A Framework for Balancing MFI Regulation

Adnan M. S. Fakir

Abstract—**Private investments for Microfinance are a major fuel for its growth. Inadvertently, the role of the MFI regulatory body in inducing private investments remains a conspicuous issue. The paper aims to provide basic building blocks for a framework based on a continuous spectrum of light and heavy regulatory laws that can attract optimal levels of private investment, for both non-profit and for-profit MFIs.**

Keywords—Government regulation of MFI, Commercialinvestors in microfinance, MFI.

I. Introduction

In November 2004, when Pierre Omidyar, founder of eBay met with Mohammad Yunusat the home of venture capitalist John Doerrin San Francisco for a weekend session, the evolving concept of microfinance from a non-profit to a for-profit market was one to quickly surface. While microfinance initially started off purely as social investments with the goal of alleviating poverty, most nongovernmental organizations (NGOs) who were conducting microcredit operations were donations and subsidy dependent which brought about issues of financial sustainability. Over time with beneficiaries successfully demonstrating their capability to give back loans with high interests, profit orientedmicrofinance institutions (MFIs) started entering the market. As Connie Bruck, writer at The New Yorker, puts it, "this conflict, between pure do-gooders and profit-minded do-gooders, has come to define the current debate in the microfinance world." Keeping this in mind, Omidyar gave a hundred million dollars not to Grameen Foundation but to Tufts University, the principal of which was to be dedicated "in investments that would promote microfinance's commercialization."

While many microfinance private equity investments have sprung up over the past decade, the bulk of it comes from investors with a social orientation (Reille and Forster, 2008). There still remains much scope in attracting profit oriented commercial investors (Rosenberg, Gonzalez and Narain, 2009).Because only legal for-profit entities can fully distribute its profits to its investors, commercial investors have a stronger affinity towards for-profit MFIs.

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This, however, in no way undermines non-profit MFIs. As Cull et al. (2009) shows, commercial for-profit MFIs tend to reach the low income people but not the poorest; they incur lower costs per dollar lent as a result of giving out larger loans per borrower, but lend to fewer women when compared to non-profits. They do, however, tend to have greater profitability and thus attract more commercial investors.

The formative example for a for-profit bank engaged in microfinance is Banco Compartamos, the largest lender in Mexico.They raised a lot of commotion with their group lending at 110% APR (Angelucci, Karlan and Zinman, 2013) while maintaining a default rate of only 1% (Karlan and Zinman, 2013).Between 2000 and 2013Compartamos grew from 60,000 poor customers to over 2.5 million clients. On April 19th 2007, Compartamos became the first Latin American MFI to offer equity through an IPO selling 29.9 percent of its stock and raising USD 467 million in private investments (Accion Insight, 2007) while enriching wealthy investors with returns on equity of 53%. While Mohammad Yunus commented, "They're absolutely on the wrong track. Their priorities are screwed up," Campartamos successfully provided the impetus to increase number of commercial investors looking to MFIs (Businessweek, 2007).

Not all governments will allow such high interest levels in microfinance activities based on ethical, egalitatian and developmental grounds[1] and the respective level of regulation in each country naturally influences investment decisions. Reinke (2005) and Druschel (2005) both mention that while private investors do look for profitability in an MFI, the investors' confidence and ability to invest however is dependent on the level of government regulation. This can in turn be ranked as a spectrum from a light regulatory regime to a heavy regulatory regime based on country-specific identifiers (Druschel, 2005).

A light regulatory regime would constitute little or defunct monitoring, no impediment to MFIs' ability to pledge its loan portfolio as collateral, unclear legal status or lack of industry protection. On the other hand a heavy regulatory regime would encompass controls on loan sizes, interest rates, forms of capital investment and ownership, have reserve requirements and impose tax burdens (Druschel, 2005). Either extreme of the spectrum is non-optimal. Leaning towards light regulations can lead to moral hazard inducing risky MFI activity lowering investor confidence. On the other hand preference towards heavy regulations can limit MFI profitability and deter commercial investors. Governments thus require achieving a balance, somewhere in the middle of

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[1]Such high levels of interest is often argued to do more harm than good although in a clustered randomized trial by Angelucci, Karlan and Zinman (2013), they find little evidence.

the spectrum, that ensures enough MFI profitability to encourage investments.

The rest of the paper is organized as follows: Section II introduces the characteristics of three players: commercial investors, the MFI regulatory body and the type of MFIs. Section III builds an intuitive theoretical model of balancing regulatory oversight and section IV concludes with an impetus towards empirical study.

II. Identifying the Players

The objective is to determine a balance of MFI regulation for optimal commercial investments in MFI. There are three principle actors: the commercial investor, the MFI regulatory body and the MFIs.

A. *Commercial Investors*

Among the investment selection criteria, the riskiness of the project being invested in, in our case the MFI activities, is one of the key factors. Stiglitz and Weiss (1981), in their seminal paper, showed that, the interest rate charged by the bank to its borrowers can be a screening device in selecting a specific pool of borrowers. Higher interest rates induce its borrowers to undertake riskier projects with a lower probability of success but with higher payoffs when successful. Similarly when investing in MFIs, the investor can use its return rate as a screening device to elicit a certain pool of MFIs.

This is possible because different MFIs have different levels of profitability, associated with their level of risk, which determines their ability to return on the investment. When the investors expect a high return rate, they screen off MFIs with lower profitability. However expecting an excessively high return rate also means investing in a pool of high risk MFIs. Therefore, it is in the interest of the investor to choose an MFI with a level of riskiness that maximizes their expected returns. In other words, there is an equilibrium e* level of return rate which maximizes the level of expected returns to the investor, as depicted in figure 01.
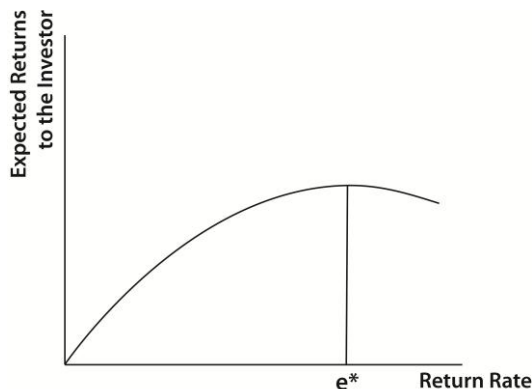

Figure 01: The expected return to the investor is maximized at e*

Let us classify commercial investors into two standard categories: the risky investor looking for high return with riskier investments and the risk-averse investor looking for lower return with safer investments.

B. *MFI Regulatory Body*

Depending on their objectives, the MFI Regulatory Body decides to employ a light or heavy regulatory regime, or somewhere in between, influencing the investment environment.

The regulatory body, composed of several government officials, itself can be biased towards to certain regime depending on their belief. For simplicity, let us categorize them into two: the regulatory body preferring heavy regulation and the regulatory body preferring light regulation. For both categories, they can still employ regulation at any point in the spectrum.

Once we make this simplification, using a simple game tree, it is intuitively easy to see what influences a regulatory body to lean towards either end of the spectrum. The rules of the game are as follows:

i. A regulatory body preferring heavy regulation will have greater utility if a heavy regulation regime is employed. Similarly, a regulatory body preferring light regulation will have greater utility if a light regulation regime is employed.

ii. The regulatory body will have greater utility if investors invest as opposed to not investing.

iii. The probability of investment is greater from risky investors if a light regulation regime is employed. Similarly, the probability of investment is greater from risk-averse investors if a heavy regulation regime is employed.

iv. Risky investors will have greater utility investing in a light regulatory regime than a heavy regulatory regime. Similarly, risk-averse investors will have greater utility investing in a heavy regulatory regime than a light regulatory regime.

Figure 02 provides one out of the four possible iterations of the game tree: the players are (1) a regulatory body preferring heavy regulation, and (2) a risky investor. The payoffs have been assigned based on the game rules described above.

Given,
Pr_{IL} = Probability of investor investing in a light regime
Pr_{IH} = Probability of investor investing in a heavy regime
g_L = Payoff to regulatory body if investor invests in a light regime
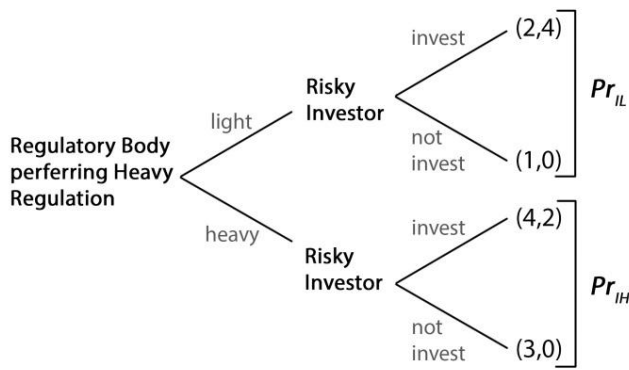g_H = Payoff to regulatory body if investor invests in a heavy regime

Figure 02: Game Tree for a regulatory body preferring heavy regulation and a risky investor.

Figure 03: Simultaneous version of game depicted in figure 02.

Using backward induction,if $Pr_{IL} = Pr_{IH} = 1$, it is easy to see that with the given payoffs the game will end in a heavy regulatory regime and with investment.

However as per our game rule (iii), for a risky investor, $Pr_{IL} > Pr_{IH}$. Therefore, it can be said that a regulatory body preferring heavy regulation will always choose a heavy regulation regime as long as,

$$g_H \geq \frac{g_L \times Pr_{IL}}{Pr_{IH}}$$

and will choose a light regulation regime only if,

$$g_H < \frac{g_L \times Pr_{IL}}{Pr_{IH}}$$

Similar analysis can be extended to the other three iterations of the game.

A simplified regulatory body's decision, who wants to induce commercial investments in MFIs, to employ a regime thus depends on Pr_{IL}, Pr_{IH} and the ratio of g_L/g_H which tells us how much a regulatory body prefers a light regime over a heavy regime.

An important aspect to note here is the issue of causality; the sequential game denotes that the regulatory body is the first player and the investor moves second. However in many countries the regulatory body is revising their already employed regulation as commercial investors express interest. Thus the moves played by the investors also influence the governing body. This issue of simultaneity can be treated as a simultaneous game.

Figure 03 shows that the simultaneous version of the game also leads to the same result and subsequently the same analysis can be applied to all iterations of the game.

C. Types of MFIs

The two types of MFI under consideration are non-profits and for-profits. Due to the basic difference in objectives and ideology of these two categories of MFIs, some differences in terms of their risk undertaking and profitability naturally arise.

Defining i to be the level of light regulation, as i increases, the level of risk undertaken by an MFI also increases. Thus let us define the riskiness of an MFI, $R(i)$, a function of the level of regulation. Assuming that the poor have a threshold up to which they are able to repay interest rates, up to the threshold $R'(i) > 0 \; and \; R''(i) > 0$.

This increasing rate of risk undertaking is best explained by Kurzweil's Law of accelerating through loops of positive feedback returns (Kurzweil, 2004). As i increases, the MFIs start charging higher interest rates and gets positive results, due to the borrowers' capability to pay high interests rates. As regulation gets even lighter, the positive results starts to have a compounding positive feedback effect and the MFIs increase their interest rates at an increasing rate.

However, after the threshold, the proportion of defaulters start increasing, reaching a level that the marginal returns to the MFI starts falling. The MFIs at this point will reduce risk undertaking, increasing at a diminishing rate, hence after the threshold $R'(i) > 0 \; and \; R''(i) < 0$.

Let us note the level of risk that induces the interest rate such that the marginal returns to the MFI are zero, or profit is maximized, as $R(ceiling)$. The MFIs will not go beyond this level of risk.

Another aspect to note here is that $R(i)$ is likely to be different for non-profit and for-profit MFIs. Driven by profit motives the for-profits will lean towards riskier activities with lighter regulation. This can be larger loan sizes or shorter term loans etc. This gives the for-profits a steeper slope than the non-profits reaching the ceiling much earlier. The non-profits constrained by social values, egalitatian and developmental ideology generally trek a more risk-averse behavior.

III. Balancing Regulatory Oversight

So how much should the government regulate MFIs? Understanding that requires us to put together the characteristics of the three players discussed above. Figure 04 shows this given that,

$R(i)_F$ = Riskiness function of a for-profit MFI.
$R(i)_N$ = Riskiness function of a non-profit MFI.
$P(i,r)_F$ =Profit function of a for-profit MFI.
$P(i,r)_N$ =Profit function of a non-profit MFI.
$R(ceiling)$ = Maximum risk a MFI will undertake.
$P(e*)$ =Minimum profit threshold for investors.

The top graph of Figure 04 shows MFIs' risk relationship with regulation as discussed above. The bottom graph connects this with the profit functions for the respective MFIs, which are also functions of regulatory intensity and the level of risk undertaken.

As i increases the MFI engages in riskier lending practices increasing its profit. It can also attract more borrowers by providing larger loans and shorter term loans while charging higher interest rates. The sum results in increasing returns. However, as the MFI expands, gradually the marginal number of borrowers the MFI attracts starts falling, which coupled with increased defaulters, is indicative of decreasing returns. This continues until it reaches a maximum when marginal returns to the MFI are zero. Therefore, $P'(i,r) > 0 \ and \ P''(i,r) > 0$ until an inflection point after which $P''(i,r) < 0$.

Notice that this model advocates two separate regulation levels for the two types of MFIs. The level of regulation at which for-profit MFIs maximize profits is denoted as i_F* and the level of regulation at which non-profit MFIs maximize profits is denoted as $i_{NF}*$. With known profit functions, one can simply equate $P'(i,r) = 0$ to find the respective levels.

It is important to note that at i_F* and $i_{NF}*$, the MFIs are likely to have high default rates as well as high interest rates. Therefore, it is recommended, especially for light regulatory regimes, not to regulate at these levels but rather to take them as the maximum end of the light regulation spectrum for each of the categories of MFIs. Since profit falls after these levels, rational MFIs themselves will not engage in any riskier activities, should regulation be further lightened.

On the other hand, the maximum end of the heavy regulation spectrum should be taken from the expected return rate of the commercial investors. The minimum profit required to satisfy the given e* return rate is denoted by $P(e*)$. This specific e* should ideally be the average for both risky and risk-averse investors. Alternatively, if the policy is to attract risky investors it can simply be the average of their preferences, and so forth if the policy targets risk-averse investors.
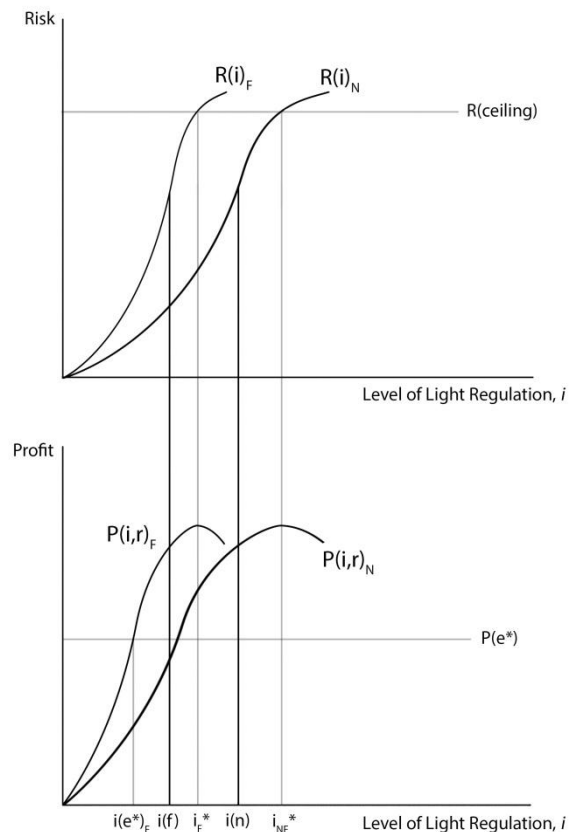

Figure 04: Balancing MFI Regulation.

This maximum level of heavy regulation (or conversely, the minimum level of light regulation) is denoted by $i(e*)_F$ in the case of for-profit MFIs in figure 04. Similarly, where $P(e*)$ intersects $P(i,r)_N$ will provide us with the maximum level of heavy regulation for non-profit MFIs. Let us denote this as $i(e*)_{NF}$.

Suppose a commercial investor invests an amount of money, Y, in a MFI project. The minimum threshold can also be represented as:

$$s[Y(P(i,r) - 1)] \geq E \ldots \ldots \ldots (1)^2$$
$$\text{where, } E = (e*)\,Y$$

given that,

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[2]A more complete version would include additional costs, such as taxes, transaction costs etc. imposed on the MFI and the investor:

$$s[P(i,r)Y - Y] - C_{MFI} \geq E - C_I$$

where C_{MFI} represents the lump-sum costs of the MFI and C_I the lump-sum costs faced by the investor. Assuming that $C_{MFI} = C_I$, the equation becomes,

$$s[P(i,r)Y - Y] \ (- C_{MFI} + C_I) \geq E$$
$$= s[P(i,r)Y - Y] \geq E$$

This simplification provides an easier understanding.

Y =Investment amount by the investor in the project
s = Probability of success of the project.

If the investor expects the MFI to earn a profit of $s[Y(P(i) - 1)]$, at least equal to his expected return, E, from his investment, Y, investment will take place.

Taking both ends of the spectrum, for-profit MFIs should thus be regulated at least above $i(e*)_F$ and below i_F*. Similarly non-profit MFIs should be regulated at least above $i(e*)_{NF}$ and below $i_{NF}*$. However as noted earlier, the closer you get to i_F* and $i_{NF}*$, the higher the default and interest rates. This can cause more harm than good, especially when viewed by a socially conscious regulatory body.

Theoretically, default rates start noticeably increasing at $R(i)_F$ and $R(i)_N$'s inflection points. Thus as long as one keeps below these points, default rates should be kept at a minimum while ensuring investor confidence. The level of regulation corresponding to the inflection points are denoted as $i(f)$ and $i(n)$, for for-profit MFIs and non-profit MFIs respectively.

This leads to the study's proposition for a balanced regulation: *For-profit MFIs should be regulated between $i(e*)_F$ and $i(f)$ and non-profit MFIs should be regulated between $i(e*)_{NF}$ and $i(n)$.*

Regulatory bodies with preferences towards heavy regulatory regimes should lean more towards $i(e*)_F$ and $i(e*)_{NF}$ and regulatory bodies with preferences towards light regulatory regimes should lean more towards $i(f)$ and $i(n)$.

A final point worth mentioning is the dynamism of the market environment. As competition develops, $R[ceiling]$ will be pushed down and the profit functions will adjust. Levels of regulation, that is the $i(e*)_F$, $i(e*)_{NF}$, $i(f)$ and $i(n)$ points will thus require to be adapted over time.

IV. Conclusions

This study builds on the premise that commercial investors look to both profitability and government regulation policies when deciding where to put their money. While the investors can use their return rate as a screening mechanism for selecting MFIs, the government is also able to do so via the level of regulation they impose. If the government formulates policies that keep the level of regulation at par with the investors return rate, this acts as a positive signaling towards the investors, promoting investments in the MFI market.

Reille and Forster (2008) report that bulk of the stock of foreign capital investment, covering both debt and equity, "are focused on a narrow niche market of high-growth MFIs that are capable of offering competitive market returns." Proactive government steps with apt regulatory schemes can also guide the diversification of the in-flow of investments.

The microscope index, which rank countries' microfinance sector by considering their regulatory environment and institutional framework, can be used to develop the regulatory framework proposed in this study. Coupled with data on corresponding levels of risk and profitability of MFIs an empirical investigation can be undertaken in the future.

References

[1] Accion Insight. "The Banco Compartamos Initial Public Offering."June 2007, No. 23.

[2] B. Connie, "Millions for Millions," in The New Yorker, October 2006.

[3] D. Karlan and J. Zinman, "Long-Run Price Elasticities of Demand for Microcredit: Evidence from a Countrywide Field Experiment in Mexico," in Yale Economics Department Working Paper No. 115, May 2013.

[4] J. Reinke, "Regulatory Challenges to Private Sector Investment," in MicroNote No. 1, Washington, DC: United States Agency for International Development, 2005.

[5] J. Stiglitz A. and Weiss, "Credit Markets in Credit with Imperfect Information," in *American Economic Review,* vol. 71, pp. 393 – 410, 1981.

[6] K. Druschel, "The Ultimate Balancing Act: Investor Confidence and Regulatory Considerations for Microfinance," United States Agency for International Development, 2005.

[7] M. Angelucci, D. Karlan and J. Zinman, "Win Some Lose Some? Evidence from a Randomized Microcredit Program Placement Experiment by CompartamosBanco," in Yale Economics Department Working Paper No. 117, May 2013.

[8] "Online Extra: Yunus Blasts Compartamos," in Bloomberg Buisinessweek, December 12, 2007.

[9] R. Cull, D. Asli and M. Jonathan, "Microfinance Meets the Market" in Journal of Economic Perspectives, 2009, vol. 23(1), pp. 167-192.

[10] R. Kurzweil, "The Law of Accelerating Returns," in Alan Turing: Life and Legacy of a Great Thinker, Part III, Springer Berlin Heidelberg, pp. 381-419, 2004.

[11] R. Rosenberg, A. Gonzalez and S. Narain, "The New Moneylenders: Are the Poor Being Exploited by High Microcredit Interest Rates?" in CGAP Occasional Paper 15, 2009.

[12] X. Reille and S. Forster, "Foreign Capital Investment in Microfinance: Balancing Social and Financial Returns," in CGAP Focus Note 44, 2008.

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