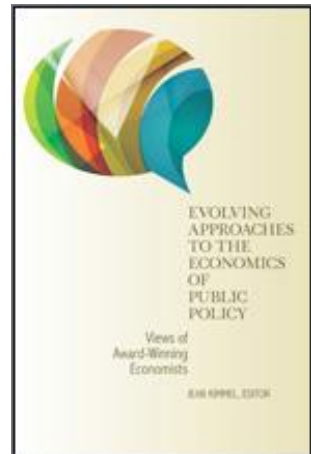

Upjohn Institute Press

Microfinance: Points of Promise

Erica Field
Duke University

Abraham Holland
Harvard University

Rohini Pande
Harvard University



Chapter 2 (pp. 11-32) in:

Evolving Approaches to the Economics of Public Policy: Views of Award-Winning Economists

Jean Kimmel, editor.

Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2016

DOI:/ 10.17848/9780880995146.ch2

**Evolving Approaches to the
Economics of Public Policy**

Views of Award-Winning Economists

Jean Kimmel
Editor

2016

W.E. Upjohn Institute for Employment Research
Kalamazoo, Michigan

Library of Congress Cataloging-in-Publication Data

Names: Kimmel, Jean, editor.

Title: Evolving approaches to the economics of public policy : views of award-winning economists / Jean Kimmel, editor.

Description: Kalamazoo : W.E. Upjohn Institute for Employment Research, 2016.
| Includes index.

Identifiers: LCCN 2016038681 | ISBN 9780880995122 (pbk. : alk. paper) | ISBN 0880995122 (pbk. : alk. paper) | ISBN 9780880995139 (hardcover : alk. paper) | ISBN 0880995130 (hardcover : alk. paper) | ISBN 9780880995146 (ebook) | ISBN 0880995149 (ebook)

Subjects: LCSH: Political planning. | Economic Policy. | Microfinance.

Classification: LCC JF51 .E86 2016 | DDC 320.6--dc23

LC record available at <https://lccn.loc.gov/2016038681>

© 2016

W.E. Upjohn Institute for Employment Research
300 S. Westnedge Avenue
Kalamazoo, Michigan 49007-4686

The facts presented in this study and the observations and viewpoints expressed are the sole responsibility of the authors. They do not necessarily represent positions of the W.E. Upjohn Institute for Employment Research.

Cover design by Carol A.S. Derks.
Index prepared by Diane Worden.
Printed in the United States of America.
Printed on recycled paper.

2

Microfinance

Points of Promise

Erica Field
Duke University

Abraham Holland
Harvard University

Rohini Pande
Harvard University

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, U.N. assistant secretary-general for economic development (2010)

WHAT IS A MIRACLE?

A majority of the world's impoverished people 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 consequently forced into informal markets where the prices are high, the quantities limited, and the methods of ensuring 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 their well-being. Furthermore, the majority are engaged in some form of self-employment, and entrepreneurship often requires significant capital up front. The limited availability of formal savings instruments makes accumulating savings more difficult for the poor to do 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 epigraphs above). Today, the general belief is that “microfinance is not a miracle.” While we, as researchers who have been long involved in the study of 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 the subsequent development of antibiotics is a likely contender. One estimate places antibiotics’ impact on average life expectancy at between 2 and 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—almost 20 years later—that mass production and distribution began (Aminov 2010). This intervening period was 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, Parascandola, and Sturchio 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 containing strains of *Staphylococcus aureus*, an estimated 25 percent of community-based strains of the bacterium were resistant to penicillin (Chambers 2001). Our advantage in 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. This campaign stood in opposition to the belief that the world’s poor were incapable of supporting credit (Cull, Demirgüç-Kunt, and Morduch 2009). The Global Microcredit Summit 2011 Report estimated that by that year, microcredit had reached 195 million people across the globe, many of whom previously had 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 microentrepreneurs. Its impressive scale is rivaled perhaps only by its surprisingly low default rates. Producing global default assessments gives rise to a number of problems stemming from varying definitions and differences in reporting. However, it is common to see MFIs report default rates of around 2 percent. From this perspective, the rapidity, scale, and scope of microcredit is real, and its success is remarkable.

Yet the reality of microcredit still has failed to match the lofty expectations for it. 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 often criticized for exploiting the poor by encouraging them to take on high-interest-rate debt.¹ Perhaps most damning, there is limited evidence that access to microcredit, in its current form, is associated with reductions in poverty through microentrepreneurship (Banerjee 2013).

However, if we return to the problem-framing afforded by the antibiotics experience, then a different narrative emerges: namely, that the limited impacts on poverty that current microfinance products are having does not make them purely failures, but rather critical lessons capa-

ble 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 the means for insuring clients while those clients undertake high-return but risky activities. Arguably, elements of microfinance that help provide greater insurance while relaxing credit constraints may be the most important for creating a 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 by explaining its theoretical underpinnings. We go on to highlight several points of promise: areas where our own empirical research suggests ways in which the delivery of microfinance might 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.

THE IDEA OF MICROFINANCE

Microfinance began as an attempt to address a perceived poverty trap: poor households, because of a lack of collateral, were unable to access formal loans, but without credit 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 clients more likely to be invited by existing group members are more likely to repay) and also incentivize repayment because of the threat of losing or damaging one’s social ties to group members in cases of default. In this sense, in a microcredit contract, social links are able to serve much the same purpose as physical collateral does 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 (3 to 10 months) and had relatively high interest rates (30–40 percent). Loan repayment usually took place at regular weekly meetings between JLG members and a loan officer; the meetings began a week or two after loan disbursement.

This "Grameen Bank approach" appeared to offer an attractive model. Taking advantage of the 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 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 that microcredit is simply "loans for the poor" misses how significantly these products have evolved since their initial introduction.

Another iconic Indian microfinance pioneer, the 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 savings account and access to a variety 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 Karlan and Zinman (2009, p. 3), the microcredit industry has developed a “second generation,” distinguished by “for-profit lenders, extending individual liability credit, in increasingly urban and competitive settings.” 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, Demirgüç-Kunt, and Morduch (2007) analyze data from the Microfinance Information Exchange on 346 institutions employing an assortment of individual and group liability models. They report that organizations offering individual versus group liability loans “have the highest average profit levels but they perform least well on measures of outreach” (p. F109). Meanwhile, a randomized controlled trial (RCT) in the Philippines in which the joint liability structure was removed randomly from a set of loan groups (but the group structure remained otherwise intact) revealed no increase in delinquency or default, according to Karlan and Zinman.

Although much of microfinance’s success has been in demonstrating the possibility of providing loans to the poor without incurring 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 a 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 no place to put it aside secure from other household or community members—or from their own temptation.

Experimental studies such as de Mel, McKenzie, and Woodruff (2008) use randomized cash grants to small Sri Lankan enterprises and report real returns to capital of between 55 and 65 percent a year. While research in this area is certainly ongoing (Berge, Bjorvatn, and Tungodden 2011; Karlan et al. 2014; McKenzie and Woodruff 2008), there is enough evidence to suggest that our foundational assumption of access to profitable opportunities is not unreasonable for the average microentrepreneur and may be particularly true for men (de Mel, McKenzie, and Woodruff 2009).

In terms of whether microcredit client households are destitute, the Global Microcredit Summit 2011 Report indicates that only 63 per-

cent of microfinance households can be characterized as coming from “extreme poverty,” defined as living on less than \$1.25 a 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 an in-depth perspective on the financial lives of the poor (those living on less than \$2.16 a day) and the extremely poor (those living on less than \$1.08 a day). Contrary to what one might expect, even the extremely poor are clearly not spending all of their money on basic needs, as their spending on food ranges between 56 and 78 percent of household income. While it is certainly reasonable that other, nonfood expenses could be very important, spending on alcohol, tobacco, and festivals typically makes up a meaningful part of the remaining budget as well.

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 constraints they face that make it difficult to save. 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 effect 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 microbusinesses 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 from new business creation. Only two studies, Augsburg et al. (2012)

and Banerjee et al. (2013), demonstrate statistically significant positive effects on business creation.

Within existing businesses, it does appear that microcredit facilitates business investment, and in some cases this translates 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 subpopulations.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, Karlan, and Zinman (2013), who find statistically significant but relatively small increases in the likelihood that the female household member will participate in household decision making. However, we should note an important caveat: unlike business profits, which have 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

ENHANCING THE IMPACT OF MICROCREDIT

Despite indications that microcredit has relatively weak impacts on traditional socioeconomic 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 particular, evidence from several studies that we conducted in India suggests 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 variety 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.

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, many of today's microcredit arrangements bear little resemblance to loans offered by organizations such as the U.S. 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 a grace period between the initial loan disbursement and the beginning of repayment. The default rate on SBA loans is also rather high—between 13 and 15 percent. On this point, the gap between microcredit loans and SBA loans is stark; in one study by Field, Pande, et al. (2013), the default rates for individual-liability microloans in India were around 2 percent.

From a theoretical perspective, introducing grace periods or decreasing repayment frequency may increase a microentrepreneur'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 microentrepreneur knows she won't be able to make a payment on time by herself, she has more 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, Jayachandran, 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 percent higher and business profits nearly double. Interestingly, the default rate on these loans increases from 2 percent to roughly 10 percent, still below the 13–15 percent experienced by companies receiving SBA loans, but a healthy indicator that microentrepreneurs 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, increased household income by 84–88 percent, and caused no increase in the default rate during the study period. In what could be a proverbial “win-win” situation, the same study found that clients were 51 percent less likely to report feeling “worried, tense, or anxious” and 54 percent more likely to report feeling confident about repaying.

These results suggest that there is significant leeway in how to enhance microcredit’s effectiveness by making 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 effectively boost the entrepreneurial capacity of poor clients. However, these results do come with an important caveat: the 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 for doing so, as they provide lending organizations with a way to independently verify 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.

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 that 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 increase the likelihood that a particular client will take up a loan and increase the use to which loan 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, Bjorvatn, and Tungodden 2011). In this framework, training can help increase profits only to the degree that the 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, Fischer, and Schoar (2014) conducted an RCT that found that teaching clients "rules of thumb" outperformed a more traditional financial literacy training program, showing substantial effects on sales (improvements of 30 percent or more) during bad weeks. Another experimental evaluation of training in simple practices, Berge, Bjorvatn, and Tungodden (2011), found significant impacts of business training on profits, between 25 and 30 percent, but these impacts were limited to male microentrepreneurs. 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, Knight, and Udry (2012) engage microentrepreneurs with combinations of cash grants and business consulting services. Despite the rather intensive nature of this tailored management guidance, they find no evidence that the effort increases profits. The authors also conduct a short review of 10 other papers examining the effects of business training. Variations in business circumstance and training methods aside, only 3 of the 10 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, Jayachandran,

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 identifying 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 that a woman would take out a loan, and loan size reflected the woman's stated goals. Women who attended with a friend were more than twice as likely to take out a business loan as they were to take out a loan to fund nonbusiness goals such as home improvement or education. Upon follow-up, women who attended the training with a friend reported 11 percent higher household incomes and 15 percent higher expenditures, 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, Jayachandran, and Pande 2010).

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 microentrepreneurs. 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, Field, and Pande (2013), uses a randomized experiment in the city of Kolkata (formerly Calcutta), India, to examine the influence of microfinance meetings on social capital and the resulting ability of social networks to provide informal insurance. Clients in this experiment were offered individual-liability loans but were required to meet to repay the loans 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 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 fellow 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 used an artificial game to isolate what appears to be driving this effect: improved risk pooling. Added to that, the more intense social interaction between microcredit group members appears not to “crowd out” a borrower’s nonmicrocredit social network, indicating that the microcredit experience may play an important role in improving the resilience of microentrepreneurs in the face of inevitable financial shocks and setbacks, even without the additional constraint of joint liability.

Beyond this, more recent research indicates that the frequency with which meetings are held matters not only for first-time clients, as was demonstrated in Feigenberg, Field, and Pande (2013), but also for clients who have been together for at least two previous 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 outset 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 (2009); the authors employ an RCT design in Manila, the Philippines, that randomly assigns access to individual liability microcredit loans to the marginal applicant. On balance, they find that 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 that 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 toward 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.

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 that 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, Pande, and Martinez (2015) 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 commissions on loans) in order to account for systematic differences between those who do and those who 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 have virtually identical finances, according to observable measures, as 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. The distance of one's residence to that of the neighborhood loan officer arguably provides a valid source of exogenous variation in access to credit.

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 a significant reduction in fertility and a significant increase in the marriage age of daughters, which suggests that increasing women's earning potential increases 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.

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 that there will be different constraints limiting microentrepreneurs 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 that more than 60 percent of rural Mongolian residents have at least one outstanding loan prior to their introduction to microcredit. Similarly, Banerjee et al. (2013) determine that 68 percent 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 that the defining characteristic of the urban-versus-rural divide is simply access to credit.

Karlan et al. (2014) consider an alternative perspective: that the constraining factor in rural environments may be uninsured risk rather than credit constraints. Using a field experiment, they randomly assigned cash grants and rainfall insurance offerings over multiple years and found 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. Their results note that "the cost of the rainfall insurance is an order of magnitude less than the cost of the capital grant, whereas 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" (p. 628).

Another important aspect of their findings highlights a central role MFIs may play in enhancing the impact of rainfall insurance. As noted by Karlan et al. (2014), a significant hurdle for greater adoption of insurance is lack of trust between the farmer and the 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, Cunha, and De Giorgi (2013) reinforce 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 percent, respectively.¹² Business practices also changed as microentrepreneurs 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 better accounting techniques. These results have also been proven to be rather persistent: statistically significant effects are still detectable more than 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. (2014) 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.

CONCLUSION

We began this chapter by arguing that the lessons of a real example of a “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 microentrepreneurs’ ability to protect themselves against risk. As we have seen in results from rural areas, the role of MFIs as a sustainable and trusted platform for financial inclusion may be particularly important for miti-

gating risk. Some effects may also be indirect and longer-term, as could be the case for a variety 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.

Notes

1. Examples include media attention to farmer suicides in India, which were blamed on microfinance debt, and the larger 2010 default crisis in the state of Andhra Pradesh, which led to calls for dramatic reforms to the already heavily regulated sector (Biswas 2010; Menon 2010).
2. Tracking and collecting loans in a group rather than at the individual level effectively lowered the cost of administering small loans to poor households.
3. Much of the current research, as well as this review, focuses on a particular subtype of microfinance, microcredit.
4. In addition to multiple potential individual-liability loan types, a Grameen client now has access to life insurance, savings accounts, and pension accounts. Even within a loan cycle, liquidity-strapped clients can access an additional line of credit based on the amounts previously paid on their current loans.
5. SEWA 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 nonexperimental study of 900 women from the SEWA Bank service area in Ahmedabad, 71 percent reported at least one significant financial shock over the two-year study period (Chen and Snodgrass 2001).
6. Studies considered for this statement include Angelucci, Karlan, and Zinman (2013), Attanasio et al. (2011), Augsburg et al. (2012), Banerjee et al. (2013), Crépon et al. (2011), Giné and Mansuri (2011), and Karlan and Zinman (2009).
7. In the case of Crépon et al. (2011), profits increase only in the agricultural household subsample. 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 microenterprises, with firms in the ninetieth percentile of profitability seeing a 20 percent increase in profits, but only after three years of exposure to microcredit.

8. In an example of just how difficult it can be to measure female empowerment, 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 that 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 encapsulate the challenge in assessing progress in empowering women: stated responses may not be an accurate measure.
9. For the purposes of this chapter, 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).
10. In economics, intrahousehold 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. Thomas (1990) has published a classic treatise in this area.
11. This number should be treated with some degree of suspicion because of baseline implementation challenges.
12. These 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 the effect on those that actually received the training, was 1.5 times larger.

References

- Aldridge, Susan, John Parascandola, and Jeffrey Louis Sturchio. 1999. *The Discovery and Development of Penicillin, 1928–1945*. Washington, DC: American Chemical Society; London: Royal Society of Chemistry.
- Aminov, Rustam I. 2010. "A Brief History of the Antibiotic Era: Lessons Learned and Challenges for the Future." *Frontiers in Microbiology* 1(2010): 1–7.
- Angelucci, Manuela, Dean Karlan, and Jonathan Zinman. 2013. "Microcredit Impacts: Evidence from a Randomized Microcredit Program Placement Experiment by Compartamos Banco." Working paper. Hanover, NH: Dartmouth University. http://www.dartmouth.edu/~jzinman/Papers/CompartamosImpact_Dec16_2013.pdf (accessed January 27, 2016).
- Attanasio, Orazio, Britta Augsburg, Ralph De Haas, Emla Fitzsimons, and Heike Harmgart. 2011. "Group Lending or Individual Lending? Evidence from a Randomised Field Experiment in Mongolia." EBRD Working Paper No. 136. London: European Bank for Reconstruction and Development.

- <http://www.ebrd.com/downloads/research/economics/workingpapers/wp0136.pdf> (accessed January 27, 2016).
- Augsburg, Britta, Ralph De Haas, Heike Harmgart, and Costas Meghir. 2012. "Microfinance at the Margin: Experimental Evidence from Bosnia and Herzegovina." EBRD Working Paper No. 146. London: European Bank for Reconstruction and Development. <http://www.ebrd.com/downloads/research/economics/workingpapers/wp0146.pdf> (accessed January 27, 2016).
- Banerjee, Abhijit. 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(2013): 487–519.
- Banerjee, Abhijit, and Esther Duflo. 2007. "The Economic Lives of the Poor." *Journal of Economic Perspectives* 21(1): 141–167.
- Banerjee, Abhijit, Esther Duflo, Rachel Glennerster, and Cynthia Kinnan. 2013. "The Miracle of Microfinance? Evidence from a Randomized Evaluation." Department of Economics Working Paper No. 13-09. Cambridge, MA: Massachusetts Institute of Technology.
- Beaman, Lori, Raghendra Chattopadhyay, Esther Duflo, Rohini Pande, and Petia Topalova. 2009. "Powerful Women: Does Exposure Reduce Bias?" *Quarterly Journal of Economics* 124(4): 1497–1540.
- Berge, Lars Ivar, Kjetil Bjorvatn, and Bertil Tungodden. 2011. "Human and Financial Capital for Microenterprise Development: Evidence from a Field and Lab Experiment." NHH Department of Economics Discussion Paper No. 1/2011. Bergen, Norway: Norwegian School of Economics (NHH).
- Biswas, Soutik. 2010. "India's Microfinance Suicide Epidemic." BBC News online, December 16. <http://www.bbc.com/news/world-south-asia-11997571> (accessed February 11, 2016).
- Bono. 2005. "10 Questions for ... Bono." *New York Times*, September 21. <http://www.nytimes.com/2005/09/21/readersopinions/bono.html> (June 28, 2016).
- Calderón, Gabriela, Jesse M. Cunha, and Giacomo De Giorgi. 2013. "Business Literacy and Development: Evidence from a Randomized Controlled Trial in Rural Mexico." NBER Working Paper No. 19740. Cambridge, MA: National Bureau of Economic Research.
- Chambers, Henry F. 2001. "The Changing Epidemiology of *Staphylococcus Aureus*?" *Emerging Infectious Diseases* 7(2): 178–182.
- Chen, Martha A., and Donald Snodgrass. 2001. *Managing Resources, Activities, and Risk in Urban India: The Impact of SEWA Bank*. The AIMS Project: Assessing the Impact of Microenterprise Services (AIMS). Washington, DC: United States Agency for International Development.
- Crépon, Bruno, Florencia Devoto, Esther Duflo, and William Parienté. 2011. "Impact of Microcredit in Rural Areas of Morocco: Evidence from a Randomized Evaluation." Impact Analyses Series, No. 7. Paris: Agence Française de Développement.

- Cull, Robert, Asli Demirgüç-Kunt, and Jonathan Morduch. 2007. "Financial Performance and Outreach: A Global Analysis of Leading Microbanks." *Economic Journal* 117(517): F107–F133.
- . 2009. "Microfinance Meets the Market." *Journal of Economic Perspectives* 23(1): 167–192.
- de Mel, Suresh, David McKenzie, and Christopher Woodruff. 2008. "Returns to Capital in Microenterprises: Evidence from a Field Experiment." *Quarterly Journal of Economics* 123(4): 1329–1372.
- . 2009. "Are Women More Credit Constrained? Experimental Evidence on Gender and Microenterprise Returns." *American Economic Journal: Applied Economics* 1(3): 1–32.
- Drexler, Alejandro, Greg Fischer, and Antoinette Schoar. 2014. "Keeping It Simple: Financial Literacy and Rules of Thumb." *American Economic Journal: Applied Economics* 6(2): 1–31.
- Dupas, Pascaline, and Jonathan Robinson. 2013. "Why Don't the Poor Save More? Evidence from Health Savings Experiments." *American Economic Review* 103(4): 1138–1171.
- Feigenberg, Benjamin, Erica Field, and Rohini Pande. 2013. "The Economic Returns to Social Interaction: Experimental Evidence from Microfinance." *Review of Economic Studies* 80(4): 1459–1483.
- Feigenberg, Benjamin, Erica Field, Rohini Pande, Natalia Rigol, and Shayak Sarkar. 2014. "Do Group Dynamics Influence Social Capital Gains among Microfinance Clients? Evidence from a Randomized Experiment in Urban India." *Journal of Policy Analysis and Management* 33(4): 932–949.
- Field, Erica, Seema Jayachandran, and Rohini Pande. 2010. "Do Traditional Institutions Constrain Female Entrepreneurship? A Field Experiment on Business Training in India." *American Economic Review* 100(2): 125–129.
- Field, Erica, Seema Jayachandran, Rohini Pande, and Natalia Rigol. 2013. "Borrowing with Friends: A Field Experiment on Business Counseling." Working paper. Durham, NC: Duke University.
- Field, Erica, Rohini Pande, and Jose Martinez. 2015. "Access to Microfinance, Female Empowerment, and Fertility in Urban India." Working paper. Princeton, NJ: Princeton University.
- Field, Erica, Rohini Pande, John Papp, and Y. Jeanette Park. 2012. "Repayment Flexibility Can Reduce Financial Stress: A Randomized Control Trial with Microfinance Clients in India." *PLoS ONE* 7(9): e45679.
- Field, Erica, Rohini Pande, John Papp, and Natalia Rigol. 2013. "Does the Classic Microfinance Model Discourage Entrepreneurship among the Poor? Experimental Evidence from India." *American Economic Review* 103(6): 2196–2226.
- Giné, Xavier, and Ghazala Mansuri. 2011. "Money or Ideas? A Field Experi-

- ment on Constraints to Entrepreneurship in Rural Pakistan.” Policy Research Working Paper No. 6959. Washington, DC: World Bank.
- Glennon, Dennis, and Peter Nigro. 2005. “Measuring the Default Risk of Small Business Loans: A Survival Analysis Approach.” *Journal of Money, Credit, and Banking* 37(5): 923–947.
- Karlan, Dean, Ryan Knight, and Christopher Udry. 2012. “Hoping to Win, Expected to Lose: Theory and Lessons on Micro Enterprise Development.” NBER Working Paper No. 18325. Cambridge, MA: National Bureau of Economic Research.
- Karlan, Dean, Robert Osei, Isaac Osei-Akoto, and Christopher Udry. 2014. “Agricultural Decisions after Relaxing Credit and Risk Constraints.” *Quarterly Journal of Economics* 129(2): 597–652.
- Karlan, Dean, and Jonathan Zinman. 2009. “Expanding Microenterprise Credit Access: Using Randomized Supply Decisions to Estimate the Impacts in Manila.” Economic Growth Center Discussion Paper No. 976. New Haven, CT: Yale University.
- McDermott, Walsh. 1982. “Social Ramifications of Control of Microbial Disease.” *Johns Hopkins Medical Journal* 151(6): 302–312.
- McKenzie, David, and Christopher Woodruff. 2008. “Experimental Evidence on Returns to Capital and Access to Finance in Mexico.” *World Bank Economic Review* 22(3): 457–482.
- Menon, Parvathi. 2010. “Need to Regulate Microfinance Institutions: AIDWA.” *The Hindu*, November 12. <http://www.thehindu.com/todays-paper/tp-national/need-to-regulate-microfinance-institutions-aidwa/article880939.ece> (accessed February 16, 2016).
- Morduch, Jonathan. 2013. “How Microfinance Really Works.” *Milken Institute Review* 2013(2): 51–59.
- Putnam, Robert D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Reed, Larry R. 2013. *Vulnerability: The State of the Microcredit Summit Campaign Report, 2013*. Washington, DC: Microcredit Summit Campaign.
- Sundaram, Jomo Kwame. 2010. “Microfinance Isn’t the ‘Silver Bullet’ to End Poverty.” *Financial Times*, December 16. <http://www.ft.com/cms/s/0/4f258ab6-08b0-11e0-b981-00144feabdc0.html#axzz4CsawtQX> (accessed June 28, 2016).
- Thomas, Duncan. 1990. “Intra-Household Resource Allocation: An Inferential Approach.” *Journal of Human Resources* 25(4): 635–664.
- . 1994. “Like Father, Like Son; Like Mother, Like Daughter: Parental Resources and Child Height.” *Journal of Human Resources* 29(4): 950–988.