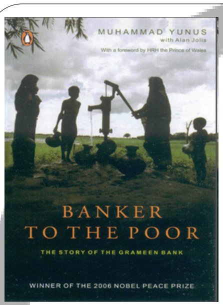

Equity-Infused Microfinance: A Collaborative Success

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"Microfinance Still Hums, Despite Global Financial Crisis"
--Times Magazine

Introduction

Microfinance provides small-scale financial services to those who have been marginalized by the mainstream, commercial banking sector: the poor. Loans tend to fall below $50 and rarely exceed $200. By providing a means of livelihood and self-employment, microfinance is designed as a poverty alleviation tool.

In the 1970s, Muhammad Yunus ignited the microfinance revolution with his Grameen Bank, focusing on the needs and credit-worthy aspects of the poor. 2005 was recognized as the International Year of Microcredit and they were jointly granted the 2006 Nobel Peace Prize. Innovative techniques developed by microfinance institutions (MFI) in order to mitigate the high risk of offering capital to no-collateral clients include:

- Lending to women because of their tie to the household and history of repayment
- Peer monitoring
- Public repayment
- Progressive lending

Nonetheless, MFIs are still very dependent on subsidies and government grants. In times of economic crisis, these funds clearly cannot be depended upon. Furthermore, research suggests that the poor take loans and the ability to establish credit more seriously, leading to increased creditworthiness. This suggests that investors should flock to the poor and that with enough capital and guidance, an MFI could be self-sustainable and achieve its goal of empowering the poor. An important measurement that is used in the microfinance field to gauge the degree to which an MFI can maintain itself without outside funds is the subsidy dependence index (SDI) proposed by Jacob Yaron (1997):

$$\boxed{SDI = \frac{\text{outside funds received by an MFI}}{\text{Interest income per average loan}}}$$

Because of the high repayment rates achieved by MFIs, their clients themselves have proved themselves creditworthy. New forms of capital are needed to fund the immense growth in the industry. I hypothesize that an equity investment along the lines of venture capital would align the incentives of the MFI, as joint owners collaborating with maximum effort.

Theoretical Background

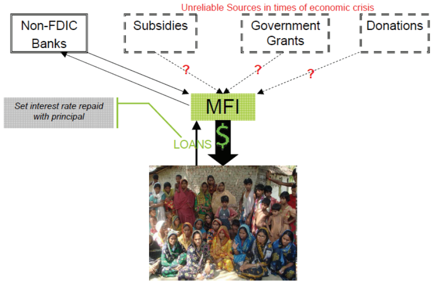
Research shows that small businesses rely on both equity and debt financing. Each form offers different incentives to the small-business owner.

Debt:
- Commitment, tight reign on managerial agency costs
- *Insurance*-based, with a fixed coupon payment
- *Threat of bankruptcy*
- Reduced free cash flow, which cuts overspending
- Monitoring by creditors
- Bank charged with a lot of information to assess risk, payments, timing
- Collateral commitments, restrictive covenants
- Short maturities to sort firm types and restrain from risky behavior

Equity:
- Owners monitor the managers, decreasing informational asymmetry
- *Incentive*-based: growth story with potential for increased dividends for all owner participants
- *Threat of losing all*
- Risky to an owner: exit only upon achieving sustainable profits
- Owner can exert control over management with the threat to sell

Entrepreneurs funded by venture-capital gain more than an additional line of capital. The business experience offered by the new investor with actual "skin in the game" from the part-ownership can propel the small business to greater heights. While private equity has been invested in MFIs, it should be extended to the actual clients of the MFIs- developing small businesses. With the low starting status, their return on equity proves to be much higher.

Past Microfinance Organizations



Model

The original SDI developed by Jacob Yaron can be augmented to include a provision for equity income:

$$SDI = \frac{(\text{Adjustments} + \text{Donations} - \text{Net Income})}{\text{Loan Revenue}}$$

$$= \frac{(\text{Adjustments} + \text{Donations} - (\text{Total Revenue-Expenses}))}{\text{Loan Revenue}}$$

As loans are the primary business of the MFI, TR~LR

$$\boxed{SDI = \frac{\text{Adjustments} + \text{Donations} + \text{Expenses}}{L(1+r)(1-d) + V\,\Pi(1-p)} - 1}$$

- Total capital provided, T = L+V
- h = proportion of total capital held as debt = L/(L+V)
- j = (1-h) = proportion of total capital held as equity = V/(L+V), where h + j = 1.00

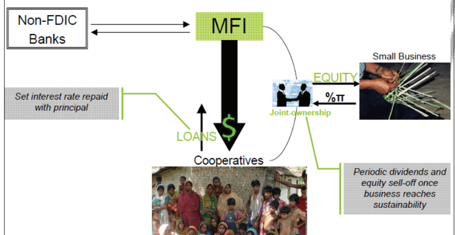
$$SDI = \frac{\text{Adjustments} + \text{Donations} + \text{Expenses}}{T[h(1+r)(1-d) + (1-h)\,\Pi\,(1-p)]} - 1$$

Distributing the T symbol in the denominator, and substituting e for (1-d) and z for (1-p) the SDI becomes:

$$SDI = \frac{\text{Adjustments} + \text{Donations} + \text{Expenses}}{L\,(1+r)\,(e) + T\,\Pi\,z - L\,\Pi\,z} - 1$$

From this point, I differentiate to find the optimal capitalization structure to create the minimum SDI, or greatest degree of independence. The model predicts that the equity-infused microfinance paradigm will be successful in reducing the SDI, specifically in areas where the desire for ownership and control is sufficiently low. This may particularly be the case for populations which exhibit a high degree of group and community activities. In areas already serviced by traditional group-based microfinance services, this may preserve such feelings of communality rather than fostering feelings of ownership and control. Thus, the equity-infused microfinance model appears to both supply those in poverty with needed financial alternatives as well as contribute to the sustainability and reduction of dependence on subsidies within the microfinance sector.

Future Microfinance Organizations



Conclusions

This thesis aims to identify the effect of infusing equity into the financial capital offerings of an MFI, specifically with respect to sustainability. I model the SDI with an additional equity portion and use derivatives to find the optimal financing structure at the minimum SDI, the point of optimal self-sufficiency. The model proves potential success in reducing the SDI by infusing equity when the drawback of decreased ownership is less of an issue for the small-business owner. Many of the poor small-business owners in developing nations fit this description because of their immense economic needs and less viable alternatives. They are less likely to be concerned with decreased ownership and appear to instead encourage third-party advice and investment. In this way, once offered an equity investment in their small-business, the entrepreneurs find that their capital needs are met and self-sustainability is much closer.

It follows that with this newfound self-sustainability at the MFI and client level, the MFI can give more loans. Lower default rates and an improved cost of capital are achieved by accurately targeting both the capital and managerial needs of the small business developers. This enables the MFI to reach more impoverished, which subsequently inspires other poor people to work because of the feasibility of such success. This is the exact hope that the American Dream offered the United States- motivation and communal support unveil the land of opportunity before each person. The mission of microfinance is to guide the poor into changing their own lives by working hard, developing efficient businesses and funding their own rise out of poverty. The increased capital and sustainability that an equity offering adds to an MFI brings this mission into fruition.

Key

L	total loan volume outstanding
r	prevailing market interest rate
d	Default rate on loan, *(1-d)=e*
I	Income from other investments
C	Costs associated with administering the loan
S	Implicit subsidies, outside funds
V	Proportion of small-business equity owned by MFI
Π	Small business profit
p	Probability of default on equity repayment, *(1-p)=z*
T	Total capital provided, *L+V*
h	proportion of total capital held as debt
j	proportion of total capital held as equity

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