



What Type of Microfinance Institutions Supply Savings Products?

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Supply Savings Products?*

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Abstract

Recent evidence shows that the poor desperately need access to savings products. But despite this general consensus, microfinance institutions (MFIs) offering savings products are still under-studied. Using random-effect probit estimation on a dataset of 722 MFIs active over the 2005-2010 period, we try to identify the characteristics of those that collect voluntary savings. Our results suggest that these MFIs have received fewer subsidies than their credit-only counterparts. In other words, subsidies would crowd out micro-savings products, suggesting that donors generate negative externalities on product diversification.

1. Introduction

The poor find it hard to save, chiefly because resource scarcity often combines perversely with behavioral biases, such as time-inconsistency (Laureti and Szafarz, 2014). Security issues and emergency expenditures are additional threats to the poor peoples' savings. But contrary to common belief, recent evidence shows that poor households do actively save (Collins *et al.*, 2009). Moreover, access to savings accounts has notable positive impacts. It enhances savings (Ashraf *et al.*, 2006), and increases both household expenditures (Brune *et al.*, 2013) and female business investment (Dupas and Robinson, 2013a). It also promotes female empowerment (Ashraf *et al.*, 2010; Guérin, 2006), and helps people to cope with health emergencies (Dupas and Robinson, 2013b). Robinson (2001) claims that access to savings products could even be more important than access to credit. Meanwhile, the supply side of these products is still understudied. This paper aims to fill that gap.

Micro-savings are often considered as the “forgotten half” of microfinance (Armendariz and Morduch, 2010). However, regulation is a major hurdle to the development of formal deposit services. To protect the clients of microfinance services, regulators tend to make it very costly for MFIs to provide micro-savings deposits, which are accessible only to a reduced fraction of the industry (Christen *et al.*, 2003). Micro-savings deposits come in two different forms: compulsory and voluntary. Compulsory savings constitute the typical “hidden collateral” of microcredit (Armendariz, 2011). In contrast, voluntary savings products are demand-driven. This paper runs random-effect probit estimations in order to compare the characteristics of MFIs that supply voluntary savings deposits with those that do not.

2. Regression Analysis

Our data, which cover the 2005-2010 period, are retrieved from the Microfinance Information Exchange (MIX), a non-profit organization that facilitates access to quality data in the microfinance sector. Contributing MFIs serve a large proportion of the worldwide client base (Cull *et al.*, 2009). The major strength of the MIX dataset¹ consists of various adjustments that ease comparability across MFIs located in countries with different accounting standards. Our sample is made up of 722 MFIs (and 1,853 MFI-year observation points). Only MFIs with at least two years of data on voluntary savings were included.

Descriptive statistics (not provided here) suggest that MFIs taking voluntary savings have lower ratios of donated equity to total assets and of borrowings to total liabilities. Moreover, MFIs taking savings are not significantly different in terms of financial performance (return on assets and return on equity) and perform worse in social terms (poverty outreach and percentage of women served).

The regression analysis is intended to identify the characteristics of MFIs taking voluntary savings. We run the following probit regression with random effects:

$$\Pr(MFI_i \text{ takes voluntary savings at time } t | X_{it-1}) = \Phi(X_{it-1}\beta + v_i),$$

where the dependent variable is a dummy taking value 1 if the amount of voluntary savings taken by an MFI is positive, and 0 otherwise. Vector X_{it-1} includes the explanatory variables lagged by one year and the constant term. We lag the explanatory variables to mitigate the risk of reverse causality. Function $\Phi(\cdot)$ represents the normal cumulative distribution function, and β is the vector of parameters to be estimated. The v_i 's are the MFI-specific random effects assumed to be iid normally distributed with mean 0 and variance σ_v^2 .

¹ It is used also by Cull *et al.* (2009) and D'Espallier *et al.* (2013).

Columns (1) to (3) in Table 1 give the full-sample results for three model specifications. Running the regression analysis on the full sample implicitly relies on the assumption that all MFIs can decide whether or not to collect savings. In practice, however, several constraints, chiefly regulatory restrictions, impede access to the deposit market. To acknowledge for this reality and perform robustness checks, we again run the regressions on a sample restricted to MFIs that have already shown their ability to switch from savings-taking to non-savings-taking, or vice versa. In our original sample, 14% of MFIs switched at least once during the observation period.² The restricted sample is made of 103 MFIs and 277 MFI-year observations. The corresponding results are given in columns (4) to (6) in Table 1.

To avoid multicollinearity, the regressions include only one variable for financial performance, the return on assets (ROA). By contrast, social performance is captured by three variables: the number of active borrowers, the average loan balance per borrower divided by gross national income per capita, and the percentage of female borrowers. In specifications (2)-(3) and (5)-(6), we include interactions of social performance with non-profit status to acknowledge the possibility that social performance is driven by the institutions' non-profit mission. We use donated equity as a proxy for the stock of subsidies that MFIs receive. Following Bogan (2012), we assess subsidization by dividing our subsidy indicator by total assets.

The left side of Table 1 indicates that the MFIs collecting voluntary savings are more mature than the others. This is unsurprising since the supply of micro-savings is associated with compliance with regulatory constraints, which is barely accessible to young MFIs. Likewise, savings collection is more likely in MFIs with a for-profit status, in credit unions, and in cooperatives. Borrowings and donated equity are smaller for savings-taking MFIs than for credit-

² Most switches correspond to the introduction of voluntary deposits. However, 3% of MFIs have made the opposite move, while 2.8% of MFIs have switched at least twice. Most of the MFIs that switched are registered as banks.

only MFIs. Taking voluntary savings is not related to financial performance.³ In line with Hartarska and Nadolnyak (2007), we find that MFIs serving larger numbers of borrowers are more likely to collect voluntary savings. Although savings deposits are also more likely to be taken by MFIs granting relatively larger loans, regression (3) shows that this effect is mitigated in non-profits. Interestingly, the right side of Table 1 reveals that the only results that survive the sample restriction concerns the negative impacts of both donated equity and borrowings on taking voluntary savings.⁴ These findings suggest that subsidies crowd out micro-savings. If so, subsidies would hamper not only product diversification in microfinance, but also the positive impact of micro-savings that is advocated by several studies (Karlan *et al.*, 2014).

3. Conclusion

Our preliminary findings suggest that subsidies to MFIs can crowd out the collection of voluntary savings, and therefore embed a perverse incentive scheme. A possible mechanism behind the detected effect may stem from the softening of the budget constraint. MFIs receiving subsidies have only weak incentives to finance their loans from savings deposits.

Further work is needed to assess the robustness of these results. In particular, one could try to explain the volume, rather than the existence, of voluntary savings collected by MFIs.⁵ In any event, the potential policy implications are far from negligible since subsidization is meant to improve social performance, not hamper it. Donors sensitive to this argument could tilt their donations in favor of MFIs collecting savings.

³ Robustness checks (not provided here) involving alternative measures of financial performance (return on equity and operational self-sufficiency) confirm this result.

⁴ Possibly, the non-significance of some loadings is driven by the reduction in sample size.

⁵ Caudill *et al.* (2009) show that MFIs with larger deposits are more cost efficient.

Table 1: Regression Results

	(1)	(2)	(3)	(4)	(5)	(6)
	Taking voluntary savings					
Explanatory variables in t-1	Full sample			Restricted sample		
Age (in years)	0.0775*** (0.0258)	0.0744*** (0.0262)	0.0780*** (0.0263)	0.0356 (0.0267)	0.00949 (0.0271)	0.0340 (0.0268)
Non-profit	-2.413*** (0.457)	-2.622*** (0.481)	-1.843*** (0.509)	-0.0680 (0.387)	-0.592 (0.447)	0.132 (0.502)
Credit union/Cooperative	7.558*** (1.231)	7.772*** (1.225)	8.035*** (1.288)	1.862 (1.367)	2.128 (1.379)	1.953 (1.394)
Borrowings as % of liabilities	-4.775*** (0.553)	-4.815*** (0.559)	-4.822*** (0.559)	-1.234** (0.612)	-1.333** (0.618)	-1.233** (0.616)
Donated equity as % of assets	-4.555*** (0.948)	-4.528*** (0.960)	-4.575*** (0.966)	-3.248*** (0.945)	-3.127*** (0.955)	-3.244*** (0.947)
Debt-to-equity ratio	0.00185 (0.00488)	0.00199 (0.00497)	0.00188 (0.00483)	0.00528 (0.00804)	0.00724 (0.00810)	0.00549 (0.00809)
Gross loan portfolio as % of assets	-1.326 (1.013)	-1.342 (1.025)	-1.214 (1.030)	0.530 (1.149)	0.611 (1.164)	0.553 (1.155)
Operating expense ratio	-3.219 (2.579)	-3.433 (2.615)	-3.289 (2.586)	0.0690 (2.853)	-0.0319 (2.887)	-0.135 (2.892)
PaR 30	-1.341 (2.412)	-1.354 (2.434)	-0.873 (2.372)	-1.119 (2.638)	-1.182 (2.658)	-0.929 (2.657)
Return on assets (ROA)	-0.136 (2.420)	-0.241 (2.447)	-0.0173 (2.397)	-0.658 (2.974)	-0.731 (3.000)	-0.661 (2.989)
Number of active borrowers	9.56e-07* (5.00e-07)	2.21e-07 (6.68e-07)	9.92e-07** (5.01e-07)	-7.40e-07 (9.17e-07)	-1.00e-06 (1.05e-06)	-7.04e-07 (9.13e-07)
Number of active borrowers*Non-profit		2.90e-06 (2.23e-06)			1.21e-05** (6.00e-06)	
Average loan balance per borrower/GNI per capita	0.577*** (0.216)	0.590*** (0.219)	1.305*** (0.416)	0.610 (0.474)	0.573 (0.474)	0.759 (0.554)
Average loan balance per borrower/GNI per capita*Non-profit			-1.188** (0.489)			-0.539 (0.835)
Percent of female borrowers	-0.608 (0.770)	-0.598 (0.778)	-0.663 (0.784)	-0.987 (0.947)	-0.807 (0.947)	-0.972 (0.949)
Yield on gross portfolio (real)	-2.626 (1.654)	-2.644 (1.671)	-2.435 (1.671)	-2.178 (1.829)	-2.341 (1.849)	-2.090 (1.841)
Region dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.949*** (1.171)	3.963*** (1.189)	3.464*** (1.213)	1.196 (1.261)	1.002 (1.284)	1.106 (1.281)
Panel level variance component	2.333*** (0.209)	2.372*** (0.205)	2.403*** (0.201)	0.235 (0.527)	0.224 (0.518)	0.248 (0.526)
Observations	1,849	1,849	1,849	277	277	277
Number of MFIs	721	721	721	103	103	103
Log likelihood	-370	-369	-367	-128	-125	-128

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

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