Information Sharing among Competing
Microfinance Providers[*]

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Abstract

It is now well understood that information sharing among lenders can increase the repayment incentives of borrowers and constrain the information based monopoly power of lenders. However, credit bureaus and other formal institutional mechanisms, which allow for easy information exchange on borrowers in most developed countries, are nearly absent in contexts where microfinance providers are most active. As competition among such providers has increased, it is unclear whether private incentives to share information among competing microfinance institutions (MFIs) will provide the sort of disciplinary check on borrowers that formal information sharing mechanisms do. Moreover, MFIs, are, by and large, non-profit institutions which face substantial and diverse pressures from financiers: to attain solvency, to extend 'outreach' i.e., reach poorer borrowers by keeping interest rates low, or to maximize their 'throughput' i.e., the volume of lending. Their objective functions are therefore qualitatively different from those of profit maximizing banks, which have been studied most in the literature.

This paper examines the private information sharing incentives of MFIs under two alternative formulations: one where the MFI seeks to maximize the welfare of its borrowers; and another where it seeks to maximize the volume of its lending, or 'throughput'. Under each regime, we first examine the optimal loan contract when the MFI is the only lender and then look at the consequences of competition. These results are contrasted with the more familiar case of a profit-maximizing bank. We show that the two regimes imply very different outcomes. Specifically, when MFIs maximize volume of loans, borrowers are offered loans which are strictly larger than the loan size at which borrower welfare is maximized. Competition among MFIs reduces this inefficiency and improves borrowers' repayment incentives. In contrast, competition has no effect on the loan contract or on borrower incentives if MFIs seek to maximize borrower welfare.

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JEL classification codes: O17, D82, G20, O12.

1   Introduction

It is by now widely acknowledged that microfinance - the provision of savings and credit services to predominantly poor rural populations - has proved to be one of the most innovative methods of development finance.[1] In recent years, efforts to expand access to credit to the poor have focused largely on funneling credit through microfinance institutions (MFIs). A clear strength of such programs appeared to be their ability to reach the poor and to do so with astonishingly small default rates. However, a host of concerns have arisen more recently about the capacity of MFIs to adequately serve the financial needs of poor households on a sustainable basis.[2] In countries like Bangladesh and Bolivia, where microcredit programs have become ubiquitous and competition among suppliers has intensified, concerns with increased borrower mobility and consequent opportunities for strategic default have further complicated the picture and often take center stage in policy discussions.[3]

These concerns have highlighted issues that require analytical work beyond evaluations of MFI performance. Our larger research agenda is to address some of the lacuna in our understanding of the impact of microfinance by explicitly considering an aspect of microfinance that has, until recently, been largely neglected: an MFI typically operates in an environment that includes many other suppliers of credit, including other MFIs, as well as informal lenders. Inevitably, this might be expected to affect the

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[1]For a survey, see Morduch (1999) or Ghatak and Guinnane (1999). A recent volume describes it as the "Microfinance Revolution" (Robinson 2001). For a brief review, see Jain (2003). For a more general survey of financial markets in developing countries, see Besley (1995).

[2]The existing empirical literature has focused specifically on the following: the apparent exclusion of the poorest; a lack of flexibility in the types of projects that can be financed and a narrow range of financial services, leading to continued dependence on informal credit by poor farm households as well as MFI participants, and, the creation of debt traps for the poor. See, for example, Morduch (1999), Conning (1999), Matin (1997, 1998), Rutherford (2000), Hashemi (1995), and Zaman (1999).

[3]See, for example, Navajas, Conning and Gonzalez-Vega (2003), Rhyne and Christen (1999), and Khaled (1998).

kinds of loans and contracts that MFIs offer. In an earlier paper (Jain and Mansuri, 2003) we analyzed the virtually ubiquitous use, by MFIs, of frequent installment repayments (e.g., Grameen Bank loans require repayment in weekly installments, beginning immediately with the disbursement of the loan). We argued that this could be interpreted as an incentive mechanism by which MFIs use the informal sector's superior information about borrowers, in order to align their incentives more closely with that of the MFI. In effect, the installment requirements (which begin well before the typical project starts to yield a return) force borrowers to resort to informal lenders. In this manner, MFIs are able to indirectly co-opt the better-informed informal sector. In turn, this allows the informal credit market to survive, and offers an explanation for why, even in areas where MFIs are active, the informal sector continues to thrive.[4] Our analysis of data from an IFPRI survey of rural households provided some supportive evidence for the idea that there may well be a symbiotic relationship between informal lenders, and those in the formal sector, such as MFIs.[5]

Competition among MFIs raises two sets of important questions: one, what form does the competition take? Two, what are the implications of this competition, both for the financial soundness of the institutions themselves, and for borrowers? To take just the first set of questions: when different MFIs operate simultaneously in the same geographic region, or 'market', to what extent is their relationship likely to be competitive, or co-operative? How much information should MFIs share? What kinds of information should they share? Do non-formal, trust-based mechanisms (reputation, repeated interaction, loyalty etc.) constrain strategic behavior by borrowers?

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[4]Consistent with the prediction that it is quite possible for the informal credit market to expand, in environments where microfinance has entered the market, evidence from a number of recent studies suggests that households involved in microfinance programs in Bangladesh continue to have substantial dealings with money lenders as well as other informal sources of credit. See, for example, Sinha and Matin (1998) the survey by Zeller and Sharma (1998), and other references cited in Jain and Mansuri (2003).

[5]This relationship need not always be a symbiotic one, and one sector may well 'crowd out' lenders in the other. For a discussion, see Jain (1999).

Which aspects of program design are most crucial in this respect?

In this paper, we focus on a subset of these questions, and examine the impact of information-sharing among MFIs. In this analysis, we focus solely on competition among MFIs, and do not consider, for example, the possibility of information-sharing with informal lenders. Apart from offering a reasonable first step in the theoretical analysis of information-sharing among microlenders, our reading of the (limited) available evidence is that, at least in Bangladesh, most information-sharing by MFIs seems to take place only with other MFIs, and not with informal lenders. Second, as we discuss in greater detail in the next section, we depart from the extant literature by focusing on *non-profit* lenders. Analytically, the main import of this is that the objective functions of the lender(s) can be modeled as maximizing, for example, borrowers' welfare, or the volume of lending, rather than profit. We discuss this is greater detail in section 3, where we set up the formal model.

The paper is organized as follows. Section 2 provides a brief and selective review of the relevant literature on information sharing among lenders. Section 3 sets up our theoretical model, and analyzes the impact of information-sharing by non-profit MFIs. Section 4 provides some discussion of our findings, and describes related ongoing research, which should provide empirical evidence on these issues, in the specific context of Bangladesh. Section 5 concludes by emphasizing the importance of microfinance, and access to credit more generally, in the specific context of south Asia, which is the regional focus of our research program.

2 A Selective Review of the Literature

There is now a well-developed literature on information sharing in credit markets. Padilla and Pagano (2000) show that if lenders share information on borrower defaults, then that increases the performance incentive of borrowers, as one would expect.[6] However, this is only true up to a point: if

[6]See also Pagano and Jappelli (1993).

lenders share more detailed information about borrowers, other than their past defaults, then this disciplinary effect of information-sharing can be vitiated. Mansuri (1998) reports a similar phenomenon in her research on moneylending practices in Punjab and Sindh provinces in Pakistan. Traders (who also operate as moneylenders) would not share information on borrower characteristics, but only on whether borrowers had defaulted or not. Further, this information was acted upon - the traders would not lend to a borrower who was in default with another trader, until the defaulting borrower cleared his account with that other trader. Ghosh and Ray (2001) show that if information is costly, the social returns to information sharing can exceed private returns. If so, the amount of information collected by lenders may be sub-optimal. Under such conditions, borrowers will be offered contracts with dynamic repayment incentives and interestingly, a market for credit exists only if a sufficient fraction of borrowers are completely myopic. A recent paper, by Navajas, Conning and Gonzalez-Vega (2003), looks at the competition between a profit-oriented and a socially-oriented lender, and examine the kinds of contracts (e.g., group lending versus individual lending) that arise as a consequence of that competition. McIntosh and Wydick (2003) examine, as we do, competition among non-profit MFIs with 'non-standard' objective functions. In their case, the MFIs maximize 'outreach', or the number of clients offered credit, subject to similar budget-balancing and participation constraints as in our model. However, their main interest is in whether competitive pressures force MFIs to curtail lending to poorer borrowers, and they do not consider information sharing between MFIs.

The model described in this paper differs from these studies in that lenders in these models are profit-maximizers, whereas our study considers non-profits. This affects the analysis considerably, and provides an interesting comparison with Padilla and Pagano's model as well as Ghosh and Ray's model. Further, unlike Navajas, Conning and Gonzalez-Vega (2003) and McIntosh and Wydick (2003), we consider the incentives for information-sharing, and relate the different formulations of the MFIs' objective functions to these incentives. The structure of the model is most similar to that

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in Padilla and Pagano (1997), although it differs in some significant aspects, most notably in the objective functions of the lenders. As we note below, this has the virtue that it allows us to place our findings relative to theirs, and compare the outcomes that prevail.

3   The Model

It is now well accepted that information sharing among lenders can increase the repayment incentives of borrowers and constrain the information based monopoly power of lenders, leading to lower borrowing costs. However, credit bureaus and other formal institutional mechanisms, which allow for easy information exchange on borrowers in most developed countries, are nearly absent in contexts where micro-finance providers are most active. As competition among such providers has increased, it is unclear whether private incentives to share information among competing MFIs will provide the sort of disciplinary check on borrowers that formal information sharing mechanisms do. Moreover, MFIs, are, by and large, non-profit institutions which face substantial and diverse pressures from financiers: to attain solvency, to extend 'outreach' i.e., reach poorer borrowers by keeping interest rates low, or to maximize their 'throughput' i.e., the volume of lending. Their objective functions are therefore qualitatively different from those of profit maximizing banks-which have been studied most in the literature.

We examine the private information sharing incentives of MFIs under two alternative formulations: one where the MFI seeks to maximize the welfare of its borrowers; and another where it seeks to maximize the volume of its lending. Under each regime, we first examine the optimal loan contract when the MFI is the only lender and then look at the consequences of competition for the type of information shared, and the borrower's repayment incentives. These results are contrasted with the more familiar case of a profit-maximizing bank. We show that the two regimes imply very different outcomes both in the extent of information shared. Specifically, when MFIs maximize volume of loans, borrowers are offered loans which are

strictly larger than the loan size at which borrower welfare is maximized. Competition among MFIs reduces this inefficiency and improves borrowers' repayment incentives. In contrast, competition has no effect on the loan contract or on borrower incentives if MFIs seek to maximize borrower welfare.

3.1 The One Period Case

We begin by analyzing the simple one-period case, which allows us to build intuition, and to see the underlying argument when we go to the two-period case. Consider a finite population of borrowers, each of whom is endowed with a project, which must be financed with a limited liability loan, since the borrowers possess no capital and no collateral. The project has two possible outcomes, success and failure, which occur with probability p and $1 - p$ respectively, which are initially assumed to be exogenously given. For simplicity, suppose that the failure outcome produces an output of zero. Output in the successful outcome depends on the size of the project (which is synonymous with the size of the loan), B, so that a successful project yields $\pi(B)$, where $\pi(.)$ is increasing and concave in B. Suppose initially that all borrowers are alike, and that the lending MFI is a monopolist, who can make a take-it-or-leave-it offer to the borrower. Let the lender's opportunity cost of funds be denoted by ρ. The MFI's offered contract can be written as $(B, R(B))$, where B denotes the loan size, and $R(B)$ the repayment in case of a successful outcome. The MFI's objective is to maximize a combination of borrower welfare and 'throughput', or the total volume of lending, subject to the constraint that it break even, and to the usual participation and non-negativity constraints.

Using α to denote the relative weight it places upon the achievement of the throughput-maximizing objective, we can write the MFI's problem as:

Choose B and $R(B)$ to

$$\max \quad \alpha.B + (1 - \alpha).[\pi(B) - R(B)]$$

subject to

Lender's break-even constraint [LBE]:

$$pR(B) \geq \rho B$$

Borrower's Participation Constraint [BPC]:

$$p[\pi(B) - R(B)] \geq 0$$

It is easiest to begin by considering the polar cases, when $\alpha = 0$ and when $\alpha = 1$. First consider the case where the MFI is a 'throughput'-maximizer, i.e., $\alpha = 1$. In that case, since the borrower can be pushed to his reservation utility, so that the borrower's participation constraint (BPC) binds, i.e., $R(B) = \pi(B)$. Substituting this in the Lender's break-even constraint (LBE) yields: $p\pi(B) \geq \rho B$, i.e., $\pi(B) \geq B\rho/p$, where ρ/p can be interpreted as the risk-adjusted cost of lending. The MFI's objective is to choose the largest B that satisfies this constraint. As Figure 1 shows, the fact that $\pi(B)$ is increasing and concave makes this a simple exercise - the straight line through the origin, $B\rho/p$, denotes the risk-adjusted cost of a loan of size B, and the largest loan that recovers its risk-adjusted cost is given by the intersection of this line with the $\pi(B)$ function, at $\overline{B}$.

< Insert Figure 1 about here >

This leads immediately to our first observation.

Remark 1: *A throughput-maximizing MFI chooses a loan size of $\overline{B}$, the largest value of B such that the LBE just binds, and sets $R(\overline{B}) = \pi(\overline{B})$.*

Next, consider the other polar case, where $\alpha = 0$. In that case, the BPC simply requires that the maximand be zero, and the LBE will bind (otherwise borrower welfare can be increased by reducing the repayment requirement $R(B)$), so $R(B) = B\rho/p$. Substitute this into the maximand, to observe that the lender has to choose B to maximize: $p[\pi(B) - B\rho/p]$, which is equal to $p\pi(B) - B\rho$. Taking the first order condition yields the optimal loan size, denoted by B^*, defined by:

$\pi\prime(B^*) = \rho/p$.

The intuition is straightforward, and can be traced on Figure 1. Social welfare (which, here, is synonymous with borrower welfare - see discussion below) is maximized where the marginal return on the loan is equalized to its (risk-adjusted) marginal opportunity cost. This is summarized in our second observation below.

Remark 2: *A borrower welfare-maximizing MFI chooses a loan size of B^*, defined by $\pi\prime(B^*) = \rho/p$, and sets $R(B) = B\rho/p$ so as to just break even.*

Finally, consider the general case where the MFI places some weight on both objectives. Noting that, in both the cases analyzed above, the LBE binds, we assert without formally proving that again $R(B) = B\rho/p$, so that the maximand can be rewritten as:

$\alpha B + (1 - \alpha)[p\pi(B) - B\rho]$

$= \alpha B - (1 - \alpha)B\rho + (1 - \alpha)p\pi(B)$

The first order condition gives:

$\alpha - (1 - \alpha)\rho + (1 - \alpha)p\pi\prime(B) = 0$

$\implies \pi\prime(B) = \frac{(1-\alpha)\rho - \alpha}{(1-\alpha)p} = \frac{\rho}{p} - \frac{\alpha}{(1-\alpha)p}$

Let the value of B that solves this equation be denoted by B^α. Observe that since the RHS here is lower than ρ/p, hence it must be the case that B^α must be greater than B^*. Intuitively, this says that if the MFI places some non-zero weight on maximizing throughput, it will choose a loan size greater than the borrower welfare-maximizing one.

Remark 3: *An MFI that places positive weight on both borrower welfare as well as throughput will choose a loan size of B^α, defined by $\pi\prime(B^\alpha) = \frac{\rho}{p} - \frac{\alpha}{(1-\alpha)p}$, where $B^\alpha > B^*$, and sets $R(B) = B\rho/p$ so as to just break even.*

Note that even an MFI with α less than 1 may choose a loan size of $\overline{B}$. The expression $\frac{\rho}{p} - \frac{\alpha}{(1-\alpha)p}$ is falling in α, so that for a sufficiently high value of α, less than 1, the lender hits the "corner" at $\overline{B}$, where the break-even constraint starts to bind. Hence one can effectively get the throughput-

maximizing outcome even when the lender places some (sufficiently low) weight on borrower welfare.

3.2 The Two Period Case

Next we introduce competition and information sharing. In order to do so, we need to introduce a little more structure into the model. Suppose that the success probability of the project depends on the 'choice of technique' by the borrower. The borrower can choose either a 'safe' or a 'risky' technique, with the associated success probabilities p and q respectively, where $q < p$. The output, in case the project is successful, depends on the technique chosen: the output is $\pi(B)$, as before, when the 'safe' technique is chosen, but is given by $\theta(B)$ if the risky technique is chosen.[7] Suppose that the safe technique is more socially worthwhile, i.e., that $p\pi(B) > q\theta(B)$, but that the potential for moral hazard is created by the fact that, for any contract $(B, R(B))$, the following moral hazard condition (MHC) holds: $q.(\theta(B) - R(B)) > p(\pi(B) - R(B))$. In other words, for any contract, the borrower would prefer to use the risky technique. We also need an additional condition to the effect that the lender would prefer that the borrower use the safe technique. In particular, we need such a condition for the throughput-maximizing lender. Define B_p and B_q as the largest loan size that the lender can offer borrowers who are using, respectively, the safe and risky method of production. (Note that B_p corresponds to what we had defined as $\overline{B}$ in the section above). Then the assumption simply requires that: $B_q < B_p$. In other words, the throughput-maximizing MFI would prefer, ceteris paribus, that borrowers use the safe technique, so that the break-even constraint binds 'less severely' which allows the lender to make a larger loan to the borrower while still breaking even.

We can now consider the MFI choosing the loan contract for borrowers who live two periods (for simplicity, assume that there is no discounting of

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[7]We will assume that the debt contract is a standard one, so that the repayment amount, in case of a successful project, cannot be a function of the size of the successful outcome.

the future). While the MFI faces competition from other MFIs, we follow Padilla and Pagano (1997) in assuming that each MFI has an initial informational advantage with some borrowers, who can be thought of as belonging to its 'hinterland'.[8] We are now in a position to consider the implications of information sharing for the MFIs. In what follows, we sketch the argument, in lieu of a formal proof.

Consider first the incentives of the throughput-maximizing MFI, in a situation where there is no information sharing. Given that the borrower prefers to employ the risky technique for any contract, the MFI will choose the largest loan size that satisfies its break-even constraint. As described above, this is given by B_q, which we have assumed that this is less than B_p. Thus, with no information sharing, the MFI uses the same contract in both periods (the borrower can do no better by going elsewhere). Let $S(B_q)$ denote the per-period borrower surplus under this regime.

Contrast this with a situation in which MFIs share information on borrowers at the end of the first period. Now, the MFI has some leverage - by committing to share information, it assures borrowers that successful outcomes will be rewarded with a favorable report. Hence, this tilts the borrowers' incentives in favor of the safe technique, with its higher likelihood of success. On the other hand, borrowers with successful projects will benefit from the competition between lenders in the second period, and will be able to obtain their optimal loan size, say B_q^*, which, by the same intuition as in Remark 2, will be lower than B_q. Let $S(B_q^*)$ denote the (higher) surplus that borrowers get due to the competition among MFIs. Thus the trade-off for the MFI is as follows. On the one hand, it has an incentive to share information, in order to align borrowers' incentives more closely with its own in the first period. On the other hand, this comes at the cost of a reduced payoff, in the sense of lower throughput, in the second period,

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[8]However, suppose that this informational advantage is not absolute - each period, some bad types (who can only operate negative net return projects, unlike the borrowers considered so far) also 'mistakenly' qualify for loans. However, at the end of the first period, the MFI learns who the bad types are, and rules them out for future loans. For simplicity, and to save on notation, we eschew a formal statement of this assumption.

where competition from other MFIs will bid down the loan size that it can administer. Note that a borrower welfare-maximizing MFI would not face the same trade-off. We summarize this in the following observation.

Remark 4: *Throughput-maximizing MFIs may prefer an equilibrium with information sharing about borrowers to one in which information is not shared, while for the same set of parameters, borrower welfare-maximizing MFIs may be indifferent.*

The striking similarity in the outcomes of our baseline model, and that of Padilla and Pagano (1997), suggests that the underlying concerns about information sharing are similar, regardless of whether the objective functions of the lenders are of the standard, profit-maximizing, variety, or 'non-standard' functions as in our model. One implication of this is that one cannot be optimistic that MFIs, even when they do not maximize profits, will necessarily deliver superior outcomes than for-profit lenders. In other words, the absence of a profit motive is insufficient to ensure a superior outcome. The intuition is straightforward: if MFIs maximize objectives other than social welfare (or, more narrowly defined, borrower welfare), then, not surprisingly, the credit market may fall prey to the same problems as afflict markets with profit-maximizing lenders.

An interesting issue, which we postpone for future research, is to examine whether this identity between 'members' welfare' and 'social welfare holds more generally. Further, even if one looks only at members' welfare, it is not clear that this is synonymous with borrowers' welfare. For example, suppose that some of the funds loaned by the MFI come from the savings of its members, and that the cost of those funds is rising in their volume. Then, it is straightforward to see that, in evaluating the welfare impact of a change in the volume of lending, or in the prevailing interest rate, one must also take into account the impact on the "producer surplus" of the savers.[9]

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[9]Banerjee, Besley and Guinnane (1994) consider the implications of paying different interest rates to different classes of savers, in the design of a credit cooperative, and provide evidence from 19th century German cooperatives.

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4   Discussion and Related Research

In this research, we have attempted to incorporate an explicit recognition of the context of the larger financial market within which MFIs operate. Within that context, we have focused here on the strategic interaction among (geographically proximate) MFIs. By studying MFIs within this broader context we can also think about related questions: Is there a spatial pattern of MFI concentration? Does this lead to market saturation and excessive competition in some areas, and thin to non-existent services in others? If so, what form is the strategic interaction among proximate MFIs likely to take? Are concerns about opportunistic default by participants in high concentration areas warranted? What implications does all this have for borrowers in high and low concentration areas? Will access to microfinance expand or shrink? If so, who is most likely to be adversely affected? Our interest in these questions is driven by an underlying basic concern: can the diffusion of microfinance increase access to credit for the poor and lower the cost of credit from all sources? While numerous aspects of microfinance programs in Bangladesh have been studied and an enormous literature has been spawned, we have almost no understanding of how the presence of such programs has altered/restructured the rural financial market.

In our ongoing research, we focus on Bangladesh, where the set of issues we raise have been explicitly identified as key for understanding the future impact of microfinance.[10] The apex microfinance body, Palli Karma Sahayak Foundation (PKSF) has increasingly expressed concern about market saturation, the possibility of increasing default, and the need for new governance structures for MFIs.[11] However, the debate between Bangladeshi MFIs and donor organizations is becoming increasingly polarized. Many local MFIs continue to argue that there is still substantial room for horizontal expansion (i.e., bringing more borrowers into the program) while donor agencies and consortiums hold that the market is more or less saturated,

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[10]See, for example, Rahman (2000), and Khaled (1998).

[11]To this end, a part of a recent World Bank $151 million loan to PKSF was earmarked to explore the feasibility of establishing a credit bureau in Bangladesh.

little room exists for further horizontal expansion, and governance structures need to be set in place urgently. Ultimately, these are empirical issues, and our companion research on this should help to clear the ground in this respect and make informed policy initiatives in the region feasible.

As part of this companion research, we are in the process of collecting data to examine the relationship between the intensity of competition, loan sizes, and the extent of information sharing among MFIs in Bangladesh. We assess the extent of spatial concentration of MFIs as well as regional patterns of MFI penetration, at the *thana* as well as the union level , using a recently collected data set that has branch wise location, *thana* coverage, and client outreach information for the top 25 MFIs in Bangladesh.[12] We supplement this with another survey, which is about to be fielded, of MFI branch managers and loan officers, to examine their institutional structure, the types of contracts they offer, and perceptions regarding competition, client mobility/loyalty and the perceived danger of increasing default as spatial concentration increases. With this data, we also hope to examine the following questions: Is it the case that the coverage of microcredit increases in more competitive environments (e.g., are the poorest borrowers more likely to be served?) Is it the case that the richest borrowers default or the poorest, and is this pattern similar in more competitive and less competitive environments? There is considerable policy concern about the effect that the 'deepening' of microcredit is having on access to credit, especially of the poorest and most vulnerable households, who are also the most underserved, and on the cost of that credit, when it is available.[13]

5   Conclusions

The questions we address have particular relevance for South Asia where inadequate access to credit has long been identified as a major constraint

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[12]There are 489 *thanas* in Bangladesh. The union is the administrative unit below the *thana*. There are roughly 9 unions per *thana*, with a total of roughly 4,400 unions in the country.

[13]For a discussion, see, for example, Matin (2000).

to rural development. More recently, better access to credit is also being viewed in the region as a critical component of a strategy to reduce vulnerability due to income volatility. At the same time, South Asia has come to be seen as something of a model for innovative initiatives to provide financial services to the poor. As a consequence, large amounts of funds are being devoted, by both donor agencies and governments, to support new micro-finance initiatives in virtually every country in the region. However, our findings should also be of wider interest to researchers and policy makers interested in understanding the impact of institutional competition on access to credit and financial services, especially for the poor, and the implications for the financing of economic development in poor countries.

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Figure 1

$\phi = (\rho/p)-\alpha\ /((1-\alpha\ )p) < \rho/p$

$(\rho/p)B$

$\Pi(B)$

Π,R

ϕ

ρ/p

ρ/p

B^*

B^α

$\bar{B}$

B