

# Microfinance, Market Structure, and Borrower Welfare: Regulatory Lessons from the Indian Crisis\*

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## Abstract

In this article we review some of the open questions highlighted by the recent Indian microfinance crisis. We draw out some of the key lessons learned about the microfinance industry, both in India and more broadly, and their implications for borrowers. We illustrate the interplay of regulation, market structure and borrower welfare by surveying recent contributions that reflect the renewed academic interest in microfinance. By putting this research into perspective with the crisis, we point out potentially important avenues for further research.

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# 1 Introduction

Microfinance has had a fairly turbulent ride lately, from a “magic bullet” into a problem sector that needs to be strictly regulated. It would have been hard to foresee the stratospheric heights it would climb with the Nobel Peace Prize for Muhammad Yunus and the Grameen Bank in 2006 to the depths of crisis it would reach in late 2010 in the Indian state of Andhra Pradesh (henceforth, AP). The \$5 billion Indian microfinance market<sup>1</sup> has experienced a major turnaround as a result, from rapid expansion into crisis mode, threatening the sector in India as a whole. While AP may be just a state in India, it has to be kept in mind that India has the largest credit-driven microfinance operations in the world - out of the ten largest MFIs in the world, four are from India and of these, three are from AP (Schmidt (2010)). Moreover, the lessons from AP have a broader significance. As Elizabeth Rhyne, the managing director of the Center for Financial Inclusion at Accion International, puts it:

“The current crisis in microfinance in Andhra Pradesh is the most serious challenge to the microfinance sector in its brief history...While the origins of the crisis are complex, and many of them are India- and AP-specific, the crisis reveals shortcomings in microfinance that urgently need to be addressed.”<sup>2</sup>

The mission of microfinance, in the end, has to be to enhance borrower welfare. It is not about repayment rates or number of borrowers reached or number of loans given out and certainly not in terms of rate of return earned by investors. This is a simple point that is often overlooked. Even before the Indian crisis broke out, while there was a lot of discussion about what drives high repayment, there was not sufficient attention paid to the use of peer pressure or direct pressure on behalf of loan officers beyond journalistic accounts. Yet, the market failure that MF seeks to address is making financial services accessible to poorer borrowers and it should be fundamentally judged on this criterion. High repayment rates are analogous to a patient taking her medicines regularly – which is a good thing – but in the end, does she get better?

This is exactly where the two apparently independent negative events from the point of view of the MF industry - the issues that commercialization have brought up, reaching a flare point in AP, and the sobering results of the rigorous impact evaluations - have a connection. To develop a bit further the metaphor of the patient and the treatment - one issue has to do with whether the cure is worse than the disease and the other with, what are the correct measures of health.

Profiteering - especially when the clients are poor - is always bound to raise ethical questions but the focus has to be – are the clients worse off as a result. Clearly some of the disturbing findings that are emerging from the AP crisis, for example the current report in the Washington Post<sup>3</sup>, suggests in some cases indeed that was the

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<sup>1</sup>Data from MIX Market Data for Year 2010, <http://www.mixmarket.org/mfi/country/India>, accessed on 30.11.2011.

<sup>2</sup>Elizabeth Rhyne, [http://blogs.cgdev.org/open\\\_book/2010/12/recalibrating-microfinance-a-six-point-program.php](http://blogs.cgdev.org/open\_book/2010/12/recalibrating-microfinance-a-six-point-program.php), accessed on 20.02.2012.

<sup>3</sup>Washington Post, [http://www.washingtonpost.com/world/asia-pacific/ap-impact-indian-lender-skips-own-probe-links-it-to-borrower-suicides-despite-company-denials/2012/02/24/gIQA1tfCXR\\_story.html](http://www.washingtonpost.com/world/asia-pacific/ap-impact-indian-lender-skips-own-probe-links-it-to-borrower-suicides-despite-company-denials/2012/02/24/gIQA1tfCXR_story.html)

case. That these may not be the majority of the cases is beside the point - clearly regulatory safeguards are needed to neutralize any systemic tendency towards abuse and exploitation of the poor and the vulnerable. Like any sector of the economy, MFIs need a regulatory framework and we need to understand the industrial organization of this sector whereas most of the theoretical and empirical work has focused on a single MFI dealing with a set of borrowers.

On the other hand, even when profiteering with or without abuse of borrowers is not the issue, as in the setting of the MFIs whose impacts were rigorously studied using randomized control trials (RCTs) a different set of welfare issues come up. One issue that Roodman (2011) has framed very well is our interpretation of this evidence is driven by our view of development or more narrowly borrower welfare. To the extent these studies do show that microloans helped the poor borrowers start a new small business or expand the size of an existing one, and buy durables that are used for production and cutting expenses on non-essential items, we should acknowledge that as a positive achievement. In general, given the risk that the poor face and the seasonality of their income patterns, making any form of financial services available (and not just credit) would make them better off without necessarily raising their incomes and so future studies should also focus on the greater ability of the poor to smooth consumption. However, the fact that these studies show that MF did not, at least in short to medium run, make any significant changes to the income or human capital investment of the poor tells us that we need to see if there are positive effects in a longer time horizon, and if there are general equilibrium effects, even on non-participants and how these vary depending of the market structure (e.g., how many MFIs operating in a given area) and the nature of regulations in place. But it also tells us that long term changes in aggregate poverty is unlikely to come from intervening in any one market, let alone a single organization.

This review does not aim to provide an exhaustive review of the large and rapidly growing literature on microfinance, but is a thematic review of some of the issues that the Indian crisis have thrown up in terms of thinking beyond a single MFI and its set of borrowers, namely, the role of market structure, regulation from the point of view of the stated objective of MFIs - raising borrower welfare.

The paper is structured as follows. In the section 2, we will outline the events surrounding the recent crisis in India along with the policy reactions. In section 3 we provide a very brief overview or recent impact assessment studies. Section 4 discusses the role of market structure, with a special focus on the Indian case. In section 5 we embark on reviewing the literature surrounding the role of institutional objectives, agency relationships within microfinance institutions and their financing with special emphasis on the Indian case. Section 6 considers the role of regulation with a particular emphasis on the literature regarding information sharing. The final section concludes.

## 2 The Indian microfinance crisis

To most academic researchers, as well as many other observers, the crisis in the Indian microfinance sector came as a surprise. However, some practitioners, policy consultants and the venture capitalist sector were warning that a bubble was developing. This section sketches out the development of the microfinance sector in India as a whole,

with a particular focus on the state of Andhra Pradesh and the recent events. It is important to point out that this crisis is specific to India and not one of microfinance in general. However, it raised important questions and issues to which academics, practitioners and politicians need to find answers. We highlight how the regulatory framework shaped the development of the microfinance sector and its massive expansion, funded by priority-sector bank loans. These regulations prevented institutions similar to the Grameen Bank of Bangladesh from being established, a situation which continues to this day.

## 2.1 Summary: Stylized facts from the Indian crisis

The following are the key stylized facts from the Indian crisis:

- Fast growth led to declines in portfolio quality due to multiple lending, spatial concentration of lending activities and weak incentives for capacity building.
- Lack of regulation implied that borrowers had no means to protect themselves against coercive actions by some microfinance actors.
- Financial regulation implied that MFIs could not diversify their product portfolio or their funding sources (e.g. offering savings products), making them highly dependent on bank lending and equity finance which both demand short-term returns on their investments.
- High staff-turnover and improper incentive schemes may have caused a substitution from portfolio quality to portfolio volume and a neglect of capacity building (e.g. financial literacy training).
- The conflict of interests between the states role as regulator and as a market participant through its own lending programme (SHG) led to erratic regulation.
- Supporting infrastructures such as credit bureaus and institutionalized redressal systems did not keep up with the growth of the sector.
- The existing regulatory framework inhibits the development of MFIs into full financial service providers, over-emphasizing the role of microcredit.

It becomes clear from these stylized facts, which are elaborated on in the review, that an important emphasis should be the study of the institutional framework and the industrial organization of the sector. Thanks to the methodological advances of randomized-control trials, we have gained valuable insights into the workings of particular contract mechanisms. These studies are extremely valuable but are always constrained by their context specificity and the resulting lack of external validity. As the sector matures, a natural development is to focus research efforts into understanding the industrial organization of microfinance, the specific issues regarding institutional design and the specific agency problems that arise between the microfinance stakeholders. Using the Indian microfinance as a case in point, this is what this review aims to highlight.

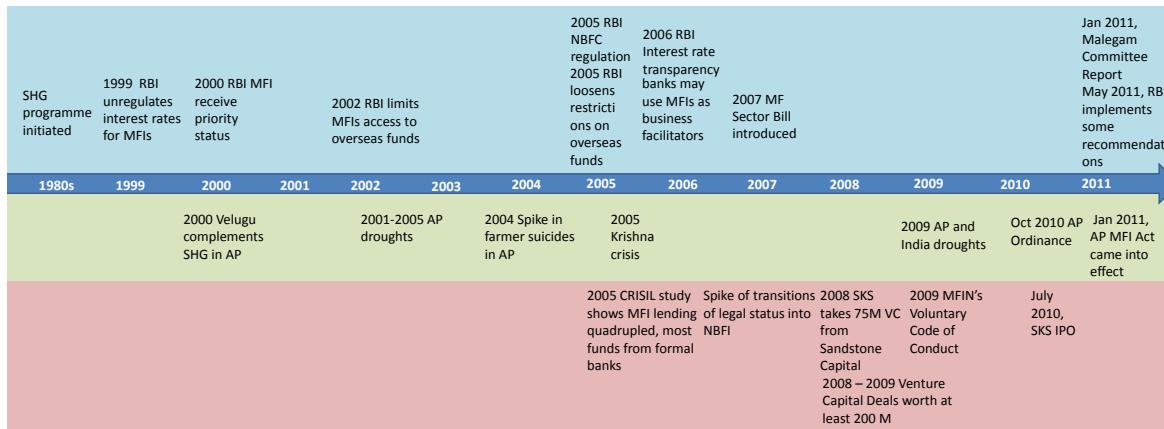


Figure 1: Timeline of Major Events from 1990s till early 2011

## 2.2 Background

Figure 1 is a timeline depicting the sequence of major events. It is broken into three layers - the national, state of Andhra Pradesh and the industry, to depict events that are correlated with the evolution of the industry.

A first challenge lies in defining what exactly comprises a microfinance institution and trying to identify at what level - state or national - responsibility for oversight lies. The Reserve Bank of India (RBI) defines “Micro Credit [...] as the provision of thrift, credit and other financial services and products of very small amount to the poor in rural, semi-urban and urban areas for enabling them to raise their income levels and improve their living standards. Micro Credit Institutions are those which provide these facilities.”<sup>4</sup>

The Reserve Bank of India must resort to such a vague definition as, legally, microfinance institutions could be constituted as

- trusts registered under the Indian Trust Act, 1882/Public Trust Act;
- societies registered under the Societies Registration Act, 1860;
- Co-operatives registered under the Mutually Aided Cooperative Societies Acts of the States;
- Section 25 Companies Act (Non-Profit) Non-Banking Financial Companies (NBFC) MFIs; or
- Companies Act NBFCs registered with the RBI.

The relative advantages and disadvantages of legal forms has been analyzed from the perspective of the industry in Sa-Dhan (2006). The multitude of legal forms and the fact that different types of institutions would register with different bodies (or not register at all) implies that little reliable data exist on the industry structure. NABARD (2010) estimates that there “are about 1,000 NGO-MFIs and more than

<sup>4</sup>RBI, Master Circular on Micro Credit RPCD. FID. BC.No. 53 / 12.01.001/ 2010-11 dated Feb 14, 2011

20 Company MFIs. Further, in Andhra Pradesh, nearly 30,000 cooperative organizations are engaged in MF activities. However, the company MFIs are major players accounting for over 80% of the microfinance loan portfolio.”

We now move on to describe the key events that led to the significant rise in microcredit in India in the past 15-20 years.

## 2.3 Rural banking and self-help program

Since 1969, formally regulated banks, which are under the supervision of the Reserve Bank of India (RBI), are required to extend 40% of their net credit to the priority sector, among which agriculture, retail trade and small businesses are the most important recipients. The interest rate that banks may charge on these loans is capped at the respective bank’s prime lending rate.<sup>5</sup> The prime lending rate applied to loans up to INR 2 lakh (\$40,000), and was around 10-16% per annum for the major banks over that time frame.<sup>6</sup>

The late 1990s can be considered as the birth of the microfinance industry in India. The government interlinkage SHG (self-help group) program was introduced in the 1990s, and expanded rapidly as it was rolled out nationwide toward the end of the decade. One key to the rapid growth was the reliance on NGOs, who acted as facilitators in the group formation and training processes. The groups usually start out as ROSCAs (Rotating Credit and Savings Associations), developing a group fund. After several months of training, they are deemed bankable and are extended loans for which they were jointly liable. Partnering banks typically impose strict limits for the maximum loan size that can be extended, which is typically a multiple of the size of the group fund. An individual will typically end up with average loans sizes of around INR 4000, about \$80 (Parida and Sinha, 2010). This is substantially lower than average loan sizes extended by typical MFIs in India as can be seen from figure 2. Banks are willing to lend to these groups at around their prime-lending rate because the NGOs and government subsidies absorb most of the operating costs of setting up and managing the groups.

In Andhra Pradesh (AP), the RBIs self-help interlinkage program (SHG) took off rapidly. In 2000, the SHG program in AP received an additional boost with money from World Bank’s Velugu program, which was first implemented in six districts in AP through the NGO vehicle SERP (Society for the Elimination of Rural Poverty). This program allowed SHGs to hire skilled people instead of relying on free services from NGOs. This could be seen as a first push towards a commercial microfinance industry.<sup>7</sup> By 2004, AP’s SHGs accounted for 40% of all SHGs financed by India’s National Bank for Agriculture and Rural Development (NABARD).

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<sup>5</sup>The prime lending rate is a reference interest rate set by a bank. From July 1st, 2010 onwards, the system was switched over to a base rate system. The terminology of the prime lending rate is nevertheless still in use.

<sup>6</sup>Whether the priority lending requirements led to more financial inclusion and growth is a related topic, and has been studied by Banerjee et al. (2003). However, it is a fact that there has been a massive expansion in the number of bank branches, which has increased from 8,260 in 1969 to 72,170 in 2007. During that period, the average number of individuals served by each branch decreased from 63,800 to 15,000. The growth in rural banking has also been studied e.g. in Burgess and Pande (2005), and it has been recognized that the expansion in rural banking failed to reach the poorest of the poor.

<sup>7</sup>See Swaminathan Aiyar writing in The Times of India, available at <http://>

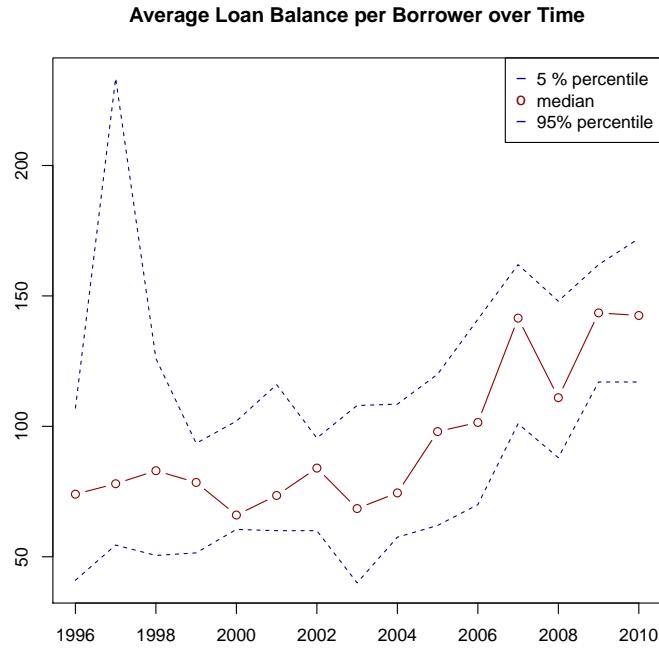


Figure 2: Average Loan Size over Time, Data from MIX Market

The SHGs themselves have started to federate themselves into Village, Mandal (sub-district) and District Organizations. This increasingly institutional structure has given rise to concerns that the SHG program may come to be used as a political vehicle (NABARD, 2008).

The focal point of the microfinance industry in India was the southern part of the country from the very beginning. Figure 3 is a map of India, overlaid with a heat map of the locations of headquarters of the microfinance institutions which report to the MIX (Microfinance Information Exchange) Market database. There are 142 institutions that have at some point reported data, and for which we were able to obtain the location of their headquarters. The heat map clearly shows the concentration of microfinance activities in the south of the country. Institutions marked as yellow are non-profit institutions, while red markers correspond to for-profit institutions, distinguished by their profit status in 2009 as reported by MIX.

## 2.4 The current crisis: policy outlook

Before events reached crisis point in summer 2010, right after the IPO of SKS India, the RBI published a report on the prospects for regulation of the industry. The hope was that the large MFIs had become important players who could prove helpful in improving financial inclusion. Looking back, it is questionable whether the RBI took a realistic stance on how MFIs were expected to fit into the bigger picture of India's financial system. KC Chakrabarty, Deputy Governor of Reserve Bank of India said:

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[articles.timesofindia.indiatimes.com/2004-02-14/all-that-matters/28324311\\_1\\_shgs-small-loans-tdp](http://articles.timesofindia.indiatimes.com/2004-02-14/all-that-matters/28324311_1_shgs-small-loans-tdp)

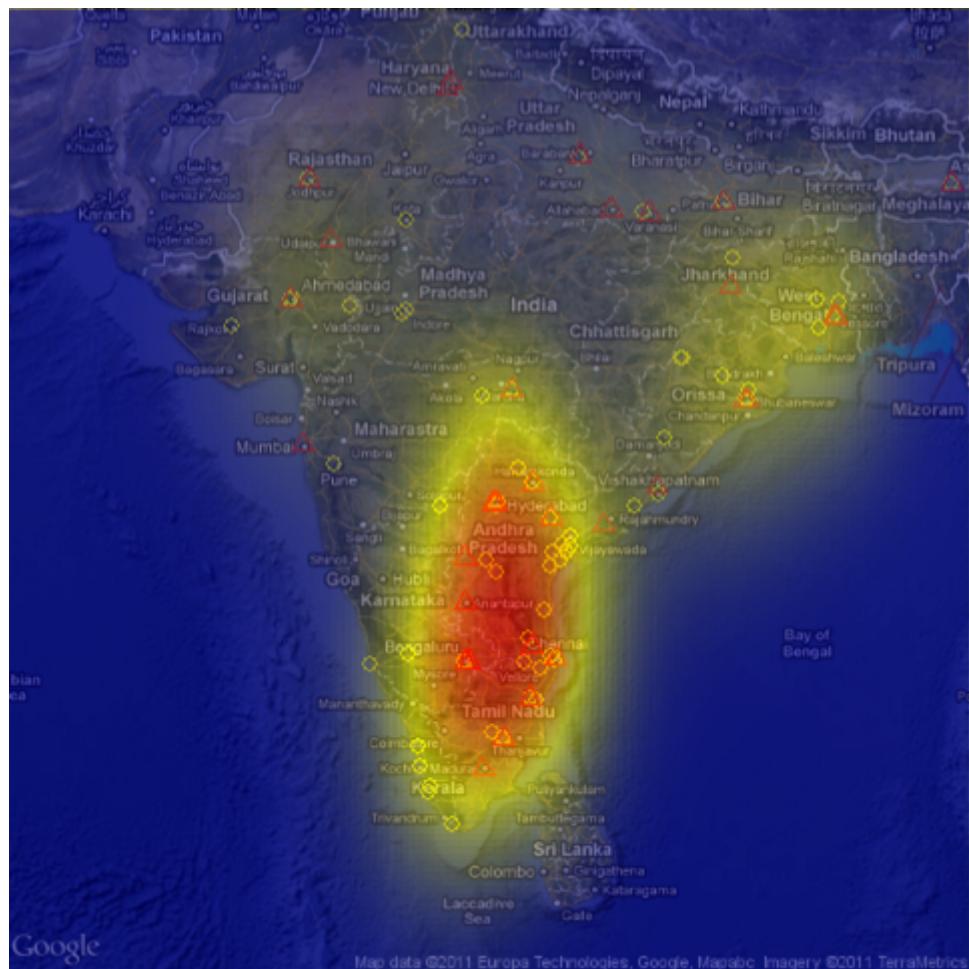


Figure 3: Heat map of the locations of the headquarters of MFIs with data on MIX Market

“MFIs giving loans is not financial inclusion. Our approach is that those who borrow today from MFIs must borrow from banks. And those who borrow from moneylenders must borrow from MFIs, and the reliance on moneylenders should go. That is when we say that financial inclusion is complete.”<sup>8</sup>

Despite this downplaying of the role of MFIs, these institutions have become systemically important and need to be given a proper place in India’s financial system through a clear regulatory mandate. Regulation needs to strike the balance between the obvious need for client protection without discouraging innovation and entry into the sector.

The current protracted crisis has been worsened (some claim it was initiated) by regulation passed by the AP state government. The AP Microfinance Ordinance was publicized on October 15, 2010 and became law in December of that year. The Ordinance was constructed on the basis of four premises: a) MFIs charge usurious interest rates; b) If clients fail to pay on time, MFIs use coercive methods to collect the interest; c) These practices are forcing the poor to commit suicide; and d) MFIs make huge profits and have no social mission to help the poor.

It is difficult to analyze how the AP Ordinance came about without drifting into mere speculation. It is clear, however, that a series of correlated events seemed to have triggered the strong political reaction. Among them were TV and radio reports of microfinance-linked suicides from early 2010 onwards; bad weather conditions due to a heavy monsoon, which could have caused delinquencies; increasing economic divides; and an unclear regulatory environment. At the same time, AP based SKS went public generating supposed windfall profits for its founder and investors. This drew attention to the Indian microfinance industry and triggered broad discussions on the sustainability of the sector’s poverty alleviation mission and a perceived shift instead to the pursuit of profits.

The AP government has attributed 54 suicides in the state to coercive practices employed by the MFIs’ loan officers to recover loans. Very recent media coverage suggest that coercive methods may have indeed caused a number of suicides.<sup>9</sup> A suicide was seen as the only way to get debts waived as with the death of the borrower an insurance that borrowers had to purchase with the loan, would spring in to cover. This suggests that it is of upmost importance to understand the incentive schemes that are used by microfinance institutions to induce their employees to exert effort. If these schemes are based on very narrow metrics, this could generate perverse incentives that could help to understand the use of coercive recovery methods.

However, despite the appalling reports, based on numbers from SERP, it appears that suicide rates amongst MFI borrowers are dramatically lower than the statistical average for the state of AP.

The effect of the Ordinance was immediate: it required MFIs to halt their operations. In this hostile environment local officials and politicians instructed borrowers to simply cease repaying their loans. As the MFIs require the cash flows from repayments

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<sup>8</sup>Economic Times, <http://articles.economictimes.indiatimes.com/2010-07-05/news/27609193>, accessed on 14.09.2011.

<sup>9</sup>Washington Post, [http://www.washingtonpost.com/world/asia-pacific/ap-impact-indian-lender-sks-own-probe-links-it-to-borrower-suicides-despite-company-denials/2012/02/24/gIQA1tfCXR\\_story.html](http://www.washingtonpost.com/world/asia-pacific/ap-impact-indian-lender-sks-own-probe-links-it-to-borrower-suicides-despite-company-denials/2012/02/24/gIQA1tfCXR_story.html), accessed on 22.02.2012.

for loan disbursal and repayment of loans that the MFIs received from formally regulated banks, this put the MFIs at risk of not being able to service their debts. MFIs were suddenly facing severe insolvency risk unrelated to the quality of their portfolios. This in turn led commercial banks to cease lending to MFIs. To prevent widespread contagion and collapse the RBI had to instruct formal banks to maintain lending.<sup>10</sup> To date however, bank lending to MFIs has not resumed, despite a debt restructuring program (which is only accessible to larger institutions). In AP especially the situation is very difficult with repayment rates as low as 10%. The extent of the refinancing gap has been analyzed by the MIX market.<sup>11</sup>

In response to the recent crisis, the RBI set up the Malegam Committee to draft its policy response. Some of the Malegam recommendations were implemented for the NBFC through a RBI circular.<sup>12</sup> A draft of the Microfinance Sector Bill was introduced in June. This draft is discussed in the following section.

## 2.5 A rocky road to regulation

The road towards a unified regulatory system has been a rocky one. However, with the proposal of the 2011 Microfinance Sector Bill, an important step has been made in achieving the long run goal of developing a framework that limits both the political risks and uncertainties, while setting the stage for the further development of the sector. Clearly, the different stakeholders have different views on the draft bill, most of which have some merit. The challenge lies in finding a format that adequately assesses these views and puts them into perspective. A key observation has to be noted at the start, namely, that the Bill fails to meet the expectations set by its title “The Microfinance Institutions Development and Regulation Bill”. While it makes important steps in allowing the development of a framework for client protection, it does not provide much when it comes to the development of the sector as a whole and it is in reality a “Microcredit” bill and not a more general “Microfinance” bill.

**Political risks** The key contribution of the draft bill is to provide the groundwork for establishing a sole regulator of MFIs, irrespective of their legal status. With the RBI as sole regulator, the sector should be protected from political risks arising from erratic state legislation under the diverse state moneylending acts. Despite this major step, key political risks inhibit the stabilization of the sector, in particular in Andhra Pradesh. Conflict between the state government of AP, the Union Government and the RBI are likely, despite attempts to include state governments in the regulation through the establishment of State Advisory Councils (whose actual roles remain unclear).

We list here the existing and potential political risks:

- Contests over legality: the state of Andhra Pradesh has already signaled that it would challenge the constitutionality of the bill.

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<sup>10</sup>Reserve Bank of India, <http://www.rbi.org.in/scripts/BSPressReleaseDisplay.aspx?prid=23621>, accessed on 07.11.2011.

<sup>11</sup>MIX Market, <http://www.themix.org/publications/microbanking-bulletin/2010/12/looking-forward-refinancing-gaps-indian-mfis>, accessed on 19.09.2011.

<sup>12</sup>RBI circular, RBI/2011-12/290

- Timely legislative process: the bill still needs to be approved by parliament before it can be applied. In the meantime the debt burden of microfinance institutions in AP is rising and smaller institutions with no access to the RBI's debt restructuring program will particularly suffer.
- The RBI's capacity to regulate and oversee the sector may be challenged. Furthermore, the proposed delegation of oversight to NABARD risks a conflict of interest (NABARD is a major financier of the SHG interlinkage program).
- The Development of a Reserve Fund for investment in the sector by the RBI may generate another conflict of interest as the regulator becomes itself a player in the industry.
- The bill leaves open many of the Malegam Committee's prescriptive regulations regarding the conduct of business and interest rates.
- The RBI's approval must be sought for mergers, changes in capital structure, de-merging and exit from the industry, which may discourage equity investment.
- The bill does not address the immediate problems in AP and may come too late for many affected institutions.
- The bill does not make a substantive contribution on the role of microfinance in India's financial and banking system.

**Client protection** The draft bill adopts some recommendations from the Malegam Committee regarding client protection. These include simple measures fostering transparency such as mandating the display of the actual APR charged. Furthermore, it allows the regulator to mandate, for example, where loan repayments will take place, how frequently, and the term length. With regards to multiple lending, the draft allows the regulator to prescribe debt ceilings and to oblige an institution to join credit bureaus.

The bill establishes a financial ombudsman that will resolve individual conflicts with MFIs. However the legislation remains silent when it comes to the actual processes and the authority of the ombudsman. Furthermore, the bill considers any violation of any regulation discussed in the bill as a criminal offense. However, individuals can not directly appeal to courts without the permission of the regulator. This effectively means that action can only be taken by the RBI. This may serve to protect the institutions from a spate of court appeals, but it puts a greater burden on the regulator and limits individuals' ability to raise their concerns.

It remains further unclear how monitoring and supervision will be institutionalized. The RBI may recognize a Code of Conduct of MFIs as it is established by self-regulatory organizations, such as Sa-Dhan.

**Interest rate and lending policy** The legislation gives powers to the RBI to adopt absolute interest rate and margin caps for individual institutions or the sector as a whole. Furthermore, it allows the regulator to set loan limits and other parameters of business conduct, such as where operations can be conducted and with which

frequency. These potential constraints – if invoked – give an institution hardly any operational flexibility and could do more harm than good. We will discuss some possible implications of mandating monthly repayments in the review of the literature further below.

There are simple practical problems when it comes to implementation. Consider the example of a margin cap. A margin cap may hamper entry into the industry, in particular it may discourage investments as it effectively censors the returns distribution, implying lower expected returns than without such a margin cap. Similarly, depending on the extent of competition, a lender with a margin cap in place may have little incentive to improve efficiency if he can not benefit himself.

Absolute interest rate caps, on the other hand, may lead to certain borrowers being excluded as institutions are not able to cover their costs of lending to them. In any case, it is questionable whether the imposition of fixed interest rate caps is viable in an economy with high and varying rates of inflation.

Along the lines of the Malegam recommendation, the bill allows the regulator to impose conditions that need to be satisfied for borrowers to qualify for microfinance lending. Inflexible income constraints may either encourage mis-reporting or may mean that certain types of borrowers will be left without access to finance.

The suggested move toward interest rate or margin caps most likely has its root in the fact that bank lending to MFIs will continue to be categorized as priority sector lending.<sup>13</sup> However, it does highlight that the current proposed regulation provides no clear guidance for what role microfinance institutions should play in India's banking system. Clearly the MFIs have passed the point of being mere business facilitators, but it is currently unclear to what extent MFIs and banks can expect to play parallel roles in the future.

**Financing microfinance and development of the sector** Since the bill fails to set out the status of MFIs in India's financial sector in the future, no major changes regarding the means of financing microfinance have been established. The draft bill maintains the general view that microfinance is an extension of banking activity and not a part of banking itself. All existing RBI regulation concerning an MFI's ability to accept deposits or obtain equity finance remains intact. If the financing of microfinance in India had any impact on the development of the crisis, the current legislation does not tackle this important issue.

The recently proposed regulation ensure that for the foreseeable future, the activities of MFIs in India will continue to be dominated by microcredit. This point has been iterated in a recent speech by K.C. Chakrabarty

"I would like to point that MFIs/NBFCs/NGOs on their own would not be able to bring about financial inclusion as the range of financial products and services which we consider as the bare minimum to qualify as availability of banking services cannot be offered by MFIs/NBFCs/NGOs."<sup>14</sup>

The shape of Indian microfinance regulation implies now and has always implied

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<sup>13</sup>RBI circular, RBI/2010-11/505

<sup>14</sup>RBI Monthly Bulletin November 2011, <http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/02SEPC1111FL.pdf>, accessed on 14.11.2011

that Indian MFIs simply could not have developed in a fashion similar to, for example, Grameen Bank of Bangladesh.

### 3 The Impact of Microfinance: A Brief Review of the Evidence

Before turning to the issues relating to the industrial organization of the microfinance sector, we first summarize the findings of some of the micro-level empirical analysis trying to evaluate the impact of MF on various outcome variables relating to borrowers. In particular we draw on the recent results from randomized control trials, which due to the rigorous identification strategy give us clean estimates of causal impacts, even though by design they look at a single MFI and its borrowers, and cannot address industry or market level issues.

Banerjee et al. (2010) is a first study of this type. They perform a randomized control trial in urban Hyderabad, whereby the lender Spandana (one of the biggest NBFC in India) opened branch offices in randomly selected slums. Their findings are sobering: they see no immediate effect on household consumption, but find positive effects regarding entrepreneurship (business formation, investment in durable goods), the impacts of which need to be studied further in the longer run. It is worth noting that the context is one of lending in urban areas, where, for example, business activities may be different as compared with rural contexts.

Very recent contributions by Attanasio et al. (2011) and Crépon et al. (2011) perform impact assessment studies in rural contexts in Mongolia and Morocco, respectively. The former studies the expansion of a Mongolian MFI that randomly selects 40 villages, which receive either individual liability loans, joint liability loans or no microfinance. In all these villages, the researchers asked interested individuals to form groups. The groups were informed about the lending methods they may receive access to and were surveyed. After this baseline, the lending methods were randomly allocated. In the follow up surveys, the researchers tracked down all the borrowers and those who chose not to take up loans. This allows them to actually compare borrowers with non-borrowers and not try to identify effects of microfinance solely from the population that was actually treated.

Their key observation is that, similar to Banerjee et al. (2010), there are significant effects on entrepreneurship, while consumption patterns change in favor of durable goods. However, they only see the entrepreneurship effect for the set of joint liability villages. Clearly, this provides an estimate of the short-term effect of access to microfinance, however, it does not shed light on what contractual feature of the joint liability loans may be causing these patterns. In particular, the MFI they work with offers special group loans which are taken up collectively to finance joint businesses. The authors do not give any details about these types of loans and whether these were taken up. However, these types of joint liability loans may influence the results. Furthermore, as groups were formed in all towns, any lending activity - independent of the type of contracts offered - has some form of group component. This could be affecting the results. The observation that take-up rates for group-lending villages was higher than for individual-lending ones, is interesting in itself, as it potentially sheds lights on the type of credit products borrowers prefer.

It is important to highlight that in some of the early work, maybe researchers were looking at the wrong metrics. The work of Collins et al. (2009) gave a very profound insight into the cash flows of the poor and inspired a lot of empirical work. Practitioners and some qualitative research indicates that in the longer term, microfinance may have significant impacts on qualitative indicators such as female empowerment, health and educational outcomes. These are all variables that are either difficult to measure or are only observable in the longer term or both. The twin challenges of gradual attrition and spillovers between treatment and control may make it quite difficult to evaluate the longer run impacts of microfinance in this way.

The interpretation of targeted interventions such of these can be quite context specific, with somewhat limited external validity. In particular it is difficult to identify larger-scale or “general equilibrium” effects, for example how competition between MFIs affects borrower welfare.

## 4 Market Structure of the Microfinance Industry

A critical issue highlighted by the crisis is the need to better understand the nature and extent of competition within the microfinance industry. Competition between for-profits and/or non-profits, with or without market power and lenders with possibly wide-ranging objectives will imply very different regulatory concerns for policy-makers. This section discusses the evidence so far on the extent of competition in the microfinance industry. The next section highlights the implications of differing lender objectives and internal structures for borrower welfare, in particular when competition is weak.

At present we simply do not know to what extent the sector is evolving into one where competition among institutions is the rule and not the exception. This holds especially true in urban contexts. If institutions compete for borrowers, they require specific supporting infrastructures in order to maintain portfolio quality, as we will argue later in this review. The Asian Development Bank notes that “In many countries in the region [Asia], the majority of microcredit is provided by a few leading institutions, and competition among them is mostly on non-price terms” (Fernando (2006)). Structured analyses of the extent to which competition prevails and how it impacts on portfolio quality, outreach and the types of credit contracts offered, are still scarce.

Some attempts have been made to construct commonly known measures of competition. Assefa et al. (2010) construct a Lerner index, which measures the ability of institutions charging prices above marginal costs. Clearly, there is a lot of ambiguity as to how to construct an institutions marginal costs (risk provisions, donations, ...) and data quality - especially spatial data - is still very poor. However, they find that increasing competition adversely affects institutional performance. However, the extent of this effect depends on the institutional framework, e.g. to what extent formal information sharing mechanisms are in place.

The broader institutional framework stipulates how microfinance institutions can refinance themselves. In the Indian case, the most severe constraint for early microfinance organizations was the lack of capital for on-lending. The only way these institutions could extend loans was by taking loans from the formal banking system or by relying on donations. Access to foreign borrowing or equity finance was severely

restricted. Clearly, any on-lending by microfinance institutions would need to be at interest rates at least as high as the cost of funds.

Formally regulated banks were subject to a set of interest rate constraints that may have made it unprofitable to expand operations in rural areas. The RBI acknowledged this and in April 1999, it removed interest rate constraints. In particular, “interest rates applicable to loans given by banks to micro credit organizations or by the micro credit organizations to Self-Help Groups/member beneficiaries has been left to their discretion. The interest rate ceiling applicable to direct small loans given by banks to individual borrowers, however, continues to remain in force.”<sup>15</sup> This decision introduced a stark asymmetry. In particular, it disadvantaged banks who lent directly to self-help groups relative to microfinance institutions lending to the very same groups, as the former were not given full flexibility when setting their interest rates.

In February 2000, the RBI triggered the rapid growth of microfinance institutions by formally categorizing bank lending to microfinance institution as priority sector lending. The RBI chose not to impose any constraints on how banks selected the microfinance organizations with which they chose to work. They advised however, that it “may, be desirable for banks to deal with micro credit organizations having proper credentials, track record, system of maintaining accounts and records with regular audits in place and manpower for closer supervision and follow-up. A simple system requiring minimum procedures and documentation is a precondition for augmenting flow of micro credit.”<sup>16</sup>

Merely looking at the establishment dates of existing institutions gives a good picture of how the expansion proceeded. Figure 4 plots the number of institutions established by year. Again, this is constrained to the set of institutions with data on MIX Market. It is clear that the bulk of institutions was founded in the middle 90s and early 2000’s. This graph suggest that deregulation is strongly correlated with entry into the sector.

Due to lack of data we are not able to study the exact pattern of the sector’s growth and competition in particular. There is anecdotal evidence suggesting that MFIs have primarily targeted areas where SHGs and other competitors already operated. “Loan officers learned that they could line up customers more quickly in villages where their competitors already operated for there the women would have been educated in the mechanics of microcredit and might want new loans to service old ones.”<sup>17</sup> This quote touches on an important issue when thinking about competition in the sector. We should distinguish between MFIs choosing to locate near a competitor to compete on price terms, which we would expect to benefit borrowers, and those who locate nearby so as to “poach” clients and cut corners on the information-gathering and relationship-building stage of the lender-client relationship. To the extent that this stage represents a costly relationship-specific investment, such competitive practices could undermine microfinance lending and ultimately harm borrowers (as suggested in Baquero et al. (2012)).

Next we turn to the issue of market concentration. Figure 5 tries to highlight the

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<sup>15</sup>RBI circular RPCD.No.PL.BC. 94/04.09.01/98-99 dated April 24, 1999

<sup>16</sup>RBI circular, RPCD.NO.PL.BC. 62 /04.09.01/99-2000, February 18, 2000, <http://rbidocs.rbi.org.in/rdocs/notification/PDFs/11680.pdf>

<sup>17</sup>David Roodman, [http://blogs.cgdev.org/open\\\_book/2010/11/understanding-indias-microcredit-crisis.php](http://blogs.cgdev.org/open\_book/2010/11/understanding-indias-microcredit-crisis.php), accessed on 14.11.2011

rapid expansion of microcredit in India in just a very short time. It plots the institutions' share of the 2009 market<sup>18</sup> by their year of establishment along the horizontal axis. Each different shade – be it very tiny – corresponds to the market share of an MFI established in the relevant year. It becomes clear that just a few institutions established between 1997 and 2002 have grown extremely quickly and now take up more than 50 percent of the market. It is questionable whether this growth was sustainable, or whether it went hand in hand with deteriorating portfolio quality and multiple-lending. We lack spatially disaggregated data to make statements about the extent to which institutions have market power at the local level. Despite this, the graph depicts both the speed of growth by just a few institutions and it also suggests that the market in India is quite concentrated. This should raise concerns about issues regarding market power and borrower welfare, along with questions on the nature of the growth, i.e. whether it indeed merely reflects over-indebtedness, whereby borrowers take out multiple loans.

Baquero et al. (2012) is a very recent contribution that looks at market concentration across countries. They construct a unique panel data set of 379 institutions in 67 countries obtained from rating agencies. They observe that competition has an effect on both for-profits and non-profits. They construct time varying Herfindahl Hirschman Indices, which measure the extent of market concentration. They observe that in less concentrated markets, for-profits charge lower rates and have better portfolio quality. Their point estimate is significantly larger as those obtained in previous banking studies. On the other hand they report that non-profits are insensitive to changes in market concentration. They also observe that interest-rate ceilings significantly reduce interest rates for for-profits. Regarding the competition between non-profits and for-profits, they observe that the portfolio quality of non-profits worsens with market share increases of for-profits. This is suggestive that cross-subsidization strategies of non-profits become infeasible in more concentrated markets or that the for-profits poach the good clients from the non-profit MFIs portfolios.

These macro level indices do not take into account the spatial concentration of lending activities, which was very pronounced in the Indian case. With more disaggregated data, we could study the location choices of microfinance branches. However, as already noted this data is not available and thus we caution against drawing far reaching conclusions from the anecdotal evidence.<sup>19</sup>

For the Indian case there also have been a few attempts to construct Herfindahl Indices. David Roodman has used non disaggregated data and observes that market concentration in India does not seem to be at an unhealthy level.<sup>20</sup> However, there are many caveats with these approaches.

Understanding the market environment in which institutions operate is important, as we would expect there to be a feedback from the industrial organization on the type of contracts that can be sustained in equilibrium. However, competition or the lack thereof may limit institutions' ability to use innovative contracts in light of problems of information sharing. Furthermore, market power may induce lenders to favor certain

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<sup>18</sup>Total outstanding loan portfolio as of 2009 according to MIX market data in India.

<sup>19</sup>With the new registration requirements in India, following the crisis, location data that allows the study of locational choice may become available sooner or later.

<sup>20</sup>David Roodman, <http://blogs.cgdev.org/openbook/2010/01/should-industry-concentration-cause-consternation.php>, accessed on 12.08.2011.

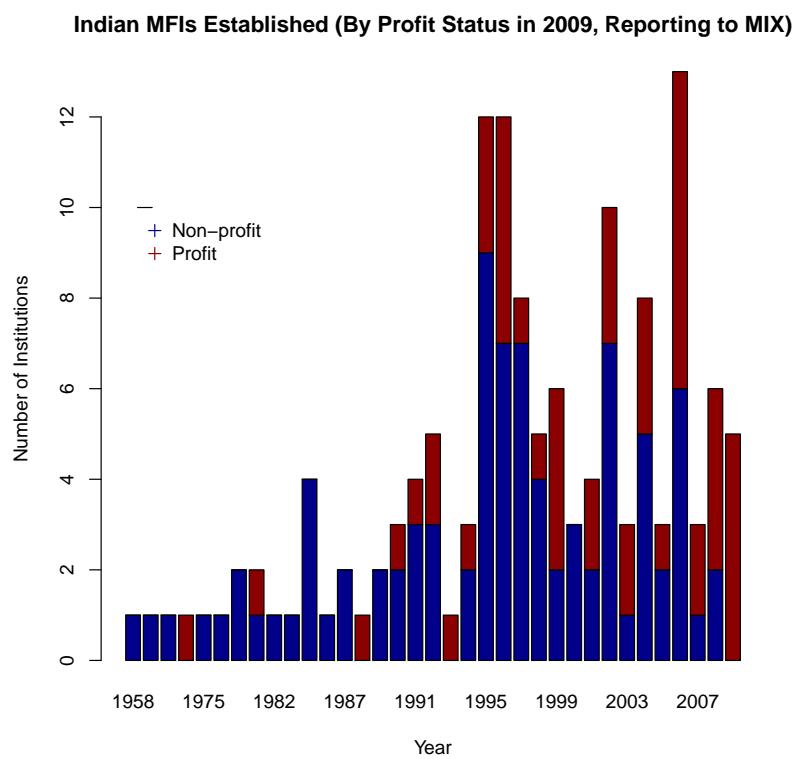


Figure 4: Number of Institutions by Year of Establishment and Profit Status in 2009

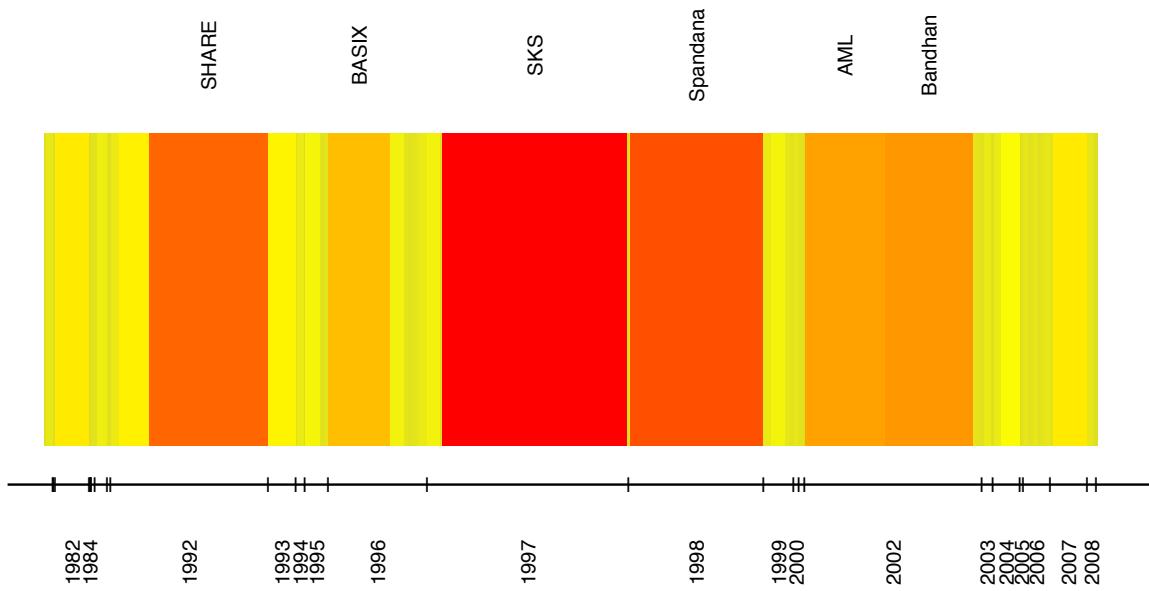


Figure 5: Market Share of Institutions in 2009 by Year of Establishment

lending arrangement over others, which may inhibit borrower welfare.

This interaction between market power and borrower welfare suggests that researchers may not necessarily be able to find large effects of the introduction of microfinance on borrower welfare, as e.g. measured by consumption or ownership of assets depending on the underlying market structure. However, empirically it is likely to be quite challenging to get plausibly exogenous variation in the market structure. Now we turn to a discussion of various aspects of market structure in the microfinance industry.

## 5 Institutional Objectives, Incentives and Market Power

In the previous section, we discussed evidence for competition, or the lack thereof, and its effects at the industry level. Now we turn to the MFIs themselves. First we discuss research on the behavior of MFIs with market power, and especially the implications for borrower welfare. Then we turn to other operational issues - how MFI staff are recruited and motivated, how microfinance is funded, and mission drift. All of these are key issues in understanding the Indian crisis. After all, it was above all concerns about exploitative behavior by externally financed for-profit lenders that triggered the regulatory crackdown in AP.

A first paper that abstracted from the benchmark assumption of perfect competition among lenders was Hoff and Stiglitz (1997). They consider a monopolistic lending market and showed that subsidies can severely distort market outcomes. They assume that an increased number of lenders in a market reduce the probability of default histories being common knowledge. Hence, there is a classical externality of entry by lenders which weakens borrowers' dynamic repayment incentives. If entry is subsidized, this may cause interest rates to rise in the overall market. Their paper highlighted the importance of information sharing among institutions. This became an important theme for subsequent theoretical work, e.g. Conning (1999), Navajas et al. (2003) and McIntosh and Wydick (2005). Information sharing is a characteristic of credit markets in developed countries, where credit checks and thus, negative information sharing, are prevalent. However, Ghosh and Ray (2001) show theoretically that microfinance institutions may do without. In their model, lenders sort out borrowers through an initial screening period which must be passed by borrowers.

Another point that was highlighted by the Indian crisis is the necessity to understand how imperfectly competitive lenders may use or abuse the innovative lending methods that have been pioneered by non-profit institutions such as the Grameen Bank of Bangladesh. There have been few papers to study the interplay of market power and borrower welfare under diverse contracting constraints.

A recent contribution is de Quidt et al. (2011), who study forms of group lending in an enforcement model framework. They argue that a monopolistic lender may be able to extract some surplus pertaining to the social capital borrowers share in lending groups. This may distort investment incentives in social capital.

While de Quidt et al. (2011) emphasise group lending, Genicot and Ray (2006) study a general model of individual liability lending with enforcement constraints. They consider the interplay between the bargaining power of lender and borrower

(captured by Pareto weights on borrower welfare and lender profits) and the outside option of the borrower should lending break down. A low outside option for the borrower and high bargaining power of the lender may reflect the situation with a monopolist lender. They show that if the bargaining power of the borrower is above a certain threshold, a lower outside option - e.g. due to adverse economic conditions - may cause an improvement in borrower welfare. On the other hand, if the bargaining power lies with the lender, a lower outside option renders the borrower worse off.

McIntosh and Wydick (2005) are among the first papers to study the interaction of lending institutions with non-standard objective functions and market structure. Such institutions may be social enterprises or non-profit institutions. Typically non-profit institutions are subject to a non-distribution constraint, which requires profits to be reinvested into the social business. This constraint may allow these institutions to expand their operations both on the extensive and the intensive margin. McIntosh and Wydick (2005) study the patterns of cross-subsidization that may result if an institution has the objective to maximise the number of clients. Studying the behavior of a single client-maximizing institution, they observe that the institution will use surplus generated from a set of profitable borrowers to expand operations to unprofitable poor borrowers. However, as soon as a for-profit lender enters, the non-profit institution will adopt the Bertrand-undercutting strategy of the for-profit entrant, rendering cross-subsidization unsustainable. Their argument suggests that non-profits may be driven out of the market, have to adopt the behavior of for-profit institutions, or will have to rely on subsidies to achieve their broader mission. However, their model also suggests that the poorest borrowers are the last to be reached by a client-maximizing MFI, as these borrowers are the “most expensive” to lend to. It is questionable whether this adequately captures an institution driven by social motives. Their work highlights how competition may drive a subsidized NGO to adopt the behavior of a for-profit entrant, in order to keep to its mission of reaching out to the poor and that entry of a for-profit lender may lead to a set of borrowers (the poorest), being cut off from loans.

This framework highlights that it will be empirically difficult to identify the causal relationship between an institutions legal status and financial outcomes. In particular, in McIntosh and Wydick (2005) an NGO with a client maximizing objective and no subsidies would be indistinguishable from a for-profit institutions when considering financial performance.

The interaction of different types of actors in lending markets may lead to indirect welfare effects through improved credit terms by improving the outside option of borrowers. This has been studied e.g. in Besley et al. (2011) or in the previously discussed Genicot and Ray (2006).

Ghosh and Van Tassel (2008b) study the interaction between profit-oriented lenders and a subsidized MFI lending to reduce poverty (which is formalized by assigning a weighted poverty gap as target function).

They study a two period model where all agents have no capital to start with but have access to a productive opportunity in each period. Agents can exert costly effort to increase the likelihood of success, while the lenders supply the capital. They focus on parameter conditions whereby lenders - on average - make a loss on first-period loans. They show that a monopolist moneylender can recover the initial first-period losses through lending to successful agents who have developed an equity stake (which naturally increases effort).

They then study the effect of entry by an MFI offering subsidized loans. In particular, they study how this affects the borrowers' outside option and their first-period effort choice. The MFI, due to its objective, will optimally lend to borrowers not able to get loans in the second period. Hence, the MFI entry offers insurance against failure which reduces incentives to exert effort in the first place. At the same time, entry of the MFI gives successful borrowers the option to consume their returns and apply for an MFI loan. This outside option effect induces the moneylender to reduce interest rates charged in the second period. Overall, they show that effort choice in the first period remains unchanged, however, overall payoffs to successful agents are higher due to MFI entry.

Their contribution highlights potential positive indirect effects on welfare due to entry of a subsidized MFIs which affects agents who actually are not clients of the MFI. This highlights the importance that impact assessment studies should not study a (self) selected sample of MFI borrowers using non-borrowers as counterfactual.

While the general sentiment is that market power can not foster borrower welfare, Petersen and Rajan (1994) and McMillan and Woodruff (1999) argue that it may in fact help expanding credit access by allowing an institution to invoke dynamic incentives. This is contested by Fisman and Raturi (2004) who argues that this need not hold in case relationship specific investments need to be made. These investments are used to establish borrower creditworthiness. For microfinance institutions, we can think of such investments as the time spent in training sessions before an actual loan disbursal decision is made. Fisman and Raturi (2004) argues that such relationship specific investments may actually reduce credit provision as it generates hold up problems ex-post. In particular, borrowers may not be willing to make these investments ex-ante knowing that the lender would extract the surplus ex-post. Similarly, up-front investments create switching costs which actually reduce the value of the outside option.

We now turn to the study of agency problems of microfinance institutions with their major stakeholders: their employees, especially the loan officers, the institutions' financiers and their regulators.

## 5.1 Agency Problems inside Microfinance Institutions

A field of research in microfinance that has received possibly too little attention so far is concerning agency problems within microfinance institutions. In order to carry out operations, microfinance institutions need to employ staff. Field officers have a significant amount of decision power and leeway in the distribution process of delivering microfinance products (Armendáriz de Aghion and Morduch, 2010). These agency problems matter, particularly in the Indian context.

In 2006, the RBI started to allow banks to enlist MFIs and NGOs to act as business facilitators for their rural operations. "Banks can use the business facilitator model for services such as borrower identification, collection, processing and submission of applications, preliminary appraisal, marketing of the financial products including savings, post sanction monitoring, promotion and nurturing self-help groups and follow-up of recovery." At the same time, the RBI required banks to set up formal redressal to grievance procedures through which borrowers could file complaints. The facilitators were to be paid on commission basis; the rules "prohibit them from charging any fee

to the customers directly for services rendered by them on behalf of the bank.” These regulations did not apply to microfinance institutions constituted as NBFCs.<sup>21</sup>

This allowed banks not only to lend to MFIs but to use microfinance institutions for the delivery of their loans, implying a whole new layer of agency problems. The microfinance institution would sell their loan book to the banks and continue with monitoring and payment collection in return for a commission.

Accusations of harsh recovery methods being used by MFIs were quite common from early on as well, as both microfinance institutions and banks outsourced the recovery of loans. There were reports of recovery agents taking relatives of borrowers hostage, harassing and using physical violence to induce repayment.<sup>22</sup> These reports, along with a series of farmer suicides seemed to have triggered a first crisis in 2006 in Krishna district in Andhra Pradesh. The Krishna crisis and how peer behavior affects individual repayment behavior has been studied by Breza (2011).

Incentive structures, if not designed well, can create significant distortions in the agents choice between the unobserved quality of borrowers and the direct cost associated with doing business with the targeted group (see e.g. Aubert et al. (2009)). These issues are particularly relevant when studying for-profit institutions relative to non-profits. Clearly, in the Indian context, there was a strong push for reducing the costs of business and increasing the productivity of microfinance employees. As seen in figure 6, the number of borrowers per employee has steadily increased over time.

Clearly, as the number of borrowers per employee are rising, less and less time is available for capacity building. In an industry with staff-turnover rates as high as 30-40%, career concern incentives that could induce loan officers to focus on portfolio quality rather than volume are likely to be weak.<sup>23</sup>

Similarly, the anecdotal evidence suggests that MFIs in India neglected their broader missions to educate and build the capacity of their clients e.g. through financial literacy training. Clearly, these investments are costly and have a public-good component as competitors can free-ride, resulting in an equilibrium where no capacity building investments are made. This however, implies a lax association between the lending institution and the borrower, reduced down to be a mere business transaction. This lies in stark contrast to the Grameen Bank where borrowers’ are effectively owners of the bank. At institution level, little serious empirical work relating institutional performance and incentives akin to work like Ballou and Weisbrod (2003) has been carried out. This may be mainly due to the difficulties of obtaining the relevant data. Hartarska (2005) is a first paper that found no association between incentive pay and institutional performance. However, their random effects regression are estimated imprecisely due to a small sample and are subject to all sorts of endogeneity concerns.

The prevalence of incentive pay in the microfinance sector is however, widely acknowledged. According to Mckim and Hughart (2005), more and more MFIs use staff incentive schemes. They report that the proportion of institutions invoking incentives grew from 6% in 1990 to 63% in 2003. If loan officers’ performance pay is a function of the repayment performance of their borrowers (as was e.g. the case for the Grameen

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<sup>21</sup>RBI circular, RBI/2005-06/288.

<sup>22</sup>Telegraph India, <http://www.telegraphindia.com/1080607/jsp/nation/story9375576.jsp>, accessed on 14.11.2011.

<sup>23</sup>Sanjay Sinha, <http://www.microfinancefocus.com/what-world-can-learn-indian-microfinance-crisis>, accessed on 21.02.2012.

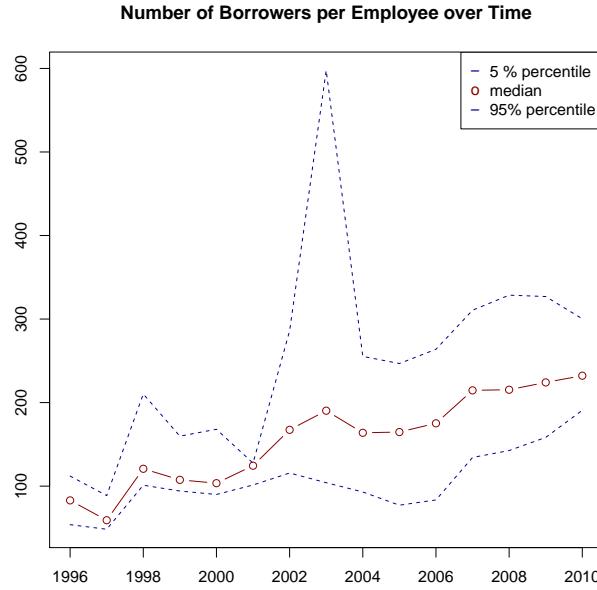


Figure 6: Number of Borrowers per Employee, Data from MIX Market

Bank), this may induce them to adopt harsh methods of recovery, as seems to have been the case in some of the AP suicide reports.

Mckim and Hughart (2005) also report that 70% of the MFIs implementing loan officer incentive schemes perceive that this led to a reduced focus on the targeted population.

**Theoretical Papers** There is a vast literature studying for-profit and non-profit institutions and their interaction in the market place. Here, we would like to motivate some of the theoretical questions that this literature has raised and show how this is relevant to the study of the microfinance industry.

A big theme in this literature is the role of incentive pay. The literature on non-profit organizations suggest that with motivated agents, incentives may be flatter. The extent to which this applies depends on the relative scarcity of motivated agents.

Besley and Ghatak (2005) show that there is a relationship between the strength of incentives and the extent of mismatch of the agents' motivation and the institution's mission. In particular, matching reduces the need for high powered incentives in a classical contracting problem with moral hazard. However, the difference in the extent of incentives depends on whether motivated agents are relatively scarce. In case of full employment in the for-profit sector, the mission-oriented workers' outside option is determined by what they could extract working in the for-profit sector. This outside option effect could lead to a smaller incentive pay gap between the for-profit and the mission-sector, as the mission-oriented sector needs to increase incentive pay in order to retain their staff.

Anecdotal evidence suggests that institutions do indeed compete for experienced field staff.

“Competition for individuals with significant experience in microfinance, banking and financial services segments is intense in the MFI industry. For fiscal 2008, 2009 and the six-month period ended September 30, 2009, SKS’ attrition rate - the number of employees who have resigned or been terminated divided by the average number of employees - was 24.6 per cent, 29.7 per cent and 22 per cent respectively.”<sup>24</sup>

Such competition may drive up the outside option and make it more expensive for mission-focused MFIs to retain their motivated agents. This may induce institutions to focus on more profitable customers.

Aubert et al. (2009) develop a simple model comparing the incentive schemes that for-profit MFIs need to give relative to non profit-MFIs with a more complicated objective function in a setting where agents are not motivated. The fact that non-profit MFIs want to reach out to the poor and can do that through a cross-subsidization scheme could require it to give loan officers stronger incentives. In their model, poor borrowers differ on two dimensions - wealth level and ability. Wealth and repayment probability are positively correlated. Both wealth and ability are unobservable to the institution, but loan officers can acquire information on both dimensions at a cost. Furthermore, loan officers can divert part of the repayment through underreporting. Lending to the able - wealthy and poor - is socially desirable, but only lending to the wealthy and able generates a surplus for a microfinance institution.

Hence, a for-profit institution would only want to lend to the wealthy and able. They can incentivize loan officers to obtain information on both wealth and ability level, by making their wage an increasing function of the repayment rate.

For a non-profit institution, the design of incentives is more complicated. The MFI wants to maximize the proportion of poor and able borrowers in its pool. Suppose thus, that a non-profit MFI offers a wage that is maximal at a repayment rate that would pertain to the desired proportion of poor able and wealthy able in its portfolio. This however, gives loan officers an incentive to only lend to the wealthy and able and underreport their repayment, diverting the difference. When the agent is informed, the MFI can not provide the agent with incentives to select adequate proportions of poor and able and wealthy and able borrowers, whenever the agent is able to divert repayments.

They show however, that the institution can provide the right incentives by making incentives increasing in repayment - this induces agents to acquire information on ability. By making wages additionally conditional on the poverty status of the client base (which the MFI verifies through costly audits), they can induce selection on wealth. The optimal contract will depend on the population proportions of the different types and on the respective costs. They show that there are parameter conditions, where it is possible to see both for-profits and non-profits using the same type of incentive schemes.

The important contribution of this paper is to highlight the fact that non-standard objective functions affect the optimal design of incentives in agency relationships.

The observation that staff turnover rates appear to be high may be subject of further work. As loan officers are delivering the services and acquire a lot of information,

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<sup>24</sup>The Hindu Business Line, <http://www.thehindubusinessline.com/todays-paper/article987749.ece?ref=archive>, accessed on 14.07.2011.

they may be able to extract rents pertaining to this private information. Dixon et al. (2007) points out that loan officers are subject to a lot of pressures from both, their branch level managers and the clients they serve.

At the same time, fraud has been widely observed in the microfinance industry. Basu and Srivastava (2005) reports that for SHG and other formal sector lending, clients may have to pay bribes in the range from 10%-20% of the loan amount. Similarly, loan officers in the microfinance sector have been accused of diverting significant amount of funds from borrower repayments.

“For instance, during fiscal 2009, SKS discovered 33 cases of embezzlement by employees aggregating to INR 70.80 lakh (\$140,000); 18 cases of misrepresentation by employees aggregating to INR 56.50 lakh (\$112,000); and one case of fraudulent misrepresentation involving INR 96.10 lakh (\$192,000) by an employee in collusion with a vendor.”<sup>25</sup>

Bond and Rai’s (2002) paper is motivated by reports on corrupt loan officers colluding with borrowers. They argue that the two most important sanctioning tools available to lenders are denial of future credit and social sanctions. However, with the latter they argue that the social sanctions are actually imposed by a third party. This generates a delegation problem with the potential of collusion between loan officers and borrowers.

The theoretical literature have provided a number of interesting insights on the internal organization of MFIs. We now turn to the discussion of the empirical evidence on this, which is relatively scarce.

**Empirical Papers** Méon et al. (2010) provide a simple theoretical model in which a mission oriented MFI - due to the need to provide incentives to discriminating loan officers - may accept that their loan officers discriminate. Driving this result is the setup whereby a loan officer derives disutility from serving customers against who he or she has a bias. In order to overcome these biases, the MFI would need to pay the loan officer a higher amount. These resources are thus, not available for extending further loans. If the welfare gain from extending further loans is larger than the cost from a discriminating loan officer, the MFI may prefer paying smaller incentivizing compensation, and letting its credit officer discriminate to some extent.

Agier and Szafarz (2011) argue that loan officers in the field discriminate against female microfinance borrowers. In particular, they use a detailed dataset from a microfinance institution in Brazil that covers the whole process of loan application and final loan approval. They use a partial least squares method to estimate the step-by-step loan approval process to account for differences in the loan sizes that would eventually be granted to male and female borrowers. They find a statistically significant difference in the loan sizes and argue that this difference can be attributed to loan officer discrimination.

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<sup>25</sup>The Hindu Business Line,<http://www.thehindubusinessline.com/todays-paper/article987749.ece>, accessed on 07.05.2011.

## 5.2 Funding Microfinance

The next section will discuss literature on the relationship between the microfinance institutions and its financiers. In particular, it will look at papers discussing whether and how the funding structure affects its performance or the way of conducting business.

Cull et al. (2009) suggest that equity funding is associated with lower outreach to poor borrowers (as proxied by loan sizes). Conning and Morduch (2011) study the role of social investors, such as individual lenders on Kiva, or big microfinance investment vehicles, who mix financial returns with social objectives. They argue that “the rapid expansion of microfinance would not have been possible without the support of philanthropic seed capital and policy entrepreneurs with pro-social motivations, even though—once they are established—many of these institutions can be run as profit-making institution.”

In the Indian context, we see that MFI lending was always primarily financed by debt, which may affect lending operations as suggested by theoretical contributions e.g. Ghosh and Van Tassel (2011a). This is in stark contrast to the Grameen Bank of Bangladesh which has a deposits to loans ratio of more than 1.5.<sup>26</sup>

In the Indian context, the only sources available were loans, donations, or other overseas funds. By classifying loans to microfinance institutions as priority sector lending, banks could fulfill their priority sector requirements and – given the remarkably low default rates – still earn profits on these loans.

A study from 2005, by the rating agency Crisil suggests that MFI lending quadrupled from 2002-2003 to 2004-2005. This expansion was increasingly being funded through the formal banking sector. MFIs borrowing from banks more than doubled from 13 to 28 percent.”<sup>27</sup>

The interest rate that the banks charged the MFIs was typically around the prime lending rate. This would translate one to one into the interest rates charged to the borrowers. Figure 7 depicts how the financial expenses as a percentage of assets evolved over time. This is a simple proxy for the interest rates that the MFIs needed to pay on their borrowing.<sup>28</sup>

The MIX Market has a dataset containing details of lending arrangements between microfinance institutions and banks. In the aftermath of the crisis, they show how the share of debt to equity in Indian MFIs deteriorated over time, furthermore they show how overseas funds and donations dwindled to zero.<sup>29</sup> According to MIX Market data, donations plummeted in 2008 from \$8 million to less than \$1 million, possibly due to the financial crisis along with an increasing commercialization of the industry.<sup>30</sup>

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<sup>26</sup>MIX Market, <http://www.mixmarket.org/mfi/grameen-bank/report>, accessed on 11.09.2011.

<sup>27</sup>Crisil Agency, [http://www.crisil.com/Ratings/Brochureware/News/pr150905\\_banking-sector-thrust-on-mfi-lending.pdf](http://www.crisil.com/Ratings/Brochureware/News/pr150905_banking-sector-thrust-on-mfi-lending.pdf), accessed on 08.08.2011.

<sup>28</sup>Financial Expenses are interest expenses and fees on financial liabilities; assets are average assets per financial year.

<sup>29</sup>MIX Market, <http://www.themix.org/publications/mix-microfinance-world/2010/12/how-has-growth-indian-microfinance-been-funded>, accessed on 11.11.2011.

<sup>30</sup>The drop in overseas fund may have been partly due to the RBI restricting access to this funding source in 2002. This regulation prevented MFIs that legally operated as NGOs (e.g. registered societies) from accessing relatively cheap overseas capital. In April 2005, after the finance minister urged the RBI to allow NGOs to raise external funds, it relented and allowed them to borrow up to \$5 million per year, per MFI once again.

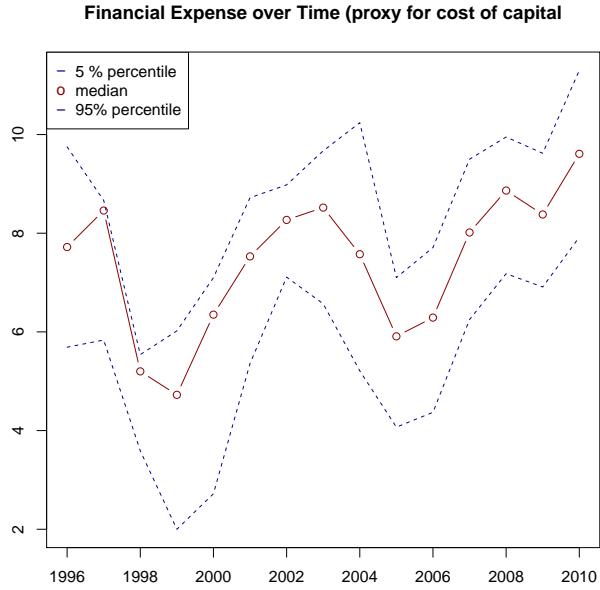


Figure 7: Financial Expense as % of Assets over Time, Data from MIX Market.

Some practitioners argue that the crisis in India was *caused* by the regulatory restrictions to access other types of funds. Elizabeth Rhyne, managing director of the Center for Financial Inclusion at ACCION International, argues that the lack of access to deposits lead to an unbalanced portfolio that was prone to deteriorate in light of any crisis. She claims that “When clients have a place to save (and banks have an interest in promoting savings) they may be less likely to fall into debt traps.”<sup>31</sup>

In order for MFIs to diversify their sources of financing and to reduce their cost of capital, they had three options: raise equity, accumulate retained earnings or take deposits. The following discussion addresses the how and to what extent these have been relevant.

**Raising equity** As equity investments were restricted to institutions registered as NBFC<sup>32</sup>, institutions needed to transform their legal status in order to tap into this funding source. We do not have much data on legal status and its relationship to financial expenses. The most reliable data comes from the MIX Market, who recorded a total of 19 transitions of legal status by institutions in India. Out of these 19 transitions, 12 were by institutions becoming NBFC. According to MIX Data, 2005 and 2006 alone 6 institutions, accounting for around 190 million in loans (more than 25% of the market in 2006), transformed into NBFC.

The years 2008 and 2009 saw a total of venture capital deals of at least \$200 million, which corresponds to roughly 10% of the market in 2008. The biggest deal by far, was

<sup>31</sup>Elizabeth Rhyne, managing director of the Center for Financial Inclusion at ACCION International, [http://www.huffingtonpost.com/elisabeth-rhyne/on-microfinance-whos-to-b\\_b\\_777911.html](http://www.huffingtonpost.com/elisabeth-rhyne/on-microfinance-whos-to-b_b_777911.html), accessed on 14.02.2012.

<sup>32</sup>or cooperative banks, or NBFC which are non-profit

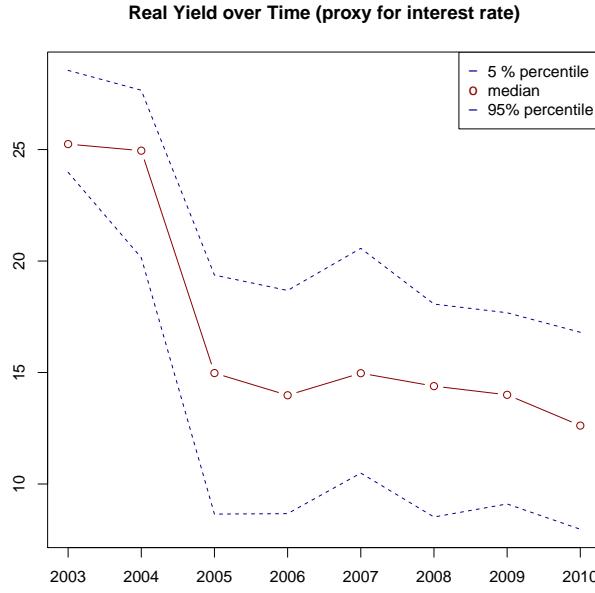


Figure 8: Real Yield over Time (proxy for interest rate), Data from MIX Market

a \$75 million investment by Sandstone Capital into SKS.<sup>33</sup>

**Accumulating retained earnings** Institutions can accumulate an own funding base through generation of profits. Since from early on, most institutions were non-profits, the non-distribution constraint of non-profits made it possible for institutions to make profits to be reinvested. Hence, profits could simply be used to expand operations and need not be in conflict with a poverty maximization mission as will be discussed later. Institutions making profits and the role that interest rates play here has been the subject of heated debates. Yunus argues that “The [interest] rate should be low enough to support income generation for poor people rather than generating income for investors.”<sup>34</sup> In fact, Figure 8 suggests that real interest rates have fallen in recent years. It plots the real yield on the loan portfolio, which can be considered as a rough proxy of interest rates.<sup>35</sup>

At the same time, operating expenses as a percentage of assets appear to have come down. The reason behind this drop may lie in the increase in the number of borrowers per MFI employee (see figure 6). However, there is a lot of variation in this measure with the number of borrowers per employee being very low for small MFIs in the dataset.

The extent to which excessive profits were made “on the backs of the poor” can

<sup>33</sup>Livemint, <http://www.livemint.com/2009/07/13221413/EB14CCD2-F8CC-4906-AB45-7F3ABF121722ArtVPF.pdf>, accessed on 06.06.2011.

<sup>34</sup>The Times, <http://business.timesonline.co.uk/tol/business/management/article6181546.ece>, accessed on 15.07.2011.

<sup>35</sup>This is computed as (Interest and Fees on Loan Portfolio / Loan Portfolio, gross, average - inflation rate)/(1+inflation rate), in nominal terms the yield has increased from 2005 - however, this period is one with steady rises of the inflation rate from 5% to 12%.

hardly be assessed here as we lack the relevant data. We will discuss some models suggesting that even not-for-profits may generate profits for cross-subsidization purposes to reach the poor. In general, the MIX Market cautions, arguing that “for-profit does not mean more profitable; and non-profit does not mean low cost.”<sup>36</sup>

With regards to interest rates, it needs to be noted that they may not reflect the actual cost that borrowers bear in accessing these loans. Data from a very recent survey by Shukla et al. (2011) suggests that a key value added that MFI lending offers, versus SHG or formal lending, lies in lower transaction costs for the borrower (less travel time, time spent at meetings, less spent on bribes). It could be that the growth of the sector heavily reflects the fact that borrowers prefer MFI loans to other means of finance as the cost of accessing are lower.

The lack of transparency over interest rates and possible hidden surcharges may be a more serious issue as “a 15% flat rate on paper could translate to 35% on a closer look.”<sup>37</sup> This is especially important when we realize that many targeted borrowers are limited in their literacy and numeracy. An important objective of microfinance regulation should be addressing customer protection and bolstering transparency. In fact an NGO, MFTransparency, has sprung up to address this exact issue. They collect and verify actual loan data and compute the real APRs associated with loan contracts. Clearly, participation is voluntary and hence we are dealing with a nonrandom sample of institutions. However, looking at the institutions that choose to participate across countries we observe that the interest rates of participating Indian MFIs are by no means unusually high or low (see figure 9).

**Deposits** This last route to diversifying the funding base was never actually opened to India’s microfinance institutions. In order for an institution to accept deposits, they would have to transform into a registered NBFC with a minimum net owned fund (equity and retained earnings) of at least INR 2 crore (about \$4 million). Furthermore, the institution would then need to obtain an investment grade rating from an approved rating agency. The costs of RBI regulation would come at the benefit of being able to collect deposits and thus, reduce financial expense and to expand the set of products (offering savings products). The hurdle of the minimum capital requirement and the need to obtain an investment rating was considered the major problem. That is why even today the share of depositors to borrowers is only around 10% of microcredit clients.

The important theoretical question is, why one would suspect that funding structure matters for business conduct. Capital from lenders or donors may come with strings attached, such as imposing condition on the poverty line of the borrowers or similar. Hence, the way microfinance is funded, may have implications on the institutions conduct of business. Financing microfinance is often times closely related to fears of mission drift, whereby lenders move away from the originally targeted population.

This sentiment is captured in an article by Muhammad Yunus:

“To ensure that the small loans would be profitable for their shareholders, such banks needed to raise interest rates and engage in aggressive mar-

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<sup>36</sup>The MIX, <http://www.themix.org/publications/microbanking-bulletin/2011/03/myths-and-reality-cost-and-profitability-microfinance>, accessed on 11.11.2011.

<sup>37</sup>The Times of India, <http://articles.timesofindia.indiatimes.com/2006-03-15/hyderabad/27810025>, accessed on 15.07.2011.

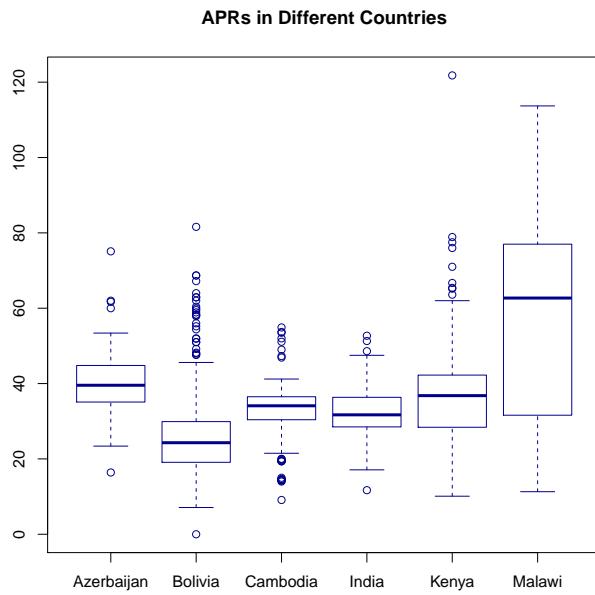


Figure 9: Box Plots of the Recorded APRs of MFIs in various Countries, Data from MF Transparency

keting and loan collection [...] The kind of empathy that had once been shown toward borrowers when the lenders were nonprofits disappeared. The people whom microcredit was supposed to help were being harmed.”<sup>38</sup>

Empirically, there have been few studies on the relationship between funding- or ownership structure on the financial- and social performance of microfinance institutions.

Jansson (2003) studies the funding structure of the microfinance sector in Latin America and how it has evolved. As the sector there is particularly mature, it may help to draw some insights for other regions in the world. He points out that funding is one of the most severe constraint that lies at the heart of institutions seeking other forms of legal status.

Bogan (2011) studies the impact of an institutions funding structure on its sustainability. She looks at the funding structures of MFIs across regions with a panel data set (albeit just containing two observations per MFI), and studies what effect the source of funding has on an institutions operational sustainability. The latter measures the ratio of financial revenues to operating expenses, including expenses on loan losses. The focus is on institutions with assets of at least \$1 million reporting to MIX Market, hence selection bias is a serious concern as most institutions in this data set are established ones. Another major caveat is that she does not have data on legal status over time. However, as the choice of legal status is a core variable determining access to different types of funding sources, this is an important omitted variable. Her

<sup>38</sup>Muhammad Yunus, <http://www.nytimes.com/2011/01/15/opinion/15yunus.html>, accessed on 03.11.2011.

main observation is that grant capital is negatively related with Operational Sufficiency. This has been observed in Cull et al. (2009) and Cull et al. (2009) as well. However, one needs to be careful as she also observes a negative correlation between share capital and Operational Sufficiency. The covariates regarding funding structure may pick up effects of competition on financial performance (as e.g. studied in Assefa et al. (2010)).

In any case, there are no sound empirical contributions that identify the implications of funding structure on MFI behavior, as a guiding theoretical framework may be lacking. In the literature on charity and on foreign aid, there are extensive discussions on how aid should be distributed, in form of grants or loans going as far back as Schmidt (1964).

However, recent theoretical work in Ghosh and Van Tassel (2011a) and Ghosh and Van Tassel (2011b) highlights that the study of funding forms may shed light on a range of issues concerning business conduct of institutions, which may be falsely seen as mission drift.

Ghosh and Van Tassel (2011a) study the relationship between donor funding in an environment with asymmetric information, where donors lack information regarding the costs of MFIs. The donors are altruistic and want to minimize poverty, giving out loans or grants to MFIs. They do not value any financial return that could be earned from their operations, but might demand one in order to screen out high cost MFIs. MFIs also care about poverty but care only about their own impact on poverty and therefore will not exit the market even in favor of a lower cost competitor.

MFIs have to pay operating costs, which are covered through interest payments from borrowers. Part of these operating costs are financial expenses. Donors only want low cost MFIs to operate as this maximizes the returns that accrue to the borrowers (and thus reduces poverty).

The authors assume that a lender cannot charge more than could be paid by the borrower with lowest productivity receiving a loan. This implies that the maximum interest rate is decreasing in the number of borrowers that an MFI serves. Hence, the donor can demand a financial return and a screening fee that is decreasing in market size. Only low cost MFIs will be able to meet certain combinations of financial return and number of borrowers.

As in a classical screening model, they show that there are two types of equilibria: a separating equilibrium, where all donors demand a financial return to screen out high cost MFIs and a pooling equilibrium where donors donate to all MFIs to reduce their general operating costs. However, there is a critical point from which onwards all additional donor funds go to an alternative poverty reduction initiative.

The authors argue that the relative abundance of donor funds determines which equilibrium will result (this requires donor coordination). In any case, each equilibrium will result in distinctive funding structures for the MFIs. But more importantly the contribution of (Ghosh and Van Tassel, 2011a,b) is to highlight that donors demands for financial return may not imply a mission drift away from reducing poverty. In fact, it may yield to more poverty reduction as inefficient institutions are screened out.

Studies like Hartarska (2005) and Mersland and Strøm (2008) try to see whether the funding structure of institutions has an effect on their performance. The latter argue that the fact that MFIs with shareholder equity have larger scale has no relation to ownership type, but to legal constraints restricting the collection of savings. This

hints to the previously mentioned caveat with all this literature in that it fails to take into account that legal status choice (as studied in Glaeser and Shleifer (2001)) is endogenous and the choices observed may be the result of legal constraints. Their observations strengthen the anecdote that “for-profit does not mean more profitable; and non-profit does not mean low cost.”<sup>39</sup> However, as with all these studies, they essentially run non-identified regression models. Hence, any correlation is at most suggestive but further work may be needed.

### 5.3 Mission Drift

As previously mentioned, the issue of mission drift may be closely related to how microfinance is funded. In particular, Ghosh and Van Tassel (2011a) suggests that lending to MFIs while asking a financial return may in fact lead to more poverty reduction.

This implies that there is need for a clear definition of what mission drift is. ? identify mission shift as a shift toward serving non-poor clients with larger loans for neither cross-subsidization reasons (as in McIntosh and Wydick (2005)) nor progressive lending reasons. Hence the typical proxy variable “average loan size” used to measure outreach may not capture this notion of mission drift. ? argue that mission drift may result from “the interplay between their own mission, the cost differentials between poor and unbanked wealthier clients.” They set up a very simple model of mission drift in microfinance. The main driver of the results is the explicit outreach-only focus of the lender.

Lenders are assumed to maximize a weighted sum of total outreach by number of loans, weighted by the poor/less poor status of borrowers. The weight could be considered a “preference for mission drift”. They do not care at all about loan size and therefore if their only cost was per dollar lent would offer an infinite number of infinitesimal loans.

It is then assumed that the less poor must receive a minimum loan size in order to start a business, while the very poor have no such requirement. However per-loan costs for the less poor are lower than for the poor. Assuming linear cost functions then, the lender will tend to only serve either poor or rich clients, depending on the trade-off between unit costs and its preference for the poor. There is an interior equilibrium where the MFI is indifferent and clearly also would be with convex costs by borrower class. If the rich borrowers are actually profitable rather than costly, they may actually be served just for cross subsidization purposes as in McIntosh and Wydick (2005).

The conclusion then, is that supposedly “drifted” MFIs may either not have a sufficiently strong preference for the poor to overcome the transaction cost differential (classic mission drift) or may just be using the non-poor to cross subsidize their lending to the more costly poor, so care should be taken in empirical studies of mission drift.

Ghosh and Van Tassel (2008a) on the other hand model an MFI’s objective as not maximizing profits- or the number of clients, but to optimize a weighted poverty gap. This gives them an incentive to lend to the poorest of the poor. They assume that the poorest require a small loan, whereas the poor require larger loan sizes. Each loan disbursal involves some transaction costs; the conflict in their model lies between the

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<sup>39</sup>The MIX, <http://www.themix.org/publications/microbanking-bulletin/2011/03/myths-and-reality-cost-and-profitability-microfinance>, accessed on 11.11.2011.

transaction costs on small loans and the income generated from larger loans. They then study what the MFI's lending strategy is in equilibrium, and how this depends on the interaction of heterogenous MFIs with different sources of funding. In particular, they compare the setting where microfinance donors share in the poverty reducing mission and when they are profit seeking. If the donors shift, it will be more difficult for an MFI to obtain external funding - hence, in order to continue operating, they will have to shift some of their operations to larger loans (i.e. focus on less poor).

They characterize situations when it is optimal for an institution to lend more to the less poor in order to reduce cost of external funds. They show that "this tradeoff between financial return and poverty return is aggravated by the competition between the MFIs for the investor's funds." There are quite a few empirical papers that try to assess whether mission drift occurs and what seem to be the driving factors behind it. For lack of alternatives, most of them use average loan size as proxy variable despite the previously mentioned problems that it may not actually capture mission drift. Papers such as Cull et al. (2007) argue that a trade-off between profitability and serving poor borrowers seems to emerge. They find evidence that raising fees does not improve profitability, while there are few benefits to reducing operational costs, when serving comparatively better off clients. In Cull et al. (2009) they find that (for-profit) microfinance institutions seemingly serve customers that are better off as compared to NGO MFIs. This, they argue, compares well to Gonzalez and Richard Rosenberg (2006) who find a strong link between loan size and outreach.

Hermes et al. (2011) use a panel of 435 microfinance institutions. They construct a measure of an institution's efficiency by performing a stochastic frontier analysis, which essentially compares the cost structure of an MFI to the industry benchmark. They use this to study the relationship between efficiency and outreach, which is proxied by loan size. They find a quite robust negative relationship between outreach and efficiency. This complements the observations in Cull et al. (2007).

Cull et al. (2009a) assesses to what extent competition between formal banks and microfinance institutions affect the latters' profitability and outreach. They see that micro banks are more likely to lend to poorer clients (proxied by loan size) in environments with strong formal bank penetration. This effect is pronounced for MFIs relying on commercial capital (e.g. bank loans) and focusing on individual rather than solidarity lending methods. This observation could be due to the nature of financial regulation in the particular countries. However, they find no strong support in favor of these.

In general, the empirical papers may help us understand existing patterns concerning mission drift, but we feel there is scope for further work on the nature and causes of mission drift.

## 6 Microfinance Regulation

In this last section, we outline some thoughts on regulation of microfinance going forward. These are by no means exhaustive (for a careful response to the Indian MF bill, see Sane and Thomas (2011), for example), and we have already raised some concerns about the bill in 2.4. Here, we give a simple overview of the costs of regulation in the MF industry, and the growing literature on the role of credit bureaus, which

seem to be forming a key part of the regulatory response to over borrowing.

Regulation typically is accompanied with more cost and may inhibit growth as suggested by Cull et al. (2009b). We will review the literature around this in a first section. In a next section we focus on the role of legal- and profit status on the relative performance of institutions, highlighting the need to understand that legal status is an endogenous variable (see e.g. Glaeser and Shleifer (2001)). We then discuss how credit information bureaus are a particular form of intervention, which is particularly important for the sustainable development of any financial sector.

In the broader field, there are a few studies that try to assess the cost of formality. De Mel et al. (2011) run a field experiment in Sri Lanka, where they simulated formal registration of small informal businesses. They vary incentives to register across treatments to indirectly infer the potential costs and benefits of formality. They find that the actual cost of registration are modest and registration seem to not have significantly increased the tax burden. In one of the treatments, where the firms are compensated for the direct registration costs, almost no firm would opt to register. However, with stronger incentives corresponding to two months' profits for the median firm in their sample, they observed significant take-up. They argue that this provides evidence that the reason why few firms choose to register may not necessarily be the burdensome costs, but the perceived low benefits. They confirm this with a follow up survey 12-18 months after registration took place. They find that registered firms fare no better than their informal peers. This suggests that while the cost of formality may be low, the benefits may be even lower.

Ahlin et al. (2011) on the other hand study to what extent the macro-economic or institutional context matters for whether microfinance may flourish. They perform (outlier robust) quantile regression on a panel data set of 373 MFIs, merged with country-level economic indicators. Their key findings indicate that the macro-economic context does matter. In particular, they see that a country's general financial development and institutional development is a key indicator for operating costs, resulting in less default and lower interest rates charged.

In the following we review the empirical literature estimating the impact of regulatory costs on the microfinance industry, with a particular focus on the literature regarding credit-information bureaus and institutionalized information sharing.

## 6.1 Cost of Regulation

The Indian microfinance sector grew in an environment with little oversight and regulatory burden. In the aftermath of the crisis, outcries for regulation were loud and as mentioned earlier, this regulation may go to far. Economists caution:

“But politicians also need to be wary - in taking aim at the occasional over-step, they may find themselves inadvertently destroying the whole business, at great cost both to the poor, and the financial institutions that have stepped in to work with them.”<sup>40</sup>

Regulators have to walk the thin line between imposing costs on a sector due to the evident need for regulation, while at the same time not discouraging institutions to

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<sup>40</sup>Indian Express, <http://www.indianexpress.com/news/help-microfinance-dont-kill-it/716105/>, accessed on 10.11.2011.

compete and innovate. In the Indian context, MFIs fear more regulation under the RBI as they “have flourished in [the freedom] to innovate and expand. The RBI takes ages to approve bank branches, while MFIs open several every month. MFIs have cheap, flexible staff, but as banks they will face high, unionized wages and inflexibilities.”<sup>41</sup> There are potential trade-offs that need to be understood and quantified in order to make informed decisions on the type of regulatory environment to adopt. In the context of microfinance, the regulatory burden and the associated costs are not well understood.

Self-regulation may be a cost-effective way, but it is questionable whether this really protects borrower interests. Consider the Indian case where self-regulation attempts were initiated by late 2009. The members of the MFIN network of microfinance institutions have agreed to adopt a code of conduct where members would not offer above INR 50,000 (about \$1,000) to any single borrower and that no more than three lenders would lend money to a single individual. This caps the total level of indebtedness per individual at INR 150,000 (\$3,000).<sup>42</sup> The Code of Conduct would be enforced by the MFIN network by establishing redressal mechanisms and an ombudsman system. However, the ombudsman system suggested by the industry had serious flaws as, for example, conflict resolution would “require the presence of parties to the dispute in which case, such meetings shall normally be held at the office of the Ombudsmen unless the disputing parties mutually agree to any other place for such meetings.” This, along with the need to provide extensive written documentation, may not have been feasible for the targeted population given limited literacy.

Cull et al. (2009b) study the relationship between an MFI’s profitability, its outreach and the extent of prudential supervision. They construct a cross-sectional dataset of 245 biggest microfinance institutions worldwide for which they have variation in extent of supervision (regular onsite or interval onsite visits) within country. This is important, as it means there is variation in supervision e.g. within groups of MFIs. The treatments in this framework are the type of onsite visits that an MFI is subject to. Clearly, this assignment is non-random, which they try to address with various instrumental variable regressions. In particular, they use the charter status (e.g. NGO or NBFC) as instrument for supervision, as they argue that “charter status was determined at the outset of the creation of each MFI, prior to and without substantial consideration for whether the MFI would face supervision.” Clearly, the authors are not able to shed all doubts regarding excludability of instruments, which needs to be kept in mind. They find that institutions that are primarily financed by bank loans and other commercial capital, absorb the cost of regulation but it led to a portfolio adjustment. They end up lending larger loan amounts and the percentage of loans to female borrowers in their portfolio goes down. For institutions that finance their operations through grants or donations or other non-commercial capital, they observe that regulatory oversight leads to a drop in profitability however, the loan portfolio does not change.

Hence, there is a hidden cost to regulation which is reflected in lower outreach. This needs to be weighted against the benefits of improved client protection and financial

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<sup>41</sup>Economic Times, <http://articles.economictimes.indiatimes.com/2010-08-01/news/27624366>, accessed on 17.09.2011.

<sup>42</sup>MFIN Code of Conduct, <http://www.sharemicrofin.com/images/MFINCodeofConduct.pdf>, accessed on 14.11.2011.

stability, that typically goes with financial regulation.

Mersland and Øystein Strøm (2009) focus on the role of corporate governance structures of MFI's. They work with a self-constructed dataset drawn from microfinance rating agencies between 1998 and 2007. This builds on to survey work previously discussed in Hartarska (2005). They perform random-effects regressions to study the relationship between MFI financial performance and outreach and a set of covariates relating to corporate governance. Among them are variables classifying ownership type, board presence, CEO characteristics and extent of regulation. They find that bank regulation appears to have no effect neither on financial performance, nor on outreach. Similarly, profit status or ownership type seem not to matter. Covariates that appear to be correlated with performance are gender of CEO and presence of internal audits. Despite endogeneity concerns, their observations highlight the need for further work regarding the interplay of an institutions corporate governance and its performance in the market place.

## 6.2 Information Sharing and Credit Bureaus

The Indian crisis has highlighted that expansion of microcredit needs to be supported not only with a sound regulatory infrastructure, but also through supporting institutions such as credit bureas, that foster information sharing and can thus contribute to maintaining a good portfolio quality.

In 2005, it was noted that "Credit information bureaus might seem like the cutting edge of banking reform in India. The maximum benefit would accrue from the easy availability and sharing of credit histories to the honest farmer."<sup>43</sup>

However, despite the RBI fearing multiple-lending from early on due to concentration of lending activities in the south, it took almost another five years until such bureaus - privately run - would eventually be established. Even within institutions, multiple-lending was a serious concern. MFIs and banks increasingly started to turn to information technology, such as disbursing smart cards that would carry the thumbprint of borrowers.<sup>44</sup> The effect of the introduction of such technology on repayment performance has been studied by Giné et al. (2010).

In any case, by 2009 the level of indebtedness of many households in the southern states may have reached very high levels already. Srinivasan (2009) estimated that "the average debt outstanding is estimated at INR 49,000 (about \$1000) per household, which is about eight times the national average MFI loan outstanding and about 11 times the average member-level loan outstanding in case of SHGs.

A particular regulatory intervention that has been highlighted in the previous discussion concerns establishing formal information sharing mechanisms. Information sharing between lending institutions is an important characteristics of well-developed credit markets, as it allows certain mechanisms, such as dynamic incentives, to be easily invoked. The current proposed legislation in India gives the regulator discretion to mandate lenders to join credit information bureaus. This legislation is aimed to address issues of over-indebtedness that may have resulted from multiple lending.

<sup>43</sup>The Economic Times, [http://articles.economictimes.indiatimes.com/2005-01-29/news/27474544\\_1\\_kisan-credit-cards-rural-areas-credit-history](http://articles.economictimes.indiatimes.com/2005-01-29/news/27474544_1_kisan-credit-cards-rural-areas-credit-history), accessed on 15.07.2011.

<sup>44</sup>The Economic Times, <http://articles.economictimes.indiatimes.com/2007-05-01/news/28463514>, accessed on 15.07.2011.

The introduction of credit bureaus comes at a cost to the microfinance institutions as well. Hence, it is important to understand the relationship between the benefits and costs to assess the right point in time, when it becomes necessary to establish formal credit bureaus. This section discusses theoretical, empirical and experimental evidence highlighting this topic.

McIntosh and Wydick (2005) study the effect of asymmetric information, whereby lenders do not observe the borrowers discount factor, in a model with dynamic incentives. Similar to Hoff and Stiglitz (1997), they argue that entry creates a classical externality if information on levels of indebtedness is not being shared. This will induce impatient borrowers (whose incentives to repay loans are already weak), to obtain multiple loans which will drive up equilibrium interest rates. With a lack of information sharing it could be, that entry by more lenders will exacerbate these problems. This highlights one important aspect speaking in favor of credit bureaus.

de Quidt et al. (2011) studies the role of information sharing in their enforcement model under competition and with a monopolist lender. They show that competition without information sharing leads to credit rationing. This rationing is necessary in order to maintain repayment incentives. The situation is quite different with a monopolist lender, which internally shares information on borrower's repayment performance. This allows the monopolist to invoke dynamic incentives. de Quidt et al. (2011) show that the situation with such a monopolist may dominate the case with free entry, but no institutionalized information sharing.

Ghosh and Ray (2001) highlight that credit markets may still function without any form of information sharing. Their theoretical framework includes adverse selection (some borrowers always default and must be screened out) and ex-post moral hazard (good types must still be given sufficient incentives to repay). Lenders create an incentive for borrowers to repay by an initial screening period that must be passed by all new borrowers, thus a default would force the borrower to start again with another lender. However it must be rational for lenders to use this screening technology - if there are no bad types a lender would prefer to free-ride on others' enforcement. Thus the presence of bad types may be necessary for a credit market equilibrium. The paper also considers the case where the lender may be able to gather borrowers' histories at a cost, in which case there may be a no-information or a full-information equilibrium.

As Ghosh and Ray (2001) highlight that credit markets may function in such an informational environment without any form of information sharing, it remains an open question when formally institutionalized information sharing becomes necessary. Clearly, the establishment of credit bureaus is costly as it requires investments in technology by lenders. Lenders in India fear, that this may be difficult to manage especially for smaller MFIs. This has been pointed out recently in Baquero et al. (2012).<sup>45</sup>

The scope of information sharing can reach from negative information sharing, i.e. sharing whether a borrower defaulted, to positive information sharing in which information regarding well-performing loans is shared. Furthermore, the length of a borrowers' credit history shared may vary and whether details on loan sizes and loan terms is disclosed. For group lending arrangement, a special difficulty lies in whether an individual's performance or the performance of his group is recorded.

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<sup>45</sup>Micro Matters, <http://www.sa-dhan.net/Resources/Micro%20Finance%20Matters-August%202011%20Issue%20XV.pdf>, accessed on 14.11.2011.

Information sharing can be of informal nature, through “credit officer lunch” (McIn-tosh et al. (2005)), or formally institutionalized through established credit bureaus. The latter can be publicly or privately established. In the case of private credit bureaus, it is important to study the incentives that lie behind why a set of institutions chooses to establish a bureau.

As India is still rolling out a national identification system, installing a credit bureau privately may be costly. Up to late 2009, neither public nor private credit bureaus had been formally established, implying that

“A poor but earnest borrower currently has no way of monetizing his good credit history, by way of easier terms and rates. That must change.

All this points to the urgency of the government making some substantial investments to create computerized databases of rural populations, their assets and commercial conduct including as borrowers.”<sup>46</sup>

Borrowers are likely to benefit from negative information sharing as interest rates for individuals who have not experienced a default in the past will be lower than for those who experienced a default in a competitive environment. Expected benefits for the lenders include an improved portfolio quality and possibly, lower screening costs. However, solely negative information sharing does not allow borrowers to capitalize on a good reputation. They can not transfer a good standing obtained with one lender to another lender, thus, creating a form of switching costs for borrowers.

This is one of the reasons why lenders may be hesitant to adopt positive information sharing, as this could intensify competition as lenders could try to “skim the cream” from each others’ portfolio (Gehrig and Stenbacka (2007)).

De Janvry et al. (2010) study the effects of the introduction of a credit bureau had in Guatemala on lending outcomes from both sides, i.e. the lenders and the borrowers. They exploit two facts: first, the lender, a big microfinance institutions, rolled out the credit bureau sequentially across their branches and second, did not inform borrowers about the fact that they were connecting their systems to the credit bureau and would successively use it in their credit scoring. They then conducted a training campaign informing 5000 borrowers in randomly selected centers. This creates a unique combination of a natural experiment with a field experiment, allowing them to study both the supply- as well as the demand side effects of this informational shock. As the training was administered during a loan cycle, they can study the extent to which moral hazard is mitigated and, they can study adverse selection and group formation issues in consecutive loan cycles.

This contribution is distinct from Karlan and Zinman (2009), who try to disentangle moral hazard and asymmetric information effects in a consumer credit experiment in South Africa. While Karlan and Zinman (2009) try to indirectly influence the level of asymmetric information by randomly assigning interest rates, the introduction of the credit bureau in De Janvry et al. (2010) provides a direct informational shock.

De Janvry et al. (2010) observe that the credit bureau had marked effects on the lender and its client base. For existing borrowers, they observe that individuals as well as borrowers in solidarity groups are much more likely to drop out. The borrowers

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<sup>46</sup>Economic Times, <http://articles.economictimes.indiatimes.com/2005-01-29/news/274745441kisan-credit-cards-rural-areas-credit-history>, accessed on 15.09.2011.

who drop out (either voluntarily or because they are expelled) have characteristics that are positively correlated with weak performance. As a result, groups become smaller and live longer. The fact that existing groups become smaller is merely mechanical. However, they also observe that newly founded groups tend to be significantly smaller. They interpret this as evidence that the bureau causes lenders to rely less on joint liability for screening, thus also highlighting the role that group lending may play at the selection stage. The borrowers could be behaving strategically, trying to be in small groups as this will mean that their repayment performance at group level (which is what the credit bureau reports), will be a less noisy signal of their individual performance.

Aside the group size, they observe that loan sizes are significantly larger. This is a notable observation, as it is suggested in Baland et al. (2010), that there is an interesting relationship between the largest loan that can be extended in joint liability groups compared with individual lending.

They find that the introduction of the credit bureau increased efficiency in the screening process significantly. Credit officers in treatment centers screen significantly more borrowers. Due to better repayment performance, there is a big jump in profits. Overall, their contribution highlights the significant efficiency gains that can be achieved through the introduction of a credit bureau through a general reduction in the level of asymmetric information.

Giné et al. (2010) study the impact of the introduction of fingerprinting devices by a provider of agricultural credit in Malawi through a randomized control trial. The setup implies that there are two interesting margins, namely ex-ante moral-hazard, as measured by the extent to which borrowers divert loans away from the agricultural input for which it was intended. The second margin is the extent of adverse selection, as measured by the size of the loan that borrowers choose to take out.

The introduction of such identification devices improves the lenders ability to invoke dynamic incentives, which is particularly relevant in contexts where formal information sharing is hindered due to lack of unified identification systems. They find that the use of these devices lead to significantly higher repayment rates for borrowers, who were predicted to be among the borrowers most prone to default. They adapt their behavior by taking out smaller loans. They interpret as evidence of less adverse selection, albeit on the intensive margin. Low quality borrowers, i.e. those would have taken out larger loans without the fingerprinting devices respond by taking out smaller loans. At the same time, there appears to be a reduction in the extent of moral hazard as borrowers are using more of the credit for agricultural inputs (for which the loans are intended).

As mentioned earlier, the design of information sharing arrangements in contexts in which group lending is widely used is not a trivial one. In the Guatemalan case discussed earlier, the credit bureau would report the performance of the group in an individual's record, even though group performance is a noisy signal of the individual borrower. However this form of information sharing may strengthen joint liability or other group mechanisms.

On the other hand, reporting of individual behavior is more valuable for a borrower. This however, can undermine important group mechanisms such as voluntary insurance, screening and peer monitoring.

McIntosh et al. (2009) study these design issues and their impact on incentives in a laboratory experiment in the field through variations of public good provision games,

which could mimic repayment under a joint liability clause. They try to capture a selection process whereby a group leader gets information on the past contributions of members. The leader is able to eject members however, at a cost to himself. Clearly, he has an incentive to eject members who are contributing low amounts as this is likely to increase current period payoffs and may also increase future payoffs as, as reassessments is based on contribution reputation. Ejected members may be reassigned however, there is a chance that they may drop out of the game for some periods. Hence, being ejected comes at an expected cost. The group leader will be reassigned for sure. McIntosh et al. (2009) vary the extent to which group contribution levels over individual contributions are reported across three treatments. In the first, ejected members are simply randomly reassigned to newly generated groups. In the second treatment, members are reassigned solely based on individual contributions, i.e. agents with high contributions are more likely to be reassigned to a new group. For group leaders, this implies that contribution incentives are strengthened, while incentives to eject group members are weak. In the third treatment, new groups are formed by members who came from groups with highest average contributions, i.e. if ones group had high contribution levels, a member is more likely to be reassigned to a group that comprises members who came from groups with high average contribution levels. Here, incentives for leaders to eject and contribute are strengthened as the group's performance determines the changes for reassignment. The games allow them to distinguish the effects of individual versus group incentives. This is clearly an important issue to a lender, as they would like to design credit bureaus in such a way that individual incentives do not conflict with the extent to which groups function well e.g. for screening members.

Their results suggest that there are no strong differences between the group reputation versus individual reputation treatment. However, in the former, leader's ejection decision becomes more responsive to individual behavior. Hence, the results suggest that there are no hidden costs of moving from group reporting to individual reporting.

## 7 Conclusion

We set out this review to study the Indian microfinance crisis by focussing on the academic perspective of the issues that were highlighted to be at the core of the crisis. Among them were a lack of regulation and client protection mingled with a growing sense of frustration over increasing profit-orientation. The microfinance market has evolved into one in which for-profits operate side by side with non-profit NGOs, trying to extend financial services to non-banked poor. Such a market situation is unique and throws up many interesting questions regarding market structure and industrial organization of this sector, which deserve to be studied carefully by academics as well as policy makers.

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