

Microcredit: Points of Promise

Faculty Research Working Paper Series

Erica Field
Duke University

Abraham Holland
Harvard Institute for Quantitative Social Science

Rohini Pande
Harvard Kennedy School

September 2016

RWP16-036

Visit the **HKS Faculty Research Working Paper Series** at:
<https://research.hks.harvard.edu/publications/workingpapers/Index.aspx>

The views expressed in the **HKS Faculty Research Working Paper Series** are those of the author(s) and do not necessarily reflect those of the John F. Kennedy School of Government or of Harvard University. Faculty Research Working Papers have not undergone formal review and approval. Such papers are included in this series to elicit feedback and to encourage debate on important public policy challenges. Copyright belongs to the author(s). Papers may be downloaded for personal use only.

Microfinance: Points of Promise

Erica Field, Abraham Holland and Rohini Pande*

September 29, 2014

1 What is a miracle?

“Give a man a fish, he’ll eat for a day. Give a woman microcredit, she, her husband, her children and her extended family will eat for a lifetime.”

-Bono, New York Times, 2005

“Microcredit is not the “silver bullet” to end poverty.”

-Jomo Sundaram, UN Assistant Secretary-General for Economic Development, 2010

A majority of the world’s impoverished lack adequate access to financial services. Typically, formal banks do not target the poor because lending without collateral is considered too risky. Poor households seeking credit are subsequently forced into informal markets where the prices are high, the quantities limited, and the methods of insuring repayment can be brutal.

Since the poor arguably need liquidity more than anyone else, their impaired credit access is especially concerning. They face high levels of risk and have almost no savings “buffer,” which means that small income shocks can generate huge consequences for well-being. Furthermore, the majority are engaged in some form of

*The authors are from Duke University (Field) and Harvard University (Holland and Pande).

self-employment, and entrepreneurship often requires significant upfront capital. The limited availability of formal savings instruments make accumulating savings more difficult for the poor than for their richer counterparts. For all of these reasons, the rapid emergence of microfinance institutions (MFIs) providing banking services to poor individuals in low-income countries was believed to be a potentially powerful tool for poverty alleviation.

Has microfinance delivered on this promise? Perhaps the most challenging aspect of navigating the discourse surrounding microfinance has been the roller coaster of exuberance and disillusionment (see the quotes above). Today, the general belief is “microfinance is not a miracle.” While we as researchers long involved in microfinance certainly support a more pragmatic perspective, the excessive optimism we have seen does raise another question. What is humanity’s best example of a miracle intervention?

While there may be others, the discovery of penicillin and subsequent development of antibiotics is a likely contender. An estimate of antibiotics’ impact on average life expectancy is between 2-10 years (McDermott, 1982). Yet, achieving this level of impact took decades. In the case of penicillin, Sir Alexander Fleming made his initial discovery in 1928, but it was not until 1945 that mass production and distribution began, almost 20 years later (Aminov, 2010). This intervening period is filled with years of iterations, attempts, failures, intermediate successes, and a little serendipity. The penicillin strain ultimately found to have the best properties for commercial production came from a moldy cantaloupe in an Illinois fruit market (Aldridge and Sturichio, 1999). Despite these efforts, the specter of drug-resistant bacteria was not far behind. Roughly three decades after penicillin’s discovery in a petri dish of *S. Aureus*, an estimated 25% of community-based strains of the bacterium were resistant to penicillin (Chambers, 2001). Our advantage over this continually evolving challenge has only been maintained through corresponding improvements in antibiotics or other

supporting technologies.

Our experience with penicillin and antibiotics provides three critical lessons about “magic bullets.” First, the development of such products is far from miraculous, but rather reflects years of research and development. Second, the application of a miracle cure may be remarkably constrained – antibiotic “miracle drugs” are only effective when their use is well-defined, targeted, and consistently applied. Third, maintaining the miracle is a dynamic process – continuous innovation is required to prolong the effectiveness of these “magic bullets.”

Given this framework, some of the successes of microcredit are truly impressive. Microcredit began in the 1970s as a community-based antipoverty campaign predominantly targeting women that stood in opposition to the belief that the world’s poor were incapable of supporting credit (Cull et al., 2009). By 2011, the Microcredit Summit estimates microcredit reached 195 million people across the globe, many of whom previously lacked any kind of formal financial access (Reed, 2013). Over the past two decades, microcredit has become a key mechanism for providing credit to poor micro-entrepreneurs. Its impressive scale is rivaled perhaps only by its surprisingly low default rates. Producing global default assessments raises a number of problems due to varying definitions and differences in reporting, however it is common to see MFIs report default rates around 2%. From this perspective, the rapidity, scale, and scope of microcredit is real and its success remarkable.

Yet, the reality of microcredit still has failed to match the expectations for its ambrosia-laced representation. Critics have denounced the sector for failing to reach the poorest and most remote among potential clients. A typical MFI client is “working poor” rather than destitute. There has also been substantial controversy over alleged excessive pressure on clients to repay, and the industry is criticized often for exploiting the poor by encouraging them to take on high interest rate debt.¹ Perhaps most

¹Examples include media attention to farmer suicides in India that were blamed on microfinance debt, and the larger 2010 default crisis in the state of Andhra Pradesh, which led to calls for dramatic

damning, there is limited evidence that access to microcredit, in its current form, is associated with reductions in poverty through micro-entrepreneurship (Banerjee, 2013).

However, if we return to the problem-framing afforded by the antibiotics experience, then a different narrative emerges. Namely, limited impacts on poverty of current microfinance products are not purely failures, but critical lessons capable of helping us redesign microcredit to better serve the poor. Given this perspective, one such lesson is that financial services for the poor can succeed when products provide means for insuring clients while they undertake high-return but risky activities. Arguably, elements of microfinance that help provide greater insurance while relaxing credit constraints may be most important for creating significant impact.

In this chapter, we develop this view further with lessons gleaned from our portfolio of research on the microfinance sector in India. We begin by providing background on the emergence and current design of microfinance and explaining its theoretical underpinnings, then go on to highlight several points of promise: areas where our own empirical research suggests ways in which the delivery of microfinance may be changed to increase its impact on poverty and microenterprise growth. In particular, results from a series of field experiments that we conducted with MFIs in India demonstrate that it is possible to make microfinance work better for the poor with a few small changes to the existing model. Based on these studies, we explore different ways in which the microcredit experience can be tailored to improve targeting of key development outcomes.

2 The Idea of Microfinance

Microfinance began as an attempt to address a perceived poverty trap: poor households were unable to access formal loans due to lack of collateral, but without credit reforms to the already heavily regulated sector (Biswas, 2010; Menon, 2010).

they could not accumulate assets to be used as collateral. Microfinance sought to end this cycle by providing small loans – microcredit – without the typical asset requirements by harnessing social rather than physical collateral. In particular, by requiring new clients to have social ties to existing clients, MFIs could better select “good” clients (because those more likely to repay are more likely to be invited by existing group members) and also incentivize repayment with the threat of losing or damaging clients’ social ties to group members in cases of default. In this sense, in a microcredit contract social links were able to serve much the same purpose as physical collateral did in a standard loan contract.

The initial success of Bangladesh’s Grameen Bank with social collateral-based loans inspired the first wave of MFIs, largely consisting of nonprofit organizations providing loans to self-selected “Joint-Liability Groups” (JLGs). Each JLG member, typically female, received a loan “secured” by the social ties and shared responsibility of the entire group. If one group member defaulted, then the entire group was penalized. These loans were of reasonably short duration (three to ten months) and had relatively high interest rates (30-40%). Loan repayment usually took place at regular weekly meetings between JLG members and a loan officer that began a week or two after loan disbursement.

This “Grameen Bank” approach appeared to offer an attractive model. Taking advantage of local knowledge of fellow JLG members enabled institutions to screen out the worst credit risks prior to group formation. If an individual member was delinquent with repayments, then group members could apply social pressure to end delinquency or, in the case of those truly unable to pay, serve as informed guarantors and repay the delinquent funds themselves. From an MFI operations perspective, the JLG structure also reduced monitoring costs.²

Today, microfinance has expanded to encompass a range of financial products and

²Tracking and collecting loans in a group rather than at the individual level effectively lowered the cost of administering small loans to poor households.

services.³ Under this umbrella are nearly countless variations of savings, insurance, credit, and other financial offerings aimed at improving the well-being of urban and rural clients. Even early innovators like the Grameen Bank continue to develop and expand their offerings. The “Grameen Bank II” experience blends the structure and discipline of the original model with more breadth and greater flexibility.⁴ The notion microcredit is simply “loans for the poor” misses how significantly these products have evolved since their initial introduction.

Another iconic Indian microfinance pioneer, Self-Employed Women’s Association Bank (SEWA Bank), adopts a similarly broad perspective. Targeting poor women working in the informal sector, SEWA Bank seeks to address a client’s entire life cycle of potential financial needs. Every client has a saving account and access to a range of structured investment, pension, insurance, and credit products (although strong emphasis is placed on the importance of saving).⁵

These early innovators are not the only organizations updating their offerings. As observed by Dean Karlan and Jonathan Zinman, the microcredit industry has developed a “second generation,” distinguished by “for-profit lenders, extending individual liability credit, in increasingly urban and competitive settings” (Karlan and Zinman, 2010). Arguably, this distinction is not simply cosmetic, but rather reflects the fact that evidence on whether the joint liability structure is, itself, important remains mixed (Banerjee, 2013). Cull et al. (2007) analyze data from the Microfinance Information Exchange on 346 institutions employing a range of individual and group liability models. They report that organizations offering individual versus group li-

³Much of the current research, and this review, focuses on a particular subtype of microfinance, microcredit.

⁴In addition to multiple potential individual-liability loan types, a Grameen client now has access to life insurance, savings, and pension accounts. Even within a loan cycle, liquidity-strapped clients can access an additional line of credit based on the amount(s) previously paid on their current loan.

⁵SEWA Bank also has strong linkages with its other sister SEWA institutions, providing access to union support, training, and housing services. This comprehensive concern may be well-justified. In one non-experimental study of 900 women from the SEWA Bank service area in Ahmedabad, 71% reported at least one significant financial shock over the two-year study period (Chen and Snodgrass, 2001).

ability loans “have the highest average profit levels but they perform least well on measures of outreach.” Meanwhile, an RCT in the Philippines in which the joint liability structure was removed randomly from a set of loan groups, with the group structure remaining intact otherwise revealed no increase in delinquency or default (Karlan and Zinman, 2010).

Although much of microfinance’s success has been in demonstrating the possibility of providing loans to the poor without inordinate financial risk, evaluating the ability of such loans to improve the socioeconomic well-being of poor households is a critical part of the product development process. Prior to making such an evaluation, it is important to review the evidence on two issues. First, do poor households have access to profitable investment opportunities? If yes, this raises the second issue: Are poor households constrained in their ability to accumulate funds? If so, this may be because they are destitute and have no spare cash to save or place to put it aside secure from other household or community members – or from their own temptation.

Experimental studies such as De Mel et al. (2008) use randomized cash grants to small Sri Lankan enterprises and report real returns to capital between 55-65% per annum. While research in this area is certainly ongoing (Berge et al., 2011; McKenzie and Woodruff, 2008; Karlan et al., 2013), there is enough evidence to suggest our foundational assumption of access to profitable opportunities is not unreasonable for the average micro-entrepreneur and may be particularly true for men (De Mel et al., 2009).

In terms of whether microcredit client households are destitute, the recent Microcredit Summit Report indicates only 63% of microfinance households can be characterized as coming from “extreme poverty,” living on less than \$1.25/day (Reed, 2013). Furthermore, even those in extreme poverty are likely to have the capacity to save. Banerjee and Duflo (2007) utilize detailed household surveys across 13 countries to gain a detailed perspective on the financial lives of the poor (\leq \$2.16/day) and the ex-

tremely poor (\leq \$1.08/day). Contrary to what one might expect, even the extremely poor are clearly not spending all of their money on basic needs, as spending on food ranges between 56% and 78% of household income. While it is certainly reasonable that other non-food expenses could be very important, spending on alcohol, tobacco, and festivals typically also are a meaningful part of the remaining budget.

Studies on returns to savings products by Dupas and Robinson (2013) simultaneously support the view that poor households have the capacity to save and highlight the potential role of other constraints. More recent evidence shows that like the rich, the poor often exhibit time-inconsistent preferences. In addition, a high incidence of health shocks in this population greatly increases the need for easily accessible savings.

Microcredit's success at reducing poverty also depends on the degree to which microloans are used to finance investment. Looking across studies in three countries, Morduch (2013) observes that microloan usage is almost evenly split between business investment and other objectives. While these latter purchases could be welfare-improving (examples include financing household expenses and paying down debt), they are not likely to initiate a quick and permanent exodus from poverty.

Given the evidence on savings and credit opportunities in particular, microloans should have the capacity to help many clients speed up the rate of asset acquisition, thus initiating the climb out of poverty. Nevertheless, a review of seven recent experimental studies reveals no evidence of microcredit leading to sustained increases in income or consumption.⁶ When micro-businesses are affected by microcredit access, it generally appears to be on the intensive rather than extensive margin; i.e., improvements are seen with existing businesses, not via new business creation. Only two studies, Augsburg et al. (2012) and Banerjee et al. (2013) demonstrate statistically

⁶Studies considered for this statement include Augsburg et al. (2012); Angelucci et al. (2013); Attanasio et al. (2011); Crépon et al. (2011); Banerjee et al. (2013); Giné and Mansuri (2011); Karlan and Zinman (2010).

significant positive effects on business creation.

Within existing businesses, it does appear that microcredit facilitates business investment, and in some cases this is translated into increases in revenue. Unfortunately, all studies with the exception of Crépon et al. (2011) and Banerjee et al. (2013) fail to identify positive effects on profits at standard significance levels, and in both exceptions the impacts are concentrated in sub-populations.⁷

Another outcome often emphasized by the microcredit narrative is female empowerment. However, most studies report no effect on traditional empowerment measures. One exception is Angelucci et al. (2013) who find statistically significant, but relatively small, increases in the likelihood the female household member will participate in household decision-making. However, we should note an important caveat: unlike business profits which has a clear monetary definition, definitions of female empowerment may be context-specific and reporting may be subject to social desirability concerns. To date, most papers rely on clients' self-reported survey responses.⁸

3 Enhancing the Impact of Microcredit

Despite indications that microcredit has relatively weak impacts on traditional socio-economic measures, there are many reasons to hold out hope that microcredit products can be modified to enhance their effects on business investment and poverty. In par-

⁷In the case of Crépon et al. (2011), profits only increase in the agricultural household sub-sample. This appears to be driven by increased investments in hired farmhands. Banerjee et al. (2013) have even more nuanced findings. Benefits appear concentrated in the upper tail of micro-enterprises, with firms in the 90th percentile of profitability seeing a 20% increase in profits, but only after three years of exposure to microcredit.

⁸An example of just how difficult measuring female empowerment can be, Beaman et al. (2009) exploited a government program that randomly reserved village council seats for female candidates in India. The authors employed a combination of explicit and implicit tests to determine preferences regarding female elected officials. Implicit tests, those unlikely to be subject to social desirability bias, indicated both male and female villagers had strong preferences for leaders of their own gender. Simultaneously, when researchers solicited explicit perspectives, both men and women responded with preferences for male leaders. The contradictory results among female villagers encapsulates the challenge in assessing progress in empowering women: stated responses may not be an accurate measure.

ticular, evidence from several studies that we conducted in India suggest multiple ways to improve microfinance through design. The research also points to alternative measures (aside from profit) to judge microfinance's success or failure. So, how can we make microfinance more relevant to the poor?

The following subsections highlight five points of promise, areas where the research suggests ways to enhance or better understand the impact of microfinance on a range of important development outcomes. These include building more flexibility into the microfinance contract, directly encouraging greater business investment, using microfinance to build social capital, anticipating and measuring a broader range of development outcomes, and focusing more on the rural population.

3.1 Build Flexibility into the Microfinance Contract

There is increasing evidence that typical microcredit contract designs restrict the ways in which the poor use loan funds. Interestingly, much of today's microcredit arrangements bear little resemblance to loans offered by organizations such as the United States Small Business Administration (SBA), which are also designed, ostensibly, to support the kind of entrepreneurial risk-taking necessary for success. As pointed out by Glennon and Nigro (2005), these loans typically have fixed monthly (or less frequent) repayment schedules and an initial grace period between initial loan disbursement and the beginning of repayment. The default rate on SBA loans is also rather high, between 13% and 15%. On this point, the gap between microcredit loans and SBA loans is stark; in one study by Field et al. (2013) the default rates for individual-liability microloans in India were around 2%.

From a theoretical perspective, introducing grace periods or decreasing repayment frequency may increase a micro-entrepreneur's ability to self-insure. In more concrete terms, this would mean that a particularly bad performance one week could be offset by improvements the next. Alternatively, if a micro-entrepreneur knows she won't be

able to make a payment on time by herself, she has greater time to mobilize additional support to avoid default, or is less likely to need to liquidate business assets in order to make bank payments on time.

In a recent study, we use a field experiment to investigate directly the effect on business outcomes and household income of introducing a two-month grace period into the structure of an individual-liability microcredit agreement (Field et al., 2013). Introducing such a grace period has an immediate and positive effect: the rate of new business formation doubles and a greater portion of the loan is invested into the business. What is more surprising is that the effect on poverty is even more impressive: three years on, household income is 17% higher and business profits nearly double. Interestingly, the default rate on these loans increased from 2% to roughly 10%, still below the 13–15% experienced by companies receiving SBA loans, but a healthy indicator that micro-entrepreneurs indeed are taking greater risks when microcredit agreements allow them to do so.

A companion study explored the impact of switching from weekly to monthly repayment frequency (Field et al., 2012). The change more than doubled business income, increasing household income by 84–88%, and caused no increase in the default rate during the study period. In what could be the proverbial “win-win” situation, the same study found clients were 51% less likely to report feeling “worried, tense, or anxious” and 54% more likely to report feeling confident about repaying.

These results suggest significant leeway in enhancing microcredit’s effectiveness via simple changes to contract design. In particular, products providing more flexible capital, loosening the credit constraint and increasing the borrower’s ability to self-insure, appear to boost effectively the entrepreneurial capacity of poor clients. However, these results do come with an important caveat. Higher default rates associated with more flexible contracts present a significant obstacle to for-profit MFIs, particularly in settings in which loan terms and interest rates are heavily regulated.

Organizations like SBA enjoy substantial subsidies, but the political appetite for subsidizing private-sector MFIs may be limited. One approach could be to improve MFIs' ability to assess the risk of individual applicants – credit bureaus are one such mechanism, as they provide lending organizations a way to verify independently a potential borrower's financial capacity. In this way, credit bureaus alleviate some of the customer screening burden and enable MFIs to offer products tailored to the needs and capabilities of individual clients.

A key complementary lesson is the importance of not overregulating interest rates. That is, greater flexibility will generally only be possible if banks are allowed to charge higher interest rates to compensate for associated changes in lending risk. Constraining rates at artificially low levels may prevent MFIs from offering a menu of products catering to specific client needs, and thereby prevent MFI clients from “buying” more flexible loan contracts. Those seeking to protect the interests of the poor through microfinance regulation must be particularly careful on this front. Empirical research suggests that more limitations on lenders are likely to restrict their ability to get the lending model right.

3.2 Encourage Investment Directly

As stipulated by the Grameen Bank lending model, MFIs maintain high levels of interaction with their clients for purposes of loan monitoring. This suggests MFIs are also well-placed to disseminate information and training efficiently, potentially enhancing clients' use of microcredit. In particular, MFIs that follow the Grameen Bank model and interact regularly with clients have the potential to improve the likelihood that a particular client will take up a loan and improve the use to which loans funds are applied. One simple model for conceptualizing the role of financial literacy or business training in generating profits is that of perfect complements (Berge et al., 2011). In this framework, training can only help increase profits to the degree

that skills of the entrepreneur are the binding constraint. Once other factors such as social norms or access to further credit become the limiting factor, training must be suitably modified for it to have an impact.

Consistent with this framework, training programs that focus on conveying relatively basic, relevant and concise content have seen significant results. Drexler et al. (2012) conducted a randomized controlled trial (RCT) which found that teaching clients “rules of thumb” outperformed a more traditional financial literacy training program, showing substantial effects on sales (30% improvements) during bad weeks. Another experimental evaluation of training in simple practices, Berge et al. (2011) found significant impacts of business training on profits, between 25% and 30%, but these impacts were limited to male micro-entrepreneurs. No impacts were observed among women.

Still, many other studies find no significant effects on what arguably is the most important business outcome, profits. Using an experimental design in Ghana, Karlan et al. (2012) engage micro-entrepreneurs with combinations of cash grants and business consulting services. Despite its rather intensive nature, they find no evidence that this tailored management guidance increased profits. The authors also conduct a short review of ten other papers examining the effects of business training. Variations in business circumstance and training methods aside, only three of the ten show statistically significant positive effects on profits.

In the context of findings like these, one possibility for improvement is to help ensure more supportive environments for entrepreneurship outside the classroom, particularly for women, since many cultures consider work, especially risky entrepreneurial ventures, inappropriate for women. To shed light on some of these factors, Field et al. (2013) undertook an experimental analysis of a two-day business counseling program for female business owners. Half of the clients targeted by the training were invited to bring a friend. The counseling program also focused on assisting attendees in iden-

tifying and developing a plan to achieve a medium-term financial goal (one feasibly attainable in under six months).

Despite explicitly discouraging the women from acquiring debt, the training experience doubled the likelihood a woman would take out a loan, and loan size reflected the women's stated goals. Women who attended with a friend were more than twice as likely to take out a business loan, as opposed to one funding non-business goals such as home improvement or education. Upon follow-up, women who attended the training with a friend reported 11% higher household incomes and 15% higher expenditure, while those who attended by themselves were still indistinguishable from the control group. Interestingly, increased business investment did not translate into higher defaults; both treatment groups had similarly low default levels. Finally, among women trained with friends, the economic effects were particularly pronounced for women who faced more social restrictions, such as more conservative caste or religious constraints (also see Field et al., 2010).

3.3 Use Microfinance to Build Social Capital

Social capital has traditionally underpinned the design of microfinance products.⁹ In the face of inevitable setbacks and adverse events, informal insurance networks supported by social capital may be a critical source of support for micro-entrepreneurs. Indeed, such social capital formation may be a key reason the group-lending model can reduce default risk. Recent research has continued to explore this area, and has highlighted how the group meetings themselves, rather than simply group-liability, may build social capital directly.

One study, Feigenberg et al. (2013), uses a randomized experiment in Kolkata, India to examine the influence of microfinance meetings on social capital and the

⁹For the purposes of this paper, we apply Putnam's definition of social capital, "features of social organization, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993).

resulting ability of social networks to provide informal insurance. Clients in this experiment were offered individual-liability loans, but were required to meet and repay in groups either on a weekly or a monthly basis. Increased interaction associated with weekly meetings led to a lasting change in the degree of social connections between group members well beyond the loan cycle. In the short run, clients saw one another outside of meetings significantly more often, and these effects persisted two years later. Even after a large fraction of the groups had stopped meeting for loan purposes, those who had met weekly as opposed to monthly during their first loan cycle were significantly more likely to remain in regular contact with group members and state that they could rely on one another in cases of emergency.

Furthermore, clients assigned to the weekly meetings were three times less likely to default on their *subsequent* loan, irrespective of payment frequency. Employing a second arm of the same experiment, the study employs an artificial game to isolate what appears to be driving this effect: improved risk pooling. Furthermore, the more intense social interaction between microcredit group members appears not to “crowd out” a borrower’s non-microcredit social network, indicating that the microcredit experience may play an important role in improving the resilience of micro-entrepreneurs in the face of inevitable financial shocks and setbacks, even without the additional constraint of joint liability.

Furthermore, more recent research indicates that the effects of meeting frequency matter not only for first-time clients, as was demonstrated in Feigenberg et al. (2013), but also for clients who have been together for at least two prior loan cycles. In particular, a similar RCT in which third-time borrowers were randomized into weekly versus monthly meetings shows that social capital is significantly higher among the weekly groups despite the fact that group members already know one another at the onset of the loan cycle (Feigenberg et al., 2014). According to these results, regular microfinance meetings can continue to stimulate social contact among group members

for several years.

A related result is found in Karlan and Zinman (2010), who employ an RCT design in Manila, Philippines which randomly assigns access to individual liability microcredit loans to the marginal applicant. On balance, they find microcredit appears to increase the amount individuals are able to borrow from their social networks in an emergency.

While direct comparison of these findings is difficult given the difference in settings and loan products, the key message for microfinance policy is more general: to maximize the economic impact of providing microcredit, it makes sense to focus on a delivery model that encourages social interaction. Social capital appears to be stimulated in significant and economically meaningful ways by regular microfinance meetings. While the group-lending model may be favored for other reasons, it is reasonable to infer at least some of its success is a result of the relationships between borrowers fostered by regular meetings.

Based on this evidence, it makes sense not only to continue with the group-lending model, particularly with respect to new borrowers, but also to target microfinance towards clients who are particularly socially isolated. These results also suggest that women in socially restrictive settings may be of particular importance in understanding the potential effects of microcredit/microfinance as a development intervention, a topic we will discuss below.

3.4 Anticipate (and Measure) the Effect of Microfinance on Other Development Goals

One reason to hold out hope that microfinance can deliver on its promise of reducing poverty is the relative youth of the sector and the supporting experimental research: many of the potential channels through which the poor could benefit are arguably indirect and long-term, and hence have not been rigorously assessed by existing impact

evaluations.

Perhaps most notably, the gendered aspect of the traditional microfinance model – which caters exclusively to female clients – has led to claims microloans have the potential to empower women by increasing their bargaining power within the household.¹⁰ Increasing female bargaining power, in turn, has the potential to reduce poverty through several channels, including increasing rates of human capital accumulation (e.g. Thomas, 1990, 1994) and reducing fertility. While theoretically possible, it is not obvious that increasing household debt levels in female members' names will lead to greater female financial control, as MFI loan funds are generally used for household businesses and consumption.

To evaluate this claim empirically, Field et al. (2014) conducted a study of female clients in Ahmedabad, India who had received access to credit through one of the first microfinance institutions in the world, SEWA Bank. The study follows a sample of clients with SEWA Bank savings accounts from 1999 to 2009. Over this decade, about half of these women took out loans from SEWA bank. We make use of quasi-experimental variation in the placement of SEWA loan officers (female employees who collect payments door-to-door and receive commission on loans) in order to account for systematic differences between those who do and do not seek credit. This enables us to identify the causal effect of access to microloans on household financial and demographic outcomes. The intuition behind this empirical approach is the following: within a four-block radius, women that live on the same block as the loan officer look virtually identical according to observable measures to those who live slightly farther away, yet those who live slightly farther away are much less likely to take out a loan over the decade. distance of one's residence to that of the neighborhood loan officer arguably provides a valid source of exogenous variation in access to credit.

¹⁰In economics, intra-household bargaining power is generally about the ability of individual household members to assert their preferences over themselves or the entire household. Changing bargaining power has the potential to increase household well-being if the shift causes changes in household investment behavior. A classic treatise in this area is by Thomas (1990).

Similar to other impact evaluations of microfinance, this study also finds that access to microcredit is associated with no change in household income or business profits. However, there is a large and significant increase in the household's fraction of income earned by women and in female labor force participation. Most notably, access to credit is also associated with significant reduction in fertility and a significant increase in the marriage age of daughters, which suggests that increasing women's earning potential increased their bargaining power within the household. In the long run, the social and economic benefits of reductions in unwanted births may contribute to significant improvements in the lives of the poor.

3.5 Focus on the Rural Population

One of the greatest shortcomings of existing evidence on microfinance impacts is that virtually all evaluations take place in urban settings. Meanwhile, given the substantial differences between urban and rural areas, it seems reasonable to expect different constraints limiting micro-entrepreneurs in these two environments. One common assumption is that the rural poor face far greater credit constraints. While studies like Crépon et al. (2011) certainly find a near vacuum of credit access in rural Morocco, other studies discover levels of credit access analogous to urban areas. Attanasio et al. (2011) find over 60% of rural Mongolian residents have at least one outstanding loan prior to introducing microcredit. Similarly, Banerjee et al. (2013) determine 68% of urban residents in Hyderabad, India have some kind of formal or informal loan at baseline.¹¹ Given this picture, it is not immediately apparent the defining characteristic of the urban-versus-rural divide is simply access to credit.

Karlan et al. (2013) consider an alternative perspective: the constraining factor in rural environments may be uninsured risk rather than credit constraints. Using a field experiment, they randomly assign cash grants and rainfall insurance offerings

¹¹This number should be treated with some degree of suspicion due to baseline implementation challenges.

over multiple years, and find significant positive effects of insurance on investment in agricultural inputs. While the authors' particular point estimates will vary with realized weather outcomes, the immediate results can tell us something about the relative cost-effectiveness of cash grants (i.e. free money) versus rainfall insurance. Quoting their results, "the cost of the rainfall insurance is an order of magnitude less than the cost of the capital grant, while the consequential behavior change is an order of magnitude more. Hence the cost effectiveness is unambiguous and striking: If using subsidy money to generate higher farm investments, rainfall insurance grants are far more cost-effective than cash grants."

Another important aspect of their findings highlights a central role MFIs may play in enhancing the impact of rainfall insurance. As noted by Karlan, a significant hurdle for greater adoption of insurance is lack of trust between the farmer and insurance underwriter. Compared to traditional financial organizations, MFIs have far greater access to and familiarity with impoverished rural communities. While strategies will certainly vary, the microcredit group experience may be a scalable mechanism for fostering greater trust through educating borrowers as well as sharing experiences among clients.

Calderón et al. (2013) reinforces the potential value of MFIs as a platform for disseminating knowledge and training in rural areas. The authors employ an RCT design in evaluating an intensive six-week, 48-hour, business literacy training program for female business owners. The training program created statistically significant increases in profits and revenues, by roughly 23% and 28% respectively.¹² Business practices also changed as micro-entrepreneurs adopted improved accounting techniques and became increasingly likely to formally register their businesses. At least some of these practices proved contagious, as untreated businesses in treatment areas also adopted

¹²These estimates reflect the program's intention-to-treat effect, which is a conservative estimate of the program's effect. The treatment-on-the-treated effect, or effects on those that actually received the training, were 1.5 times larger.

better accounting techniques. These results have also been proven to be rather persistent: statistically significant effects are still detectable over two years after treatment. While this research focuses on the impact of the training program, it is important to note that business owners also reported having access to additional capital. Thus, these results are potentially subject to the availability of credit.

In summary, protection against risk and improvements in human capital appear to yield significant returns in rural areas. Microcredit may also have an explicit complementary effect, as tested by Karlan et al. (2013) with the use of cash grants. Keeping this in mind, the role of rural MFIs becomes particularly important. With appropriate design, MFIs can offer precisely the sustainable and scalable platform necessary to take advantage of these significant and economically important effects.

4 Concluding Remarks

We began this chapter by arguing that the lessons of a real “magic bullet” can provide a useful framework for understanding the evolution and potential promise of microfinance. With this perspective, we have experienced the same roller coaster of invention, failure, and reinvention as Sir Richard Fleming, who labored for years before penicillin’s eventual success. Similarly, current microfinance research has identified several points of promise for real, positive impact: adjustments in microcredit agreement structure, improvements in business training, and changes in the social aspects of borrowing. Such promise confirms the importance of creating a microfinance experience that both encourages greater entrepreneurial risk-taking and improves micro-entrepreneurs’ ability to protect themselves against risk. As we have seen in results from rural areas, MFIs’ role as a sustainable and trusted platform for financial inclusion may be particularly important for mitigating risk. Some effects may also be indirect and longer term, as could be the case for a range of female empowerment

outcomes.

The lessons learned from the penicillin “magic bullet” experience also carry a message for policymakers: effective regulation must be both smart and light-handed. Reactive policies may end up derailing the process of iteration and invention needed to deliver effective and efficient financial access to the poor. Yet, research has also exposed ways in which policy could spur evolution in the sector. The formation of credit bureaus could increase the ability of microfinance institutions to assess client credit risk, and regulation could encourage MFIs to offer a broader range of financial products. These appear to be two ways in which informed policy could enhance the effectiveness of microfinance organizations.

References

- Aldridge, S. and J. Sturichio (1999). *The Discovery and Development of Penicillin: 1928-1945*. London: American Chemical Society and Royal Society of Chemistry.
- Aminov, R. I. (2010, December). A brief history of the antibiotic era: Lessons learned and challenges for the future. *Frontiers in Microbiology* 1(134), 1–7.
- Angelucci, M., D. Karlan, and J. Zinman (2013, December). Microcredit impacts: Evidence from a randomized microcredit program placement experiment by compartamos banco. *Working Paper*.
- Attanasio, O., B. Augsburg, R. D. Haas, E. Fitzsimons, and H. Harmgart (2011). Group lending or individual lending? evidence from a randomised field experiment in mongolia. *EBRD Working Paper* (136).
- Augsburg, B., R. De Haas, H. Harmgart, and C. Meghir (2012, September). Microfinance at the margin: Experimental evidence from bosnia and herzegovina. *EBRD Working Paper* (146).
- Banerjee, A. (2013). Microcredit under the microscope: What have we learned in the past two decades, and what do we need to know? *Annual Review of Economics* 5(487–519).
- Banerjee, A. and E. Duflo (2007). The economic lives of the poor. *The Journal of Economic Perspectives* 21(1), 141–167.
- Banerjee, A., E. Duflo, R. Glennester, and C. Kinnan (2013, April). The miracle of microfinance? evidence from a randomized evaluation. *MIT Department of Economics Working Paper Series* (13-09).
- Beaman, L., R. Chattopadhyay, E. Duflo, R. Pande, and P. Topalova (2009). Powerful women: Does exposure reduce bias? *The Quarterly Journal of Economics* 124(4), 1497–1540.
- Berge, L. I., K. Bjorvatn, and B. Tungodden (2011). Human and financial capital for microenterprise development: Evidence from a field and lab experiment. *NHH Dept. of Economics Discussion Paper* (1/2011).
- Biswas, S. (2010). India’s micro-finance suicide epidemic.
- Calderón, G., J. M. Cunha, and G. D. Giorgi (2013, December). Business literacy and development: Evidence from a randomized controlled trial in rural mexico. *NBER Working Paper* (19740).
- Chambers, H. F. (2001, March-April). The changing epidemiology of staphylococcus aureus? *Emerging Infectious Diseases* 7(2), 178–182.

- Chen, M. A. and D. Snodgrass (2001, September). Managing resources, activities, and risk in urban india: The impact of sewa bank. *AIMS Project, USAID, Washington DC*.
- Crépon, B., F. Devoto, E. Duflo, and W. Parienté (2011, March). Impact of micro-credit in rural areas of morocco: Evidence from a randomized evaluation. *J-PAL Working Paper*.
- Cull, R., A. Demirgüç-Kunt, and J. Morduch (2007, February). Financial performance and outreach: A global analysis of leading microbanks. *The Economic Journal* 117(517), F107–F133.
- Cull, R., A. Demirgüç-Kunt, and J. Morduch (2009). Microfinance meets the market. *Journal of Economic Perspectives* 23(1), 167–192.
- De Mel, S., D. McKenzie, and C. Woodruff (2008). Returns to capital in microenterprises: Evidence from a field experiment. *The Quarterly Journal of Economics* 123(4), 1329–1372.
- De Mel, S., D. McKenzie, and C. Woodruff (2009, July). Are women more credit constrained? experimental evidence on gender and microenterprise returns. *American Economic Journal: Applied Economics* 1(3), 1–32.
- Drexler, A., G. Fischer, and A. Schoar (2012, May). Keeping it simple: Financial literacy and rules of thumb. *Working Paper*.
- Dupas, P. and J. Robinson (2013). Why don't the poor save more? evidence from health savings experiments. *American Economic Review* 103(4), 1138–1171.
- Feigenberg, B., E. Field, and R. Pande (2013). The economic returns to social interaction: Experimental evidence from microfinance. *The Review of Economic Studies* 80(4), 1459–1483.
- Feigenberg, B., E. Field, R. Pande, N. Rigol, and S. Sarkar (2014). Do group dynamics influence social capital gains among microfinance clients? evidence from a randomized experiment in urban india. *Forthcoming, Journal of Policy Analysis and Management*.
- Field, E., S. Jayachandran, and R. Pande (2010, May). Do traditional institutions constrain female entrepreneurship? a field experiment on business training in india. *American Economic Review Papers & Proceedings* 100(2), 125–129.
- Field, E., S. Jayachandran, R. Pande, and N. Rigol (2013, December). Borrowing with friends: A field experiment on business counseling. *Working Paper*.
- Field, E., J. Martinez, and R. Pande (2014, August). Access to microfinance, female empowerment and fertility in urban india. *Working Paper*.

- Field, E., R. Pande, J. Papp, and Y. J. Park (2012). Repayment flexibility can reduce financial stress: A randomized control trial with microfinance clients in india. *PLoS ONE* 7(9).
- Field, E., R. Pande, J. Papp, and N. Rigol (2013). Does the classic microfinance model discourage entrepreneurship among the poor? experimental evidence from india. *American Economic Review* 103(6), 2196–2226.
- Giné, X. and G. Mansuri (2011, September). Money or ideas? a field experiment on constraints to entrepreneurship in rural pakistan. *Unpublished manuscript, World Bank, Washington, DC*.
- Glennon, D. and P. Nigro (2005, October). Measuring the default risk of small business loans: A survival analysis approach. *Journal of Money, Credit and Banking* 37(5), 923–947.
- Karlan, D., R. Knight, and C. Udry (2012, August). Hoping to win, expected to lose: Theory and lessons on micro enterprise development. *NBER Working Paper* (18325).
- Karlan, D., R. D. Osei, I. Osei-Akoto, and C. Udry (2013, December). Agricultural decisions after relaxing credit and risk constraints. *Quarterly Journal of Economics - Forthcoming*.
- Karlan, D. and J. Zinman (2010, January). Expanding microenterprise credit access: Using randomized supply decisions to estimate the impacts in manila. *Working Paper*.
- McDermott, R. W. (1982). Social ramifications of control of microbial disease. *Johns Hopkins Medical Journal* 151(6), 302–312.
- McKenzie, D. and C. Woodruff (2008). Experimental evidence on returns to capital and access to finance in mexico. *The World Bank Economic Review* 22(3), 457–482.
- Menon, P. (2010, November 12). Need to regulate microfinance institutions: Aidwa.
- Morduch, J. (2013). How microfinance really works. *Milken Institute Review Second Quarter*, 51–59.
- Putnam, R. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Reed, L. (2013). *Vulnerability: State of the Microcredit Summit Campaign Report 2013*. Washington, DC: Microcredit Summit Campaign.
- Thomas, D. (1990). Intra-household resource allocation: An inferential approach. *Journal of human resources* 25(4), 635–664.
- Thomas, D. (1994). Like father, like son; like mother, like daughter: Parental resources and child height. *Journal of Human Resources* 29(4), 950–988.