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Microfinance in India: Small, Ostensibly Rigid and Safe

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Grameen replicators in India, using a for-profit Non-Banking Finance Company legal form, have grown rapidly in terms of client numbers. Loan sizes are relatively small compared to per capita income, while portfolio quality was until recently very high. There is evidence in field of multiple borrowing, with clients borrowing simultaneously from multiple sources including micro-finance institutions. We build a model of the microfinance sector that explains why such multiple borrowings result optimally in small loan sizes and high portfolio quality.

Key words: microfinance, multiple borrowing

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Microfinance in India comes in two broad flavours: the home-grown self-help groups (SHGs), and the Microfinance Institutions (MFIs) that are typically "replicators", primarily of the Grameen model but also of such models as ASA. The focus of this paper is on the MFIs, which have three features of interest. First, the average loan size is small. Second, the bulk of MFIs follow rigid lending policies.[i] Third, with the exception of portfolio problems created in Andhra Pradesh, the MFIs report a remarkably high portfolio quality, including "the 100 per cent recovery rate," a figure that can astonish anyone familiar with banking anywhere, let alone banking in rural India with the poorest clients.

We believe that the explanation of this combination of small loan sizes and extraordinary high recovery rates (despite rigid repayment norms) lies partly in the fact that borrowers are allowed to raise money from multiple sources (commercial and cooperative banks, MFIs, SHGs and money-lenders). While previous research has highlighted multiple borrowings across mainstream banking, microfinance and the informal sector; recent research shows that clients borrow from multiple sources, even within the microfinance sector. We build a behavioural model of the MFI industry that shows how multiple borrowings result in small reported average loan sizes, and can facilitate high reported recovery rates by effectively allowing borrowers to tap additional sources of financing when cash flows are inadequate to service existing borrowings. As a useful by-product such a multiple borrowing policy allows the microfinance sector to report large client numbers (with the same client reported by several institutions); fulfilling outreach targets in a cynical fashion.

The rest of this paper is organized as follows. Section 1 provides a background on Indian MFI performance. Section 2 examines the evidence on multiple borrowing. In section 3 we model MFI behaviour. Section 4 concludes the paper.

1. MFIs in India

Indian microfinance covers several million borrowing clients,[ii] and is amongst the fastest growing globally. Five Indian MFIs were ranked in the top twenty fastest growing MFIs in 2005 (Microfinance Information Exchange Report, 2006). The growth in the number of clients outstrips growth in the aggregate loan portfolio. In 2006-07 for instance, some of the leading MFIs witnessed an 80 per cent per annum growth in terms of numbers of borrowers against a growth in terms of aggregate portfolio size of 40%.[iii] Microfinance institutions, in India, were typically structured as not-for-profits till a few years back; but there is an increasing tendency to use the for-profit Non-Banking Finance Company (NBFC) model, with the Grameen model dominating (Grameen MFIs have 50% of the total Indian MFI clients). The NBFC model has the advantage that it can attract both equity funding from venture capitalists and loans from commercial banks; facilitating rapid growth. The loan size of a typical MFI is small. While the average loan disbursed was Rs 6,391, the average outstanding balance was Rs 2,600. Indian microfinance clients have miniscule loans compared to the international average. The average loan size is 15% of local per capita income (the average in Asia is 21%).

Transactions costs, while high by standard banking norms, are amongst the lowest in global microfinance and have declined steeply in the recent past: the cost per borrower

was Rs 425 in 2007 compared to Rs 621 in 2003. A major driver of low transaction cost has been the high staff productivity at 273 borrowers per staff member in 2007 (compared to 146 in the year 2003)[iv]. This has often been achieved by standardizing processes and reducing touch time with clients. In relative terms, for the typical Grameen MFI, the ratio of operating expenditure to the gross loan portfolio has reduced from 33.4% in 2003 to 21.1% in 2005 and to 16.4% in 2007[v]. While this reduction partly reflects economies of scale, it also reflects tokenism in group processes. There is evidence of entrant MFIs opening branches in areas where there are existing MFIs, to take advantage of the awareness and exposure to the group lending methodology among clients. This also lowers the costs of group formation and training for the entrant MFIs.

The portfolio quality across all microfinance is variable. But large Grameen replicators have reported dramatically low Portfolio-at-Risk (PAR -- see table 1 below) percentages. Grameen replicators had an average PAR_{60}[vi] of 0.9% in 2005. The overall microfinance Top 10 average PAR_{60} was 2.2% to 4.6%. The need to show very high repayment rates reflects the growing commercialization of this sector, where Indian MFIs again lead the pack, having a commercial funding ratio of about 75% (Microfinance Information Exchange Report, 2006).

Table 1: Select Indicators of Three Large Indian Micro Finance Institutions							
	31/03/2008	**31/03/2007**	**31/03/2006**	**31/03/2005**	**31/03/2004**	**31/03/2003**	**31/03/2002**
Active borrowers [numbers]							
SHARE	989,641	826,517	814,156	368,996	197,722	132,084	85,644
SKS		513,108	172,970	73,635	24,799	11,127	5,080
Spandana	1,188,861	916,261	721,621	385,996	110,011	34,095	13,206
Average Loan Balance per Borrower/Per Capita Gross National Income							
SHARE	n/a	n/a	12.30%	14.92%	15.17%	14.85%	14.41%
SKS		n/a	14.52%	14.15%	17.30%	18.27%	11.70%
Spandana	n/a	n/a	10.76%	19.38%	14.67%	17.82%	15.44%
Operating Expense/Loan Portfolio							
SHARE	n/a	10.97%	15.04%	16.36%	19.35%	20.28%	23.08%
SKS		13.70%	10.38%	15.47%	18.74%	25.94%	56.28%
Spandana	n/a	6.29%	5.77%	4.22%	5.37%	7.24%	6.41%
Borrowers per Staff member							
SHARE	327	350	331	184	197	146	124
SKS		264	214	254	184	185	92
Spandana	393	479	480	486	608	348	287
Portfolio-at-Risk [PAR_{60}]							
SHARE	1.30%	6.01%	13.48%	0.19%	0.00%	0.00%	0.00%
SKS		0.12%	1.51%	5.18%	0.00%	0.00%	0.00%
Spandana	0.08%	0.00%	0.00%	0.01%	0.06%	0.19%	0.14%
Write Off Ratio							
SHARE	n/a	0.00%	2.20%	0.00%	0.00%	0.00%	n/a
SKS		0.63%	0.99%	0.00%	0.86%	0.24%	0.15%
Spandana	n/a	2.65%	6.87%	0.00%	0.00%	0.00%	0.00%
Source: The MIX Market			http://www.mixmarket.org/en/home_page.asp				

2. Multiple Borrowings

There is ample evidence of multiple borrowing by poor clients among various sources of informal and semi-formal borrowers ranging from chit funds, moneylenders and private financiers to SHGs and MFIs.[vii] What is a more recent and a more worrying trend for this sector is the extent of multiple borrowing (or double dipping) among various MFIs. This latter trend is qualitatively different from the former. In the case of the former, justification is provided citing the menu of choices before the borrower as regards accessibility, cost, and size and purpose of credit between various informal borrowers

(Sa-dhan, 2007). So while a borrower might take an MFI loan for say, a productive purpose; she would still resort to family and friends for an emergency or might go to the pawn-broker or moneylender when she needs more anonymity or a hassle free loan. While this continues to persist, we are now observing borrowers taking multiple loans from different MFIs – all of which have more or less the same loan and repayment characteristics. Evidence for multiple borrowing exists elsewhere too, for instance in Bangladesh, particularly among the large microfinance NGOs and the Grameen Bank. Increasing competition among the MFIs there has resulted in "overlapping" – a term initially used to denote similar service providing NGOs working in the same geographical area, and now used to indicate multiple microfinance membership at the level of the household. According to a large scale, nationally representative study done by the Bangladesh Institute of Development Studies (BIDS), around 15% of the current microfinance households have multiple MFI membership[viii]. Most of the rapidly growing MFIs in India are Grameen or ASA replicators giving small loans, with weekly repayment cycles. They have not differentiated themselves much by catering to different areas /client segments or offering differentiated products.

What makes it hard to document multiple lending at the field level is that a client is unlikely to report her borrowings from existing MFIs when she seeks membership of a new MFI. Also, if the multiple memberships occur at the level of the household, rather than the individual clients – then even exchange of information about membership lists will not reveal this. Therefore, documentation with the MFIs will not reveal this trend. There is anecdotal evidence among the field staff of the MFIs about this. One reason is poaching of field staff of an MFI by another, such staff typically encourage clients to borrow from their new employer. Multiple memberships are not surprising when MFIs tend to cluster in some high growth areas (like the southern states of India). They could also be the result of strategizing on the part of entrant MFIs to leverage the training and exposure of clients to incumbent MFIs (Krishnaswamy, 2007).

Two recent studies in south India have pointed expressly to the prevalence of multiple borrowing among MFI clients. The two studies have approached this issue in different ways. Krishnaswamy (2007) has studied 50,000 loan and repayment records of seven partner MFIs of ICICI Bank in one southern state of India. This dataset is a subset of all clients of these MFIs in some of their branches. Using a phonetic algorithm, the names, addresses and other relevant details in the membership forms are compared to arrive at the extent of multiple borrowings.[ix] The overall percentage of multiple borrowers in their dataset is 7.28%. This is according to the paper, a lower bound on the extent of multiple borrowing since only partner MFIs of ICICI Bank are included. The study also finds that the arrear rates of the multiple borrowers are lower than or equal to the overall arrear rates of that MFI. Further to this, evidence of collective behaviour in multiple borrowing was found; resulting in en-masse multiple borrowing by groups.

Kamath, Mukherjee and Ramanathan (forthcoming) provide an analysis of a three month study tracking the daily cash inflows and outflows of twenty households who were MFI clients (through the methodology of daily financial diaries) in two urban slums of Ramanagaram, Karnataka. Since this involved an intensive tracking of the daily cash transactions by the research team; within a month into the study there was sufficient trust established for the households to record their repayments to and loans from various MFIs/SHGs in their diaries. In this sample of 20 households, all except one of the

households were indebted to multiple MFIs/SHGs. Nineteen households were indebted to more than two MFIs/SHGs and 10 households were indebted to more than 4 MFIs/SHGs. As an extreme case, this study notes a client having 7 memberships with MFIs/SHGs. In a square kilometre area of the urban slum in which this study was conducted, there were four MFIs known to be operating, in addition to SHGs.

Most studies done in dense and highly competitive MFI markets (Bangladesh, Uganda and Bolivia) suggest that borrowers resort to multiple borrowings to have access to a larger loan size, to smoothen the timing of repayments or to maintain their cash flows. Krishnaswamy (2007) carried out interviews with twenty one clients of a single MFI, who were identified as multiple borrowers in their data set. They found these multiple borrowers were more business savvy as compared to single borrowers and had more current undertakings. The borrowers reported in the interviews that 46 out of the 54 loans taken were for productive purposes. Kamath et. al (forthcoming) clearly find that it is the small size of loans, which in a growing urban area is too meagre to be put to any productive use, that make borrowers resort to multiple borrowing.

One possible reason for multiple borrowing is that a client borrows from one MFI to repay another, attempting to ensure repayment regularity. Sa-dhan (2006) carried out a study of 1080 MFI and SHG clients in Andhra Pradesh, where only 10% of the borrowers reported that they borrowed from one MFI to repay another MFI. Matin (CGAP Note) reports anecdotal evidence in Bangladesh, where multiple memberships represent a short term attempt to cross-finance. Krishnaswamy's (2007) data set cannot clarify this possibility, since it uses information reported with the MFIs by clients. Kamath et. al (forthcoming) could get around this bias in self reporting, by undertaking an analysis of the ex-post use of the MFI borrowings, based on the entries in the diaries. There was evidence of re-cycling of debt, where as much as 27% of the total borrowings were used to repay loans, including that of other MFIs.

There is ample speculative analysis about the consequences of multiple borrowings. Most of this analysis looks at this problem from the point of view of individual MFIs and the effect of this on their repayment, default and dropout rates. A number of theoretical models predict the effect of multiple borrowings of clients on the repayment rates and dropouts depending on the extent of information sharing that exists between the competing MFIs (McIntosh, de Janvry and Sadoulet, 2003). There is no concrete evidence on whether such multiple borrowings are an indication of unmet demand for credit from the borrowers or dumping of loans by the MFIs on clients well versed with the MFI methodology.[x] There is more sanguine speculation on how increasing competition among MFIs will benefit consumers in the form of lower interest rates and better add-ons to credit. Multiple membership does put an enormous burden on the borrowers however, since the transactions costs to most borrowers (especially in urban areas where women are employed) of attending group meetings of various MFIs is high. This is re-iterated by both the studies (Krishnaswamy, 2007 and Kamath et.al, forthcoming) where borrowers unequivocally prefer borrowing from a single MFI, if a larger loan size is available.

In the face of this mounting evidence, we analyse the existence of a strange "equilibrium" in the MFI sector, where MFIs persist with small loan sizes and rigid weekly repayment schedules, widening the scope for multiple borrowings by clients. There are studies (Field et. al, 2007) indicating that there is no substantive increase in late repayments or default

when the MFI has a monthly repayment rate as compared to a weekly repayment rate. The issue of the size of the MFI loan and the frequency of repayment is ultimately linked, because larger loan sizes will not be supported very well by weekly repayment schedules. We believe that one of the fallouts of this pressure of showing high repayment rate as well as compulsion toward outreach is that the MFI sector as a whole shows a large number of borrower accounts by having a large loan to a borrower spread over several smaller loans given by several MFIs. Obviously, multiple borrowings will inflate the outreach figures. Krishnaswamy (2007) also finds that in their data set, it is the two MFIs having faster growth rates and larger geographical coverage (which they refer to as the Group B MFIs, in contrast to the Group A MFIs, which have a slower growth and are more localized) that have the highest multiple borrowing rates. This goes a long way towards explaining the trend of multiple borrowings in this sector.

3. Modelling Multiple Borrowings

What we have modeled below is the microfinance sector (MFS) not an individual firm. We assume that the industry is homogeneous and all MFIs are identical (essentially replicas). The institutions that provide credit to borrowers are all assumed to be part of the MFS. The MFS has a transaction cost of lending (excluding the cost of funds) appropriate for a single client as follows:

(1) $TC = F*N + v*L_T + d*(L-L_S)$

Here L_T is the target loan the client is seeking from the MFS. The client may either receive it as a single loan (N=1) or as multiple loans (N>1) of L each, aggregating L_T. The purpose of this model is to determine the optimal number of loans N*.

'F' the fixed transaction cost per loan; 'v' is the variable transaction cost per rupee of loan; and 'd' is the default cost factor. We assume that there is threshold size L_S (safe-loan), below which default is zero. Otherwise default amount is proportional to the loan-size. The logic for this is in the appendix. In this formulation we assume that the MFS follows "good" banking and group lending practices. This means that loans are appraised, loan usage is monitored, and group practices intended to minimize moral hazard and adverse selection issues are enforced (see Aghion and Murdoch, 2005).

If the MFS is motivated purely by financial goals (minimizing transaction cost); the optimal number of loans, N* is given by equating the first derivative of (1) to zero, after substituting L_T/N for L:

(2) $N^* = SQRT(d*L_T/f)$

This has the obvious implication that the number of loans increases if the default cost factor increases, and if fixed cost reduces.

We however postulate that the MFS has a utility function that incorporates high outreach and low default, as follows:

(3) $U= -TC+W_1*N+W_2*DEFAULT\_COST$

Where the $DEFAULT\_COST = d*(L-L_S)$.

Weight W_1 follows from outreach motivation. As a consequence the MFS may prefer numerous small loans to a single large loan of L_T. Weight W_2 follows from portfolio quality motivation. W_2 of minus one will correspond to purely financial goals. A higher absolute weight (such as -2) will reflect MFS desire (or obsession) for high portfolio quality. This should not be dismissed as irrational behaviour. It is entirely possible that

the institutional support system of the MFS, comprising players such as venture capitalists, lenders, or rating agencies have contributed to this desire. If the MFS chooses to maximize utility, then the optimal number of loans, N* is given by:

(4) $N^* = SQRT[d^*(W_2\text{-}1)L_T/(W_1\text{-}F)]$

Comparing (1) and (4) it is clear that the utility maximization goal results in more (and smaller) loans than in the case of pure financial goals. The ratio of optimal loans under utility and financial optimization (4)/(1) is defined as M (optimal multiple borrowing ratio).

(5) $M = SQRT [(W_2\text{-}1)/(W_1/f\text{-}1)]$

'M' increases if the weight attached to outreach W_1, or the absolute weight attached to portfolio quality W_2, increase. On the other hand 'M' reduces if the fixed cost per loan 'f' increases. The small loan is optimal, given this. Table 2 below shows M for various values of weights and fixed cost.

Table 2: Optimal Number of Loans-Financial and Utility

Fixed Cost 'f'	Variable Cost 'v'	Default 'd'	Outreach Weight W_1	Default Weight W_2	Optimal Financial N*	Optimal Utility N*	Optimal Ratio M
200	1%	3%	*80*	*-2.0*	2.12	4.74	2.24
150	1%	3%	*80*	*-2.0*	2.45	6.21	2.54
200	1%	2%	*80*	*-2.0*	1.73	3.87	2.24
200	1%	3%	*100*	*-2.0*	2.12	5.20	2.45
200	1%	3%	*80*	*-1.5*	2.12	4.33	2.04

An intriguing feature of MFIs is they increasingly violate received theoretical wisdom from conventional banking: specifically, they do not actually appraise a loan in the sense that normal banking does. The conundrum of the Bangladeshi predominantly NGO-MFI sector is that increasing commercialization is pushing them towards a situation where they are vying for customers having very similar needs, putting a lot of pressure on the field staff[xi]. Field staff is forced to meet preset targets and ignore any information they have about the household's existing debt obligations (Matin, CGAP note). The first tranche of loans is disbursed routinely often within a week or so after group formation to meet targets, often set centrally – without adequate information on local markets and existing providers. Groups per se are formed only for the off-take of credit. Nor do they tailor repayment to project borrower cash flows. The incentives given to the field staff are in many cases linked to the number of customers acquired, loans and repayments made. Field officers may spend less effort on making loan utilization checks, since they see no value added for their time[xii]. Many MFIs do not effectively have joint liability or peer guarantees, which means that group processes are curtailed. The group is no longer a resolution mechanism for moral hazard and adverse selection problems. All this leads to borrowers resorting to multiple MFIs, where loan repayment is dependent much more on an ability to borrow from Peter to pay Paul. Field staff in Bangladesh also thought that while more on-time information about existing debt obligations of the client household could be a useful loan assessment tool, given the levels of MIS in most MFIs, there would still be issues in accuracy and updating of the data. This means that the MFIs can do, and are doing banking with relatively low skilled

field staff, the minimum requirement being class X or class XII.[xiii] It also means that increased staff/borrower ratio is reflected as superior productivity. Considering all these factors, portfolio quality will consequently be lowered, especially if a single MFI caters to all the financial needs of a borrower. To the extent that multiple borrowings are allowed, portfolio quality may be less impacted. To show this we modify (1) as follows.

(6) $TC = F' * N + v' * L_T + d' * (L - L_S)$

In this formulation the prime reflects costs when good banking and group lending practices are diluted. In this formulation $F' <= F$, $v' <= v$, and $d' >= d$. This assures that the fixed and variable costs of an "inferior practice" bank loan are lower than that of a "good practice" bank loan and the default is higher. The optimum N* with this formulation will be higher than that determined earlier. In other words the incentive to permit multiple borrowings is even higher than before.

4. Conclusion

What we offer is not a flattering view of MFIs. In the last decade, MFIs in our view are executing lending by increasingly shifting away from banking as conventionally defined. The existence of multiple borrowing among the MFI clients implies that repayment, to a greater or lesser extent, is dependent on the borrower's ability to raise a new loan to repay a prior borrowing.

At a macro-level the consequence is that the total outstanding to the financial system is higher than if a single "right-size" loan was provided. This "additional loan" covers two amounts. The first is the enhanced transaction cost the borrower faces, as a consequence of multiple (rather than a single) loan. The second is a potential "delinquent" amount. The portfolio-at-risk is effectively financed by the financial system and is masked. This is like a game of musical chairs, with multiple sources of financing the music stops rarely. When (we are not using the more optimistic 'if') the music does stop, the accumulated delinquency will suddenly show up. Again, taking recourse to finance vocabulary, the delinquency has been securitized and funds raised against it.

Appendix: Default Cost Function

Suppose a borrower with a single loan L_T, has a stochastic cash flow. This cash flow comprises net cash flows from production activities (such as farming, dairying, labour supply, and so on) and cash outflows on consumption; but excludes loan related outflows (instalments and interest). There is a probability that the loan will be delinquent or in default.

Suppose the same stochastic cash flow can be achieved by borrowing from multiple sources. Then the probability of delinquency is reduced, since the borrower can access a new loan when cash flows are inadequate to service existing loans. In financial vocabulary (not respectable finance but the journalistic sort, strewn with phrases like sub-prime) the borrower essentially evergreens her loans.

REFERENCES

Armendariz de Aghion and Jonathan Morduch. *The Economics of Microfinance*. The MIT Press. 2005.

Field, Erica and Rohini Pande. Repayment Frequency and Default in Microfinance. Evidence from India. Working Paper Series No 20. (2007). Institute for Financial Management and Research. Centre for Microfinance. November 2007.

Ghate, Prabhu. *Microfinance in India – A State of the Sector Report, 2006*. Microfinance India. New Delhi. 2006.

M-CRIL. *India Microfinance Review 2007*. 2007.

Jain, Sanjay and Ghazala Mansuri. A Little at a Time: The Use of Regularly Scheduled Repayments in Microfinance Programs. *Journal of Development Economics*.72 pp. 253–279. 2003.

Kamath, Rajalaxmi; Arnab Mukherjee and Smita Ramanathan. Ramanagaram Financial Diaries: Loan repayments and cash patterns of the urban slums. *Enterprise Development and Microfinance*. Forthcoming.

Krishnaswamy, Karuna. Competition and Multiple Borrowing in the Indian Microfinance Sector. Working Paper. Institute for Financial Management and Research. Centre for Microfinance. September 2007.

Matin, Imran. Dimensions and Dynamics of MFI Competition in Bangladesh. CGAP Note. http://www.microfinancegateway.org/files/21659_027.pdf; last accessed 7th January, 2009.

McIntosh, C; A. de Janvry and E. Sadoulet. How Rising Competition Among Microfinance Institutions Affects Incumbent Lenders. *The Economic Journal*. Vol. 115; No. 506, pp. 987-1004. September 2005.

Sa-Dhan. Maturing Microfinance: Emerging Challenges. Sa-Dhan – The Association of Community Development Finance Institutions. 2007.

Notes

[i] Typically these reflect Grameen-I practices, and not the more flexible Grameen-II policies, introduced by the Grameen Bank in 2001. See http://grameen-info.org/index.php?option=com_content&task=view&id=30&Itemid=0

[ii] There is a definitional issue of which organizations are microfinance institutions. Sa-Dhan, the association of Indian "community development finance institutions", reported that its member-organizations had 15 million clients (Sa-Dhan, 2007).

[iii] M-CRIL 2007.

[iv] See M-CRIL (2007), p. 18.

[v] See M-CRIL (2007), p.23.

[vi] For instance PAR_{60} (Portfolio-at-Risk) is the ratio of the principal balance outstanding on all loans with overdues greater than or equal to 60 days to the total loans outstanding on a given date.

[vii] Jain and Mansuri (2003) opine that repayment practices of MFIs expand the scope of informal sources; in fact informal lenders thrive in areas where MFIs have established practice.

[viii] See Matin

[ix] Under the partnership model, these borrowers are legally the clients of ICICI Bank. Therefore, KYC (Know Your Customer) norms of the Reserve Bank of India mandate that these basic details are verified.

[x] The AP crisis in India has sharpened this debate. See Ghate (2006) for more details.

[xi] Rahman, S. M. Commercialization of Microfinance in Bangladesh Perspective. http://www.gdrc.org/icm/country/bangla-001.html; last accessed 7th January, 2009.

[xii,] Interviews with the MFI fieldworkers for "Microfinance in India – A Case Study of Ujjivan and Grameen Koota" – Contemporary Concerns Study by Aarathy Arun and Nisha Jayram, IIM-B.