



Expansion and welfare in microfinance: A screening model[☆]



Ratul Lahkar^a, Viswanath Pingali^{b,*}

^a School of Economics, Ashoka University, Rajiv Gandhi Education City, Kundli, Haryana 131 028, India

^b IIM Ahmedabad, Vastrapur, Ahmedabad 380 015, India

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ABSTRACT

The expansion of microfinance has triggered concerns of rising indebtedness, and higher default and interest rates. Using a screening model, we show that even if interest and default rates increase due to expansion, borrower welfare may improve. This is because: (i) all borrowers previously denied credit can obtain loans, and (ii) screening costs for pre-existing borrowers go down. Hence, policies that seek to regulate interest and screening levels can be counterproductive.

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1. Introduction

Microfinance refers to the idea of providing financial services to low-income households, who are typically defined to be “non-bankable” by the traditional banking system. While there are some operational dissimilarities across countries, the fundamental idea—collateral-free lending to the poor—remains the core idea behind microfinance. Historically, microfinance originated as a benevolent institution—often with limited funds—designed to enhance the welfare of such poor households. However, over time, it has experienced high growth both in terms of access to larger funds, as well as the number of microfinance institutions (MFIs). This change in the scale of operations has led to several concerns like borrowers having easier access to credit, which, in turn, can lead to an increase in interest and default rates.¹

The main objective of this paper is to analyze the validity of these concerns and assess whether the consequent policy responses are in the right direction. We believe this is an important objective. This is because microfinance represents an important alternative source of credit, particularly for the poorer households in developing economies. Assuming that the borrowers behave rationally, access to microfinance is presumably welfare-enhancing for them. Therefore, policy interventions in this sector need to be rigorously analyzed, both theoretically and empirically. Our paper is a contribution in this direction.

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* Corresponding author. Tel.: +91 79 6632 4859.

E-mail addresses: ratul.lahkar@ashoka.edu.in (R. Lahkar), viswanath@iimahd.ernet.in (V. Pingali).

¹ See <http://www.bbc.co.uk/news/world-south-asia-11997571>. Also, see <http://microfinanceafrica.net/news/a-case-of-multiple-borrowings/> and <http://www.guardian.co.uk/katine/2008/jun/03/livelihoods.projectgoals1> for similar concerns expressed about microfinance sectors in Africa and Bangladesh, respectively.

There is some empirical evidence that the growth of microfinance does lead to an increase in default rates. For example, in their study of the Ugandan microfinance sector, McIntosh et al. (2005) show that default rates have risen following an expansion of the MFI sector. However, the more interesting question is how the welfare of borrowers changes when the microfinance industry expands. In this paper, we develop a theoretical perspective that allows us to answer this question. Using a standard screening model, we show that an increase in the scale of operations in the MFI sector can, indeed, raise interest rates and default rates. Despite this, we show that the welfare of all borrowers can improve. Hence, the expansion of microfinance can represent a Pareto improvement in borrowers' welfare.

In our model, the microfinance sector expands when a small benevolent MFI is replaced by a large number of competitive profit-maximizing MFIs. Borrowers are of two types: low risk and high risk. We first consider a situation where a benevolent but fund-constrained (small) MFI is the sole lender. In order to optimize the utilization of its loans, it may seek to restrict their availability to low-risk agents by imposing certain onerous conditions which we interpret as screening costs.² Since lending is limited to low-risk borrowers, interest rates and default rates are low. Next, we consider a competitive microfinance sector consisting of profit-motivated MFIs without any restrictions on lending abilities. We show that in the competitive sector, all borrowers, including the more risky ones, obtain credit. As a result, the default rate must increase under MFIs. To cover for the higher aggregate default rate, the interest rate must also increase. For the less risky borrowers, on the other hand, the screening costs go down. Therefore, while the more

² We interpret screening cost not as a monetary amount but as the cost involved in meeting some of the onerous conditions that MFIs impose to access credit. These may take the form of a lengthy waiting period during which prospective borrowers need to complete a training program or pass an exam.

risky borrowers obtain credit, the less risky ones obtain it at lower cost. Therefore, the welfare of all borrowers improves.

Theoretically, the paper provides an intuitive understanding of the expansion of the microfinance sector and its implications on the welfare of consumers. However, is there any evidence of the type of contracts we derive in our results? For evidence of screening contracts which play an important role in our results, we have looked at the loan products offered by certain MFIs in India. These MFIs offer multiple loan products with varying interest rates, repayment structures, and terms and conditions for the borrowers to choose from. For example, Madura Microfinance, an MFI based in the state of Tamil Nadu in South India, offers two loan products through the joint liability mechanism: SHG Activity Term Loan and Certified Activity Loan. SHG (self-help group) loan sizes are typically lower—Rs. 18,000 (\$300) at the beginning with a tenure of three years, and with twelve to twenty group members. No other restrictions are placed on these loans. On the other hand, Certified Activity Loan sizes tend to be of Rs. 10,000 (\$170) with one year tenure and smaller group sizes. However, in order to be eligible for these loans, the borrowers have to clear a Micro-Business Education, Level 1 exam with at least 60% marks.³ This exam requires substantial time commitment and effort from the borrowers. We can, therefore, interpret this exam as a screening mechanism.⁴ Further, while we are unable to provide formal evidence, conversations with these microfinance institutions have indicated that these screening norms have reduced over a period of time as the number of MFIs in the region have increased.

There is also some evidence that the orientation of the microfinance sector has changed from benevolent to profit-maximizing objectives. Bank Rakyat Indonesia (BRI) of Indonesia and BancoSol in Bolivia are a couple of examples that substantiate this assumption (Bateman, 2010, p. 14–15). In the Indian case too, the sector first emerged in the form of small not-for-profit SHGs, which were then followed by commercial MFIs (Bansal, 2003).

The results in this paper have significant policy implications. In light of the concerns about the expansion of microfinance that we have discussed earlier, several governments have instituted steps to regulate the operations in this sector. These regulations typically take the form of interest rate caps and restricting the amount of loan a borrower is eligible for.⁵ However, as our results show, attempts to cap interest rates may prevent MFIs from extending credit to more risky agents. This can reduce default but at the cost of more stringent screening norms which will adversely affect the welfare of the safe borrowers as well.⁶ We therefore argue that as long as participation by borrowers is voluntary, any regulation that seeks to intervene with the expansion of the microfinance sector may not yield the desired results. Hence, policy-makers should be circumspect in imposing restrictions on interest rates and mandating high screening requirements.

1.1. Literature review

This paper contributes to two strands of literature: competition and expansion in microfinance and the usage of screening devices in credit markets.

³ <http://maduramicrofinance.com/products.html> (as of September 9, 2015).

⁴ Several other microfinance institutions that we came across in India (Spandana, Grameen Financial Services Private Limited, etc.) have different loan products based on joint liability mechanism with varying interest rates and repayment structures. These can be interpreted as measures adopted by the MFIs to screen various types of borrowers.

⁵ For example, the Ministry of Finance of the Government of India is currently in the process of passing a bill that regulates MFIs in India. Some of the measures proposed in the bill include putting a cap on interest rates and margins charged by the MFIs, limiting a borrower to only one joint liability group and restricting the number of MFIs a borrower can approach to two. For full details of this proposed law, see: <http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/YHMR190111.pdf>.

⁶ A recent article in *The Economist* also argues that it is indeed the case (<http://www.economist.com/news/finance-and-economics/21595470-tiny-loans-are-getting-more-expensive-poor-service>).

McIntosh and Wydick (2005) investigate a related question of whether expansion of MFIs improves borrower welfare. In their model, borrowers are distinguished by the level of income which is known to the lending agencies. A benevolent MFI, in a monopoly situation, is therefore able to cross-subsidize poorer borrowers by charging a lower interest rate. When a new MFI enters, the incumbent's ability to cross-subsidize poor borrowers does not exist and, as a result, the poor borrowers are denied loan. This harms their welfare. Our conclusion is not so stark. We identify situations where all borrowers benefit from expansion. Guha and Roy Chowdhury (2013) also investigate certain questions that are of relevance for us; for example, whether default increases due to expansion of microfinance. Their result matches ours in that default does increase.⁷

Our analysis differs from these two studies in three crucial respects. First, these papers differentiate agents on the basis of income and assume MFIs have complete knowledge of the income of individual clients. We differentiate agents on the basis of risks and make a weaker informational assumption; that lenders only know the overall distribution of risk profiles, and not the risk characteristic of individual clients. As a result, all they can do is offer a menu of contracts from which borrowers can self-select. They cannot thrust a contract on borrowers based upon their knowledge of the borrowers' private characteristics. Nevertheless, some of our conclusions, for example, increase in default, match existing results in Guha and Roy Chowdhury (2013). Since we do not differentiate borrowers according to income, we do not address the question that McIntosh and Wydick (2005) consider as to whether the expansion of microfinance has benefited the poor. Second, the existing literature assumes that all MFIs are benevolent entities. In most of our analysis, we have done away with this assumption. Instead, we adopt, in our opinion, the more realistic view that while the initial (typically, small) entrants into the sector may be so motivated, subsequent expansion happens through the entry of profit-motivated entities.

There exists a significant literature on screening in credit markets (Besanko and Thakor, 1987; Bester, 1985, 1987; Stiglitz and Weiss, 1981). Much of this literature is based on the use of collateral as a screening mechanism. Our contribution is to extend the idea of screening to the context of microfinance where, instead of collateral, screening is based on more intangible factors as discussed earlier (see footnote 2).⁸

Our results show that when the microfinance sector expands, screening costs actually go down. An interesting question here is what are the repercussions of this result on informal sector lending? While we do not consider this question formally, we can make certain conjectures based on some models of horizontal linkages between formal and informal sources of credit.⁹ For example, Chaudhuri and Gupta (1996) and Gupta and Chaudhuri (1997) consider models where the paucity of funds with a formal source of credit (a bank) causes the loan seeker to bribe the bank official in order to reduce waiting time for obtaining the loan. In equilibrium, effective interest rate with the formal source of credit (actual interest rate plus the bribe paid) is equal to the interest rate prevailing in the informal sector. Extending this idea to our case, we conjecture that the effective interest rate charged by an MFI (interest rate plus the opportunity cost of waiting and the screening cost) equals the interest rate charged by the money lender. Then, if the screening

⁷ The main focus of Guha and Roy Chowdhury (2013) is on the issue of multiple borrowing in microfinance as the sector expands. Also see Lahkar and Pingali (2014) for an alternative explanation of multiple borrowing.

⁸ The literature also suggests other means of screening in credit markets. For example, see Jain (1999) for screening based on loan sizes.

⁹ Floro and Ray (1997) define horizontal linkages as follows: "Formal sector banks might compete directly with village moneylenders in credit provision." Similarly, they define vertical linkages as "Informal lenders are viewed as having access to formal sources of lending, and the funds thus borrowed are then re-lent."

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