distinction should be made between commercial and subsidized loans. Loans are labeled "commercial" when the MFI has to pay interest at the market rate, and "subsidized" if the interest rate is below the market conditions.

Commercial funding and MFI performance

At its best, microfinance has proven that it can generate profit and growth while being low risk (Swanson, 2008). According to a study of MIV portfolios by Oehri and Fausch (2008), microfinance investments show low volatility and low correlation to other asset classes, which potentially makes microfinance an interesting asset to include in a portfolio for commercial investors.

Building on business lifecycle theory, which states that the development of organizations depends on their capacity to access adapted funding sources (Little, 1974; Channon, 2006), several authors (Kooi, 2001; de Sousa-Shields and Frankiewicz, 2004; Van Maanen, 2005; Bogan, 2008) argue that MFIs should be funded as follows. In the *youth* phase, MFIs need highly risk-tolerant subsidized capital in the form of grants and donated equity to support the early years of operation as MFIs are not sustainable enough to attract commercial funding. In the *growth* phase, MFIs must increase their scale and gain market shares with retained earnings and subsidized loans as the main sources of funding. This stage is also when, by complying with stricter banking regulations and transparency standards, MFIs can make the transition from non-profit organizations to regulated institutions so that they can mobilize deposits and have easier access to commercial funding. Regarding this specific issue, Bogan (2008) notes that this transition to a regulated entity is an expensive and difficult process that also requires subsidized funding. Consequently, many large and established MFIs continue to receive support to finance the transition in the form of grants and subsidized loans along with risk capital provided primarily by socially oriented investors. The last stage of the lifecycle is *maturity*, a stage when the MFIs are formal regulated banks with capital structures similar to those of commercial banks (Bogan, 2008). Thus, mature MFIs should be funded mostly by deposits, local capital markets, and commercial debt coming from international funds.

Taken together, commercial international funding should be positively related to the financial performance of the MFI, as outlined in this second hypothesis

> *H2: The presence of international commercial funding in an MFI is positively related to its financial performance*

Subsidized funding and MFI performance

As for subsidized funding, the lifecycle theory predicts that MFIs in their early stages need subsidized funding to compensate for their lack of profitability. We could, therefore, expect that international subsidized funding is negatively related to the MFI's financial performance. However, the relationship might not be that clear cut. The SRI literature provides insight into what type of MFIs the socially oriented investors would typically target. As previously outlined, social investors put their money into projects that yield social benefits. However, socially oriented investors also intend to ensure good economic performance from their investments (Porter and Kramer, 2002). Therefore, MIVs claim to have "double bottom line" objectives, and thus they invest in socially *and* financially sound MFIs. Moreover, De Schrevel *et al.* (2009) indicate that the rapid growth of MIVs between 2004 and 2008 is

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explained by a narrow targeting of the most profitable and professional MFIs. This could indicate that there is a positive relationship between access to subsidized funding and the financial performance of the MFI.

To summarize, we propose the following two alternative hypotheses for the relationship between international subsidized funding in an MFI and the MFI's financial performance

H3a: The presence of international subsidized funding in an MFI is negatively related to its financial performance

H3b: The presence of international subsidized funding in an MFI is positively related to its financial performance

Data and methodology

Dataset and descriptive statistics

The dataset comprises up to five years of data from 319 MFIs in 68 developing countries. The information has been compiled from risk assessment reports prepared by five rating agencies specializing in microfinance: MicroRate, Microfinanza, Planet Rating, Crisil, and M-Cril. Comparisons of the methodologies applied by the rating agencies reveal no major differences in MFI assessment relevant for variables included in this study. The dataset has a certain sample selection bias as only rated MFIs are included. They represent internationally oriented MFIs with the intention to practice microfinance in a business-oriented manner, and they have the greatest likelihood of achieving the dual goal of social and financial performance.

The rating agencies differ in their emphasis and in the abundance of available information. Thus, different numbers of observations on different variables in different years are reported. The rating reports comprising the data used for this study are from 2001 to 2008, with the vast majority from 2005 to 2008.

Variables

Dependent variables

We will test our hypotheses on three dependent variables. First, we use a dummy stating whether the MFI holds ***international debt*** at all (1 for yes and 0 for no) with no difference between commercial or subsidized debt. Then, we split this variable in two: ***commercial debt only*** on one side and ***subsidized debt only*** on the other side, based on the interest rate reported in rating reports compared to the market rate in the country.

Financial performance

To proxy the MFI's financial performance, we use the return on assets (ROA), the operating expense ratio, and the 30-day portfolio-at-risk (SEEP Network, 2005).

The ***ROA*** indicates how well the MFI is able to generate profit from its assets and is calculated as (Net operating income — Taxes)/Average annual assets.

The ***operating expense ratio***, calculated as Operating expenses/Average annual loan portfolio, assesses the efficiency of an MFI's activities. A lower level of operating expenses indicates that the MFI is more efficient than one with higher operating expenses.

Loan portfolio quality is crucial as it represents the quality of the MFI's largest asset. The risk associated with poor management of the portfolio can be dramatic, especially since microloans are generally not backed with bankable collateral (Jansson, 2003). We use the ***30-day portfolio-at-risk***, which measures the share of the MFI's outstanding loan portfolio with more than 30 days in arrears.

Social performance

Obtaining measurable and trustable MFI's data on social performance is difficult. Consequently, the following measures have been used extensively in the microfinance literature.

The ***average loan size*** (Cull *et al.*, 2007; De Bruyne, 2008; Mersland and Strøm, 2010; Lensink *et al.*, 2011). According to Schreiner (2002), a lower loan size indicates

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that the MFI reaches out to poorer customers. To ensure comparability between countries, we take the average loan size as a percentage of per capita gross national income (GNI).

The ***targeting of women*** (De Bruyne, 2008; Armendariz and Morduch, 2010; Mersland and Strøm, 2010; D'Espallier *et al.*, 2011). We use a time-invariant dummy that indicates whether the MFI has a conscious bias toward lending to women as indicated in the rating reports (D'Espallier *et al.*, 2011).

The ***rural outreach*** (De Bruyne, 2008; Mersland and Strøm, 2010). We use a dummy variable defining whether the MFI serves rural markets. As rural areas are generally in financial need and more difficult for MFIs to penetrate, better rural outreach can be considered an indicator of higher social performance.

Controls

We also include a number of control variables that could influence whether an international MIV would lend to an MFI. First, we include institution-specific controls: size (logarithm of MFI assets); age (number of years since start-up of MFI); a dummy stating whether the MFI was originated by an international initiator, as Mersland *et al.* (2011) show international orientation can have an impact on social performance of MFIs; a dummy indicating whether the MFI mobilizes voluntary savings; and the level of professionalization proxied by a dummy for the presence of an internal auditor reporting to the board. We also include contextual control variables. First, the human development index (HDI) to control for development differences across countries and second, regional dummies to capture differences across geographical regions (Latin America, MENA region, EECA region, Asia, and Africa).[3]

[3] We are aware that regional dummies only to a limited degree reflect the political and economic risk of each specific country, but controlling for each country would require a much larger dataset. Moreover, with the inclusion of the HDI we do control for individual country differences as the HDI captures both the social and economic development of a country.

Summary statistics

A total of 65% of the MFIs in our sample have international debt. Of those having international debt 30% have only commercial debt, 42% have only subsidized debt, and 28% have both types of debt.

Table 1 provides descriptive statistics for all variables used in the study. The average ROA is 0.8%, while the operating expense ratio is 35.7%, illustrating the high cost of microlending. Indeed, the operating expenses ratio, calculated as (Personnel costs + Administrative costs)/ Average total loan portfolio, is always higher in microfinance than in "classical" commercial banking, and this is mainly due to the decentralized credit methodology (microcredit officers go every day to clients' workplaces for cash disbursements and collection of repayments) and the small size of the transactions involved, which makes scale economies difficult. The average PAR30 is 6.7%. With respect to social performance, the average loan size represents, on average, 52.6% of the gross national income per capita in the country; 47% of MFIs have a bias in favor of targeting women and 18% operate only in rural areas. The average MFI has been operating for nine years. Only 19% of the MFIs collect voluntary savings, which suggests that sample MFIs are primarily non-regulated institutions. As for geographical distribution, Latin America represents 45% of the observations followed by Eastern Europe and Central Asia with 21%.

Table 2 shows the correlation matrix of the variables. High correlations among explicative variables can indicate a multicollinearity problem which would bias the interpretation of results. According to Kennedy (2008), correlations must be at least 0.8 to detect potential multicollinearity problems between variables, and as illustrated in Table 2 we can rule out problems with multicollinearity.

Estimation method

To determine which type of performance is associated with MFIs receiving international investments, we use pooled probit regressions. In probit regressions, the coef-

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Table 1. Summary statistic

	Obs.	Mean	Std dev.	Min	Max
Financial performance					
ROA	785	0.008	0.13	−0.99	0.34
Operating expenses ratio	773	0.357	0.51	0.02	11.32
Portfolio-at-risk	763	0.065	0.11	0.00	0.97
Social performance					
Average loan/GNI per capita	810	0.526	0.69	0.03	5.16
Women targeting	801	0.473	0.50	0	1
Dummy rural market	792	0.176	0.38	0	1
Control variables					
Logarithm of assets	800	14.716	1.32	10.60	18.26
MFI age	810	9.142	7.00	0.00	42.00
Dummy international initiator	808	0.402	0.49	0	1
Dummy voluntary savings	810	0.194	0.40	0	1
Dummy internal auditor	715	0.456	0.50	0	1
HDI	810	0.710	0.12	0.37	0.87

Cross-table — Number of MFI firm years per type of debt and region

Region	Latin America	Africa	Asia	EECA	MENA	Total	% of total
Commercial debt	97	38	13	40	4	192	20%
Subsidized debt	98	45	60	49	15	267	27%
Both types of debt	87	15	13	57	11	183	19%
No international debt	161	69	34	55	19	338	34%
Total	443	167	120	201	49	980	
% of total	45%	17%	12%	21%	5%		

ficients of the explicative variables cannot be interpreted as marginal effects on the dependent variable, and their signs show whether the corresponding variable influences positively or negatively the likelihood for the dependent variable to equal 1. Coefficients are estimated using the maximum likelihood method (Stock and Watson, 2006). As the data have a panel structure but the two dependent variables (commercial debt and subsidized debt) were reported only for the last year in the rating reports, we assume them to be constant over time. This assumption is natural as MFIs tend to keep international debt once received. In addition, the assumption corresponds to the reality behind investments as investors include historical performance when making their funding decisions. Therefore, we run cross-section pooled regressions. Moreover, as robustness checks (unreported) we have run single-year (rating year) and double-year (rating year + previous year) regressions, and the findings generally confirm the results reported below. In all regressions, we use robust standard errors to correct for heteroskedasticity. Data have also been tested and treated for outliers using Grubbs' test (Iglewicz and Hoaglin, 1993).[4] Finally, we run regressions with and without the MFI and country control variables. All three regressions are detailed in the Appendix.

[4] Though robustness checks show that outliers don't influence the results much, we have trimmed the dataset and left out from the analyses MFIs with average loans/GNI below 0.1 and above 5.5 as these represent extreme cases.

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Table 2. Correlations

		1	2	3	4	5	6	7	8	9	10	11
1	ROA	1										
2	Operating expense ratio	−0.3592	1									
3	Portfolio-at-risk (30 days)	−0.1899	−0.0826	1								
4	Average loan/GNI per capita	0.0457	−0.142	0.0528	1							
5	Women targeting	0.0415	−0.0176	−0.071	−0.1289	1						
6	Dummy rural market	−0.1972	0.151	−0.0026	0.1353	−0.0473	1					
7	Logarithm of assets	0.2187	−0.1801	−0.0584	0.1535	−0.0704	−0.1068	1				
8	MFI age	0.0453	−0.1474	0.2522	0.0335	−0.1223	−0.1168	0.2354	1			
9	Dummy international initiator	−0.1122	0.1181	−0.1766	−0.0309	0.2152	0.0139	0.0119	−0.2158	1		
10	Savings	−0.0334	−0.124	0.1656	0.0462	−0.0619	0.1002	0.2171	0.2726	−0.2033	1	
11	Dummy internal auditor	0.0605	0.0332	−0.0412	0.1247	−0.1898	0.0381	0.2663	0.1723	−0.0481	0.008	1

Table 3. Pooled probit regressions for international debt

	[1]	[2]	[3]
ROA	0.211	0.550	0.790
Operating expense ratio	0.0583	−0.0500	−0.0758
PAR30	**−1.192****	−0.854	−0.724
Average loan/GNI per capita	**0.173***	0.167	0.0778
Women targeting	**0.230****	0.127	0.107
Dummy rural market	**0.347****	**0.496*****	**0.442****
Logarithm of assets		−0.0374	−0.00259
MFI age		0.0110	0.0103
Dummy international initiator		**0.406*****	**0.374*****
Voluntary savings		**−0.453*****	**−0.618*****
Dummy internal auditor		**0.260****	**0.246****
HDI			−0.0367
Region dummies	No	No	Yes
Constant	0.274**	0.544	0.512
Pseudo-R^2	0.0222	0.0643	0.0757
Observations	667	597	597

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Notes:

Region dummies are included for Latin America, Africa, Eastern Europe and Central Asia,
Middle East and North Africa, and Asia.

A robustness check (unreported) has been conducted by running the same regressions using a logit model, yielding almost exactly the same results with similar pseudo-R^2.

Empirical results

Table 3 shows the general model for international debt, regardless of the type of debt. (Tables 3–5 are composed of the three mentioned regressions explained in the Appendix.) Column 1 tests the financial and social performance variables only, column 2 includes MFI control variables, while column 3 adds the country HDI and the regional dummies.

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Table 3 shows that four variables significantly explain an MFI's access to international debt: the orientation of MFIs toward rural areas, the presence of an international initiator, the presence of an internal auditor reporting to the Board and when the MFI doesn't mobilize voluntary savings. In addition, the coefficients of several performance variables have signs as expected: MFIs accessing international debt are those with higher return on assets, lower portfolios-at-risk, and those that focus on targeting women. The significant findings are interesting and of policy interest. Rural markets are interesting for international investors, but at the same time such investors prefer MFIs that professionalize and follow "best practices" (in this case by having an internal auditor reporting to the Board). The findings also show that MFIs with international initiators have easier access to international funds. Finally, MFIs that mobilize savings don't fund themselves internationally, probably because local deposits can be a cheap source of funds without exposing the MFI to foreign exchange risks. However, these general results do not tell us much about the relationship between the type of funding received and the performance of the MFI (H1a and H1b) as the effects could be very different from one type of funding to another. We therefore disentangle the international debt variable into two distinct variables: international commercial debt only and international subsidized debt only.[5]

Table 4 shows the regressions for international commercial debt.

Beginning with the relationship between access to commercial debt and financial performance (H2), our expectations are supported. Indeed, higher ROA, lower operating expense ratio, and lower PAR30 significantly increase the likelihood for an MFI to have international commercial debt. This finding is consistent with the notion that commercial investors target more robust and profitable MFIs (Goodman, 2004; Bogan, 2008). This also confirms the observation made by many that MIVs target the "niche" of financially profitable MFIs (De Schrevel *et al.*, 2009; Wiesner and Quien, 2010). Regarding social performance, we find a significant negative relationship between the presence of commercial funding and the targeting of women by the MFI. Thus, commercial MIVs do not consider reaching women a priority. The positive coefficient reported in Table 3 is thus driven totally by subsidized international debt (see Table 5). As for rural outreach, the coefficient remains positive but is only significant in one of the regressions. Results for

Table 4. Pooled probit regressions for international commercial debt

	[1]	[2]	[3]
ROA	**1.588****	1.212	**1.690****
Operating expense ratio	−0.0151	**−0.443***	**−0.976*****
PAR30	**−2.487*****	**−2.119*****	**−2.072****
Average loan/ GNI per capita	0.0568	−0.0444	−0.141
Women targeting	**−0.387*****	**−0.308****	**−0.276***
Dummy rural market	0.212	0.239	**0.492****
Logarithm of assets		**−0.114***	**−0.110***
MFI age		−0.00303	−0.00863
Dummy international initiator		0.162	0.164
Voluntary savings		**−0.665*****	**−0.921*****
Dummy internal auditor		**0.614*****	**0.621*****
HDI			0.0192
Region dummies			Yes
Constant	−0.396***	1.239	2.159**
Pseudo-R^2	0.0444	0.111	0.174
Observations	528	475	475

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

[5] MFIs with both types of debt have been left out of the sample for regressions in Tables 4 and 5, which explains the different *N* between Table 3 and Tables 4 and 5.

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Table 5. Pooled probit regressions for international subsidized debt

	[1]	[2]	[3]
ROA	−0.908	−0.345	−0.493
Operating expense ratio	0.111	0.243	**0.440***
PAR30	0.495	0.234	0.202
Average loan/ GNI per capita	0.0760	**0.147***	**0.201****
Women targeting	**0.544*****	**0.336*****	**0.310****
Dummy rural market	0.231	0.257	0.0332
Logarithm of assets		−0.0287	−0.0193
MFI age		**0.0184***	**0.0198****
Dummy international initiator		**0.285****	**0.319****
Voluntary savings		0.169	0.245
Dummy internal auditor		**−0.399*****	**−0.418*****
HDI			−0.656
Region dummies			Yes
Constant	−0.860***	−0.630	−0.807
Pseudo-R^2	0.0467	0.0620	0.0920
Observations	528	475	475

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

voluntary savings and internal auditor are upheld when only commercial debt is considered (Tables 3 and 4 yield similar significant results). It should also be noted that those MFIs accessing commercial debt are significantly smaller than other MFIs. Finally, we see that the dummy for the international initiator is no longer significant in the subsample where only commercial international debt is considered. Thus, the international initiator is first and foremost helping the MFI to access subsidized debt (see Table 5) and not commercial debt.

Table 5 shows the regressions for international subsidized debt.

The differences between Tables 4 and 5 are striking. While commercial international debt goes to MFIs with solid financial performance (high ROA, low operating expense ratio, and low portfolio-at-risk), subsidized international debt goes to MFIs with weaker ROA, higher costs, and higher portfolio-at-risk.[6] Moreover, contrary to commercial debt, subsidized debt is associated with MFIs targeting women. We also see that subsidized debt goes to older and internationally initiated MFIs that don't have internal auditors reporting to the Board. Not surprisingly, the finding that voluntary savings now has a positive coefficient indicates that when inexpensive funding is available also, MFIs that mobilize savings are interested. A surprising result is the difference between Tables 4 and 5 when it comes to average loan. Subsidized debt is significantly associated with higher average loan while the coefficient signs for commercial debt (Table 4) are negative (in the models including controls). The most probable reason for this is that lending to the poor can indeed be good business for the MFI — low average loans and strong financial performance can be combined (Mersland and Strøm, 2010) — and that MIVs providing subsidized debt are most concerned about supporting weak MFIs, especially when these reach out to women. This could mean that the targeting of women, and not necessarily the targeting of the poor, is what attracts subsidies in microfinance. Moreover, it could mean that the way subsidies are distributed in the microfinance industry should be reconsidered.

At first glimpse the results for the rural dummy are strange. While this variable shows strong significant results in Table 3, only one of the regressions in Tables 4 and 5 gives a significant association between access to international debt and outreach to rural markets. However, additional analyses (unreported) show that the significant findings reported in Table 3 to some extent are driven by

[6] Though the coefficients for the financial variables in Table 5 are not significant, the differences between the results in Tables 4 and 5 allow our interpretation.

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those MFIs that have taken both commercial and subsidized debt (these MFIs are, as mentioned, left out from the analyses presented in Tables 4 and 5). Moreover, all regressions in Tables 4 and 5 show positive coefficient signs, indicating that international lenders do indeed care for rural outreach, and probably the commercial lenders prefer rural markets even more than subsidized lenders (significant result in the full model in Table 4).

In sum, this analysis suggests that even if the international funding to MFIs comes from socially responsible investors, we need to distinguish between commercial and subsidized funding to understand MIV practices. Commercial funding seems clearly to be driven by financial performance and the level of professionalization of MFIs, while the special targeting of women is not a priority. This seems to match the *negative screening* approach — microfinance is considered a social investment *per se* so MIVs offering commercial debt can concentrate on analyzing the level of professionalization and financial performance of the MFI. On the other hand, subsidized funding seems clearly to target institutions focusing on women without prioritizing level of professionalization or financial performance. Thus, subsidized providers of debt seem to follow a *positive approach* but mainly limited to the targeting of women.

Conclusion

Starting with the statement that international funders of microfinance claim to pursue both financial and social bottom lines through their investments, this article tests what type of characteristics and performance in an MFI actually attracts international investments, segmented into commercial and subsidized debt. The overall conclusion is that commercial funding seems to match the negative screening approach as it is driven mainly by financial performance and the level of professionalization of the MFIs, while subsidized funding is driven mainly by the targeting of women and not by the level of professionalization or financial performance of the MFI. Thus, subsidized loan providers seem to follow a positive approach in their investments.

By applying financial criteria to select MFIs, commercial MIVs seem to consider those institutions *per se* as part of the social investment field. From a pragmatic point of view this seems reasonable. After all, even if an MFI doesn't specifically focus on women, normally half of its customers will in any case be women (D'Espallier *et al.*, 2011). As a result, the commercial MIVs can concentrate on identifying MFIs that can demonstrate a good level of professionalization combined with sound financial results and efficient operations.

Two important policy implications can be drawn from this article. First, MFIs should professionalize their operations and assure good financial performance in order to attract international commercial funding. While Mersland and Strøm (2009) indicate that having an internal auditor reporting to the Board is one of the few governance mechanisms that can improve an MFI's financial performance, we now show that it is also associated with better access to commercial funding. Moreover, while Mersland and Strøm (2010) show that MFIs with the most efficient operations are those with the best potential to reach poor customers, we now find that such MFIs are also those attracting commercial funding.

Second, MIVs providing subsidized funding need to rethink their targeting strategy. Even though the subsidized MFIs target women to a larger extent than non-subsidized MFIs, it may easily lead to a dependency trap, clued by the fact that older MFIs still receive subsidies as found in the article. Moreover, it looks like the subsidized funds go to MFIs with good international connections instead of MFIs with professional and efficient operations. Our results should motivate researchers to study whether MIVs providing subsidized funding are hindering a needed professionalization of the industry, and whether the targeting of women has become an excuse for inefficient operations.

This article is only a first step in understanding the drivers of international microfinance investments, and it has some limitations which should motivate more research. First, rough dummies are used to distinguish between MFIs

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with or without subsidized or commercial international debt. More information on the relative importance of each debt type, as well as more information about the individual MIVs, could potentially improve considerably the analyses. Thus, researchers could build a dataset where they combine variables from MIVs and MFIs. Second, we should be cautious in the way we measure social performance. Even though the three variables applied in this study (average loan size, targeting women, and rural outreach) are widely used in academic and practitioner studies, they are still only rough proxies of social performance. Social performance has a more qualitative nature and embraces many other aspects of the MFI's activity, such as social responsibility and the interactions with various stakeholders of the MFI. Thus, how investors actually assess social performance in MFIs remains to a large extent a "black box" for future research to open. In addition, researchers should assess to what extent international investors consider operational efficiency to be a social variable as this can potentially drive down interest rates. Finally, the causality direction could be reversed for variables such as, for example, the internal auditor where an MIV can demand that MFIs hire an internal auditor as a condition of their funding. Event studies where *ex-ante* and *ex-post* performance is compared in relation to the installation of new governance mechanisms, like an internal auditor, could bring interesting new knowledge.

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Appendix

Here are the three regressions corresponding to Tables 3, 4, and 5, respectively:

(1) $\Pr(\textit{International debt} = 1) = \Phi\ (\beta_0 + \beta_1\ \textit{ROA} + \beta_2\ \textit{Opexp} + \beta_3\ \textit{Par30} + \beta_4\ \textit{Avloan} + \beta_5\ \textit{dmWomen} + \beta_6\ \textit{dmrural} + \beta_7\ \textit{Size} + \beta_8\ \textit{Age} + \beta_9\ \textit{dmIntInit} + \beta_{10}\ \textit{dmSavings} + \beta_{11}\ \textit{dmaudit} + \beta_{12}\ \textit{HDI} + \beta_{13}\ \textit{dmLatAm} + \beta_{14}\ \textit{dmMena} + \beta_{15}\ \textit{dmEECA} + \beta_{16}\ \textit{dmASIA})$

where Φ is the cumulative normal distribution.

(2) $\Pr(\textit{International commercial debt} = 1) = \Phi\ (\beta_0 +$ same variables)

(3) $\Pr(\textit{International subsidized debt} = 1) = \Phi\ (\beta_0 +$ same variables)

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