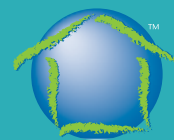


# MEASURING THE IMPACT OF MICROFINANCE



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## TAKING ANOTHER LOOK

by Kathleen Odell



### **About the Author**

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# FOREWORD

During the International Year of Microcredit (IYMC) in 2005, I became frustrated when many speakers at international fora routinely mischaracterized the findings of the growing body of research that looks into whether, and how, microcredit was effective in addressing global poverty. As part of our contribution to the success of the IYMC, we commissioned Nathanael Goldberg to survey the literature and report, in layman's terms, what we knew at that time.

As it turned out, the report seemed to fill a critical gap in our movement's learning agenda and was used by an impressive group of policy makers, donors, investors, academics, and practitioners. Goldberg himself has gone on to do great things as a researcher at Innovations for Poverty Action.

Not surprisingly, the field moved on. New research was published, some of which (at least according to media reports) appeared to contradict some of the main findings of the Goldberg report. In addition, criticisms of earlier research—both specific studies and entire categories of scholarly inquiry into the effectiveness of microfinance—emerged and sparked fascinating and impassioned debate that was often difficult for non-specialists to track and decipher.

I saw a need to commission an updated literature review, and I was pleased to meet Professor Kathleen Odell last year at an impressive conference that Dominican University's Brennan School of Business (where Odell is an assistant professor of economics) convened in Chicago. In a hurried conversation between sessions, I explained the need as I saw it and encouraged her to read the Goldberg report to see if she was up to taking it forward. She agreed and rapidly convinced the Brennan School of Business to lighten her teaching load this spring so that she could produce the paper on a compressed schedule. She was willing to do this through our Bankers without Borders™ volunteer program, which, in the meantime, got a major boost in the form of a large scaling-up grant from J.P. Morgan's Social Finance Group.

We told Professor Odell, as we had done with Goldberg, that she had complete editorial control of the final product to ensure independence and credibility. Of course, we encouraged her to reach out to as many of the industry's leading researchers and practitioners to

get feedback on her early drafts, and my colleagues and I participated in this review process. I am pleased that so many of the leading thinkers of our field took the time to read and comment on this paper in draft form.

The debate about microfinance's effectiveness in reducing poverty and addressing other societal problems, and related discussions about how to make microfinance even more potent, has often degraded into polemics and unsubstantiated claims, and sometimes become very technical in nature. The media and other stakeholders, such as regulators and social investors, have been increasingly confused by conflicting claims about what we know and don't know. This paper should help to inform these important discussions, which go to the heart of how we think about making microfinance the most effective tool that it can be and how can we set expectations appropriately about its potential and current limitations.

The executive summary of the original Goldberg paper is appended to this paper. Both this paper and the entire Goldberg paper are available for download from Grameen Foundation's website, [www.grameenfoundation.org](http://www.grameenfoundation.org).

My colleagues Camilla Nestor, Nigel Biggar, Liselle Yorke, Shannon Maynard, and Angie Sanders were essential partners in bringing this paper to fruition. I am grateful to Dean Arvid Johnson of Dominican University's Brennan School of Business and Kathleen Houlihan, the founding director of the Global Center for Peace through Commerce, who organized the conference that got the ball rolling on this paper. Dean Johnson was also instrumental in helping to free up Professor Odell to focus on this paper for several months. Most of all, I would like to thank the author for treating the subject rigorously, writing elegantly, explaining clearly, and judging fairly. She exceeded my high expectations and in doing so has made a major contribution to our rapidly changing field.



Alex Counts, President  
Grameen Foundation  
May 3, 2010

# EXECUTIVE SUMMARY

This paper is a survey of several significant microfinance impact assessment evaluations released or published between 2005 and 2010. It is an update of a comprehensive impact assessment literature survey released in 2005, which was sponsored by Grameen Foundation and authored by Nathanael Goldberg. In the years since Goldberg's paper was released, there have been a number of important developments in microfinance impact assessment, making this current survey a much-needed update.

The release of a handful of prominent microfinance impact assessment evaluations in 2009 precipitated a good deal of media coverage. Stories published in the *Economist* magazine, the *Boston Globe*, and the *Financial Times* presented the new research with a negative slant, collectively suggesting that microfinance isn't as powerful an anti-poverty tool as suggested by many of its proponents. These media stories should be read with a healthy dose of skepticism, as even the authors of the research papers cited in the articles have made public statements disputing the oversimplifications and negative interpretations appearing in the press.<sup>1</sup> One aim of this paper is to summarize the results of these new studies, disentangling the media interpretation from the actual findings reported.

One of the key developments in microfinance impact assessment since 2005 is methodological; in 2009, the first studies employing the *randomized controlled trial* (RCT) methodology were released. The benefit of the RCT is that in cases where it can be effectively used, it eliminates the problem of selection bias, where clients of microfinance institutions (MFIs) may be systematically different from non-clients. The possibility of inherent difference between clients and non-clients is a long-standing and well-known challenge in microfinance impact assessment (in fact, the selection bias problem plagues much of social science research), and the RCT methodology provides a solution to this challenge.

On the other hand, the RCT methodology has limitations. Programs to be evaluated with an RCT must be identified, and the evaluation structure must be put into place in advance of program implementation. Thus the RCT methodology is not useful for evaluating programs already on the ground. Also, because the RCT

works by withholding *treatment* (in this case microfinance services) from a specified group, time horizons for study are necessarily short. Finally, in many environments (such as Bangladesh, for instance) where microfinance has been in place for years, it is virtually impossible to implement the RCT methodology because nearly everyone has access to microfinance. The debate over the use of the RCT as an evaluation tool in development economics is ongoing. See Section 4 of this report for references and a more complete discussion.

## Randomized (Experimental) Studies

The popular press coverage primarily addressed three randomized studies. Two of these studies ("The miracle of microfinance? Evidence from a randomized evaluation," [2009] by Abhijit Banerjee et al. and "Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya," [2009] by Pascaline Dupas and Jonathan Robinson), when examined closely, report evidence of a number of positive impacts of microfinance on the lives of poor clients. Banerjee et al., find that the introduction of microcredit in Hyderabad, India, supports household borrowing and investment and supports the creation and expansion of small businesses. Dupas and Robinson study the effect of the introduction of savings accounts on business investment in Kenya, and find that formal savings accounts increase business investment and expenditure for women. The third study ("Expanding Microenterprise Credit Access: Using Randomized Supply Decisions to Estimate the Impacts in Manila" [2010b] by Dean Karlan and Jonathan Zinman) finds that the expansion of microlending to a new population in Manila, Philippines, leads to an increase in business profits for male borrowers only but has no overall effects on income or poverty. Banerjee et al. and Karlan and Zinman both test for, but do not find, evidence of social impacts of microcredit (such as women's empowerment, increases in children's school enrollment, or improvements in overall health and well-being). Collectively, these three studies suggest that over relatively short time periods, microfinance had positive impacts on business investment and outcomes but did not have impacts (positive or negative) on broader measures of poverty and social well-being.

<sup>1</sup> <http://kristof.blogs.nytimes.com/2009/12/28/the-role-of-microfinance/>



Clients of AI Sol (Mexico)

In addition to the impact assessment studies above, two studies by Suresh de Mel, David McKenzie, and Christopher Woodruff (2008 and 2009) provide some evidence about returns to capital in small businesses (microenterprises) such as the businesses most frequently owned by microcredit borrowers. In the 2008 study, the authors find that small grants to microenterprise owners were almost completely invested in business expansion, and that the grants increased average profits of microenterprises by about 60 percent per year. In the 2009 study, the authors investigate the difference in returns to capital for male versus female borrowers. They find increases in business profits only for male business owners.

### **Non-Randomized (Quasi-Experimental) Studies**

Though the release of these randomized studies was one of the major developments in microfinance

impact assessment since 2005, there have been other important (non-randomized) studies as well. As of 2005, a particularly well-respected study of the impact of microfinance was a study of microcredit in Bangladesh written by Shahidur Khandker of the World Bank. This study, which expanded upon earlier impact assessment in Bangladesh, showed a strong positive impact on income as a result of borrowing from microlending institutions. A 2009 study by David Roodman and Jonathan Morduch revisits Khandker's study, as well as two earlier related studies (Morduch, [1998]; Pitt and Khandker, [1998]), and raises questions about the validity of the results of all three papers. Roodman and Morduch argue that methodological concerns about the earlier work should lead readers to be skeptical of the positive results of microfinance these studies report.

Work by Brett Coleman (2006) of the Asian Development Bank found that for two microlending programs in northeast Thailand, the services were more

likely to reach relatively wealthy borrowers than the target group of the “poorest of the poor.”

In a related paper, Toshio Kondo (2007) of the Asian Development Bank uses Coleman’s methodology to study a microfinance operation aimed at the poorest 30 percent of the rural population in the Philippines. Similar to Coleman, Kondo finds that borrowers in the program are actually relatively wealthy. Kondo finds that participation in the lending program leads to increases in per capita incomes, expenditures, food expenditures, and formal saving. However, these positive effects appear to accrue only to relatively wealthy borrowers; the poorest borrowers actually see negative effects. These studies raise important questions about whether microfinance products are reaching their intended recipients.

World Bank researchers Miriam Bruhn and Inessa Love (2009) found that the opening of branches of Banco Azteca in neighborhoods across Mexico led to an increase in informal business ownership, employment, and income for residents of municipalities where a branch was opened. Research in Thailand by Joseph Kaboski and Robert Townsend (2005) finds that MFIs, especially those targeted at women, promoted asset growth, consumption smoothing, and occupational mobility, and reduced reliance on moneylenders. A second study found that Thailand’s “Million Baht Village Fund,” a government microlending program, relieved credit constraints in participating villages and led to increases in consumption and income (Kaboski & Townsend, 2009). A handful of additional studies provide context and additional (though sometimes qualified) evidence that microfinance improves the lives of borrowers and savers who use these services.

Ultimately, the question, *does microfinance work?* is impossible to answer, because *microfinance* is not a single tool but a collection of tools. MFIs around the world serve different types of clients. These institutions offer various services including loans, savings accounts, insurance products, and various combinations of these services. MFIs also operate in diverse environments around the globe: some are urban, some are rural, some are in South Asia, some are in Africa, some are in Eastern Europe, and so on. Given this extreme heterogeneity, one of the greatest errors researchers and practitioners can make is to over-interpret the empirical results that are available to us, since each study necessarily applies only to a very specific context. Rather, keeping both the general and the specific questions in mind, each impact study must be interpreted as a small piece of a growing body of knowledge about how microfinance, in all its forms, functions in the world and how it affects the lives of the poor.

The research into the impact of microfinance that has emerged over the last five years offers some encouraging results. There is evidence from a number of studies (using a variety of methodologies across different settings) suggesting that microfinance is good for microbusinesses. This result is observed across different microfinance services, including microcredit and microsavings instruments. Based on the studies in this survey, the overall effect on the incomes and poverty rates of microfinance clients is less clear, as are the effects of microfinance on measures of social well-being, such as education, health, and women’s empowerment. Hopefully, the next wave of research will provide further insights into these critical questions.



## SECTION 1

### Introduction

In 2005, Grameen Foundation released a study, authored by Nathanael Goldberg, entitled “Measuring the Impact of Microfinance: Taking Stock of What We Know.” Goldberg (now at Innovations for Poverty Action) surveyed dozens of impact assessments of microfinance and prepared a literature review of many of the most significant. See Appendix for the executive summary of Goldberg’s paper. Of course, since the 2005 paper, microfinance impact assessment has moved forward. Today, in early 2010, it seems important to again survey the literature, looking this time at the new studies released since 2005 and addressing the continuing debate about some of the earlier studies.

The past five years have been an exciting time in microfinance and microfinance impact assessment. Professor Muhammad Yunus and Grameen Bank were awarded the Nobel Peace Prize in 2006. As of December 2007, the Microcredit Summit Campaign counted 3,552 microfinance institutions (MFIs) worldwide, serving nearly 155 million borrowers (Daley-Harris, 2009). In the area of impact assessment, new research methodologies have been used, and the questions that are being asked have been refined. The year 2009 was a particularly lively year in impact assessment, with new studies emerging that initiated a vigorous debate in the popular press about the merits and potential of microfinance.

It is important to study the impact of microfinance for several reasons. First, many MFIs receive subsidies from governments, development agencies, and foundations. To the extent that microfinance receives scarce subsidies or preferential regulatory treatment based on its anticipated impact on poverty reduction, it is necessary to evaluate whether the development dollars spent in this area are having the desired effects (reducing poverty, improving the lives of the poor) and whether regulatory preferences make sense. A related question is whether these same

dollars would have more powerful effects if they were spent on some other program, such as conditional cash transfers, teacher training, vaccinations, or any of the many, many other areas where development aid is spent. (Though in the absence of rigorous and comparable impact assessments across a variety of development interventions, the answer to this question remains out of reach.) On the other hand, in areas where microlending *is* profitable, concerns arise about whether the lending agencies remain committed to the goal of fighting poverty or whether profit is the primary motive. Finally, while there are many inspiring stories of entrepreneurs whose lives have been changed for the better<sup>2</sup> (Counts, 2008) by access to credit, there are also stories of borrowers who have been adversely affected by credit, experiencing credit dependency and cyclical debt (Goldin Institute, 2007).

The main goal of the impact assessment literature is to estimate the average effects of microfinance programs overall, notwithstanding the sometimes conflicting anecdotal evidence and intuition which is so widely available. Further, a well-designed impact assessment study can provide insight into the causal factors behind the success and failure of various microfinance interventions. The aim of this literature survey is to step away from the popular debate, to look critically at the new research, and to seek (to whatever extent possible) consensus on the question of what is rigorously and empirically known about the effect of microfinance on the lives of the poor people it is intended to reach.

#### What the Popular Press is Saying

In 2009, impact assessment of microfinance became a mainstream media topic, with a collection of articles that could broadly be interpreted as *bad press*. These articles were based on a small wave of research

<sup>2</sup> www.kiva.org



Clients of Maata-N Tudu (Ghana)

released in early 2009, which has widely been received as the some of the most important impact assessment work to date based on the studies' methodological approaches.

A short article entitled “Microcredit may not work wonders, but it does help the entrepreneurial poor,” was published in the July 16, 2009 issue of the *Economist* magazine. This article argues that because just over half of the \$11.7 billion that was committed to the microfinance industry in 2008 came at below-market rates from aid agencies, multilateral banks, and other donors, it is important to know whether microcredit<sup>3</sup> has its “advertised effects.” Specifically,

since there are other things that aid money could be spent on, donors should evaluate the effectiveness of microcredit as an anti-poverty tool. The article then calls attention to the recently released (but as yet unpublished) Banerjee et al. (2009) and Karlan and Zinman (2010b) studies, concluding that “broadly speaking, neither study found that microcredit reduced poverty” (“Microcredit may not work,” 2009). While technically correct, this is a somewhat misleading conclusion, however, once the results of the studies are examined in more detail. See also Section 5.

The two studies cited in the *Economist* article are built on a similar methodology, the *randomized controlled trial* or *RCT*. RCTs work similarly to medical trials, where a control group is established

<sup>3</sup> The press articles referenced here refer primarily to *microlending*, which is only one of the financial services collected under the general heading of *microfinance*. See Section 3 for a more complete discussion.

to isolate the effect of some *treatment* – in this case access to credit through MFIs. For a number of technical reasons, the RCT is considered to be a very effective approach to impact assessment. See also Section 4. These two studies are the first RCTs to look at the broad question of the impact of microcredit.

On September 20, 2009, the *Boston Globe* published a particularly negative article entitled “Billions of dollars and a Nobel Prize later, it looks like ‘microlending’ doesn’t actually do much to fight poverty.” Again drawing on Banerjee et al. and Karlan and Zinman (2010b), the *Globe* article suggests that “by most measures, microcredit does not offer a way out of poverty” (Bennett, 2009). Though the article goes on to discuss some of the subtleties of the papers’ results, the casual reader comes away from this article with the general impression that rhetoric about the transformational potential of microfinance may have been “simple hype.” In a similar spirit, a *Financial Times* article from December 5, 2009 was titled “Perhaps microfinance isn’t such a big deal after all.”<sup>4</sup> Again, Banerjee et al. and Karlan and Zinman (2010b) were used as the basis for the argument; the article also mentioned a 2009 microsavings study by Dupas and Robinson.

A response to the *Globe* article appeared in *Foreign Policy* on October 26, 2009. This article reminds us that “microfinance ... is young, evolving, and ripe with innovation” (Banerjee, 2009). Importantly, we must keep in mind that *microcredit* – that is, loans to the poor – is only one aspect of microfinance. Other products, most notably savings accounts for the poor, also can be classified as microfinance, and there is evidence that these products are quite effective, especially when delivered as part of a complete set of financial products to clients.

<sup>4</sup> David Roodman outlines on his blog some of the follow-up on the *Financial Times* article. Particularly notable is a tweet from Tim Harford (author of the *Financial Times* piece): “Note to all microfinance enthusiasts: I DO NOT WRITE MY OWN HEADLINES.” [http://blogs.cgdev.org/open\\_book/2009/12/making-headlines.php](http://blogs.cgdev.org/open_book/2009/12/making-headlines.php)

Perhaps most important to this discussion is the appearance, on December 28, 2009, of a post on Nicholas Kristof’s New York Times blog. This post, written by Abhijit Vinayak Banerjee, Esther Duflo, and Dean Karlan (co-authors of two randomized studies cited in the *Economist*, the *Boston Globe*, and the *Financial Times*), reminds readers of the difference between popular journalism and academic research. Journalism can be sensationalized; research, while perhaps more dull to read, takes more careful account of subtleties and ambiguities that arise. The authors conclude as follows:

...as we see it, microcredit seems to have delivered exactly what a successful new financial product is supposed deliver—allowing people to make large purchases that they would not have been able to otherwise. The fact that some people expected much more from it (and perhaps they are right, may be it will just take longer), is perhaps inevitable given how eager the world is to find that one magic bullet that would finally “solve” poverty. But to actually blame microcredit for not promoting the immunization of children is no different from blaming immunization campaigns for not generating new businesses.<sup>5</sup>

So, what can be said, in summary, of this popular press debate? David Roodman, a research fellow at the Center for Global Development, writes “public conversations about complex topics are inevitably cacophonous and inefficient.”<sup>6</sup> Let this cacophonous public conversation be a starting point to examine the research that has emerged over the last five years.

<sup>5</sup> <http://kristof.blogs.nytimes.com/2009/12/28/the-role-of-microfinance/>

<sup>6</sup> [http://blogs.cgdev.org/open\\_book/2009/12/randomistas-attempt-message-control.php](http://blogs.cgdev.org/open_book/2009/12/randomistas-attempt-message-control.php)



Client of CASHPOR (India)

## SECTION 2

### Where to Start: Summary of the 2005 Paper

The first edition of this paper, published in 2005, surveyed several of the most prominent and carefully conducted impact assessment studies released or published up to that year. Beginning with a 1988 study of the effect of Grameen Bank loans in Bangladesh by Mahabub Hossain and navigating through the seventeen years of work that followed, Goldberg presented a balanced overview of the existing research and ended with a few optimistic, if cautious, conclusions:

On the whole, the evidence points in two directions: 1) there is much to be enthusiastic about; and 2) there is much to discover about the many ways in which microfinance works and does not work for different types of clients. (Goldberg, 2005, p. 46)

Goldberg expressed overall optimism given the many, many positive findings in the literature, but also expressed concerns about the methodological limitations of the studies available at that time. He looked forward to the results of the first randomized studies of microfinance's impact, suggesting that these might provide some incontrovertible answers to the questions of microfinance's effectiveness. Today, some of these randomized studies are available, and their results have been widely read and broadly interpreted, sometimes in conflicting ways. The release of these studies, and the debate that has accompanied them, is a key starting point for this second edition of the literature review.

## SECTION 3

### What Are the Questions?

The goal of microfinance as an economic development tool<sup>7</sup> is to improve the lives of the poor. An interpretation of this goal is that if microfinance gets poor people *out of poverty*, then it must be *working* as it was intended. This would be mainly an income measure—if incomes rise as a result of access to microfinance, then microfinance is effective as an anti-poverty tool. But over the years, some microfinance enthusiasts have made claims beyond the effect on the income of the poor. Microfinance has been heralded not only as a strategy for increasing income and consumption among the poor, but also as a tool for improving measures of health, children’s education, and women’s empowerment. See also, as one example, the CGAP website answer to the question “How Do Financial Services Help the Poor?”<sup>8</sup> Various studies presented in Goldberg’s 2005 paper showed evidence of positive effects of microfinance on several of these “noneconomic” measures, including women’s empowerment, contraceptive use, and children’s nutrition. Microfinance scholars, critics, lenders, donors, and practitioners alike seek to know to what extent microfinance actually achieves these goals. But it turns out that answering this question is not so simple.

First, the term *microfinance* refers to a range of financial services for low-income people, including credit, savings, insurance, and money transfers. Most of the studies included here study the effect of microcredit—small loans to poor borrowers, but there are also a few studies on the impact of microsavings. Though microcredit is the best known and most widely practiced of the microfinance services, interest in microsavings and other services is growing.

<sup>7</sup> It is important to note, however, that as microfinance has matured, it is in some cases implemented not as an economic development tool, but as a profit-making enterprise.

<sup>8</sup> <http://www.cgap.org/p/site/c/template.rc/1.26.1305/>

Insurance and money transfer services are also important but newer, so that not much assessment has been completed as yet on their effectiveness.

Second, there is new research available that suggests that microcredit plays an important role in helping poor people mitigate the unreliability of their income. *Portfolios of the Poor: How the World’s Poor Live on \$2 a Day*, a 2009 book by Daryl Collins, Jonathan Morduch, Stuart Rutherford, and Orlanda Ruthven provides us with new insight into the complicated financial lives of the very poor. *Portfolios* presents the results of year-long financial diaries kept by poor households in India, Bangladesh, and South Africa. The diaries show the many ways in which poor households rely on financial instruments not only for investment and entrepreneurship purposes, but also for consumption smoothing and easing the unpredictability of daily life. *Portfolios* is not impact assessment research, but rather a rigorous qualitative study that contributes heavily to the understanding of microfinance’s role in borrowers’ lives. As one of a variety of financial instruments regularly used by the poor households surveyed, microfinance emerges as a tool providing reliable and predictable access to loans and savings. The evidence presented in *Portfolios* demonstrates the importance of microfinance not only as a means of reducing poverty, but also as a means of improving the quality of daily life within the condition of poverty.

Third, while many impact assessments have been conducted about the effects of microlending on individuals, there is relatively little literature addressing the macroeconomic effects of microfinance. Yet, there are theoretical arguments that if microfinance is successful at any one of its aims (raising incomes, promoting entrepreneurship, increasing children’s education, encouraging savings), then, over time, positive effects on macroeconomic measures (such as the rate of economic growth,



Client of Yehu (Kenya)

per capita GDP, and economy-wide measures of poverty and inequality) should be observed. Though methodological issues make these questions difficult to address, their answers are essential to understanding the broader impacts of microfinance.

Finally, an important question is whether, as microlending expands, credit is reaching its intended recipients (“the poorest of the poor” for some MFIs), or whether the loans tend to go to wealthier borrowers. This question is very much entangled with the question of what microlending is: is it an economic development tool, or is it a profit-making enterprise, or can it be both?

Ultimately, the question *does microfinance work?* is impossible to answer, because *microfinance* is not a single tool but a collection of tools. MFIs around the world serve different types of clients. These

institutions offer various services including loans, savings accounts, insurance products, and various combinations of these services. MFIs also operate in diverse environments around the globe: some are urban, some are rural, some are in South Asia, some are in Africa, some are in Eastern Europe, and so on. Given this extreme heterogeneity, one of the greatest errors researchers and practitioners can make is to over-interpret the empirical results that are available to us, since each study necessarily applies only to a very specific context. Rather, keeping both the general and the specific questions in mind, each impact study must be interpreted as a small piece of a growing body of knowledge about how microfinance, in all its forms, functions in the world and how it affects the lives of the poor.

## SECTION 4

### Evaluation Methods (Pros and Cons)

Evaluation of microfinance programs attempts to determine how some outcome measurement (income, consumption, children's participation in education, etc.) is affected by access to microfinance. Answering a question of this nature is surprisingly difficult, however, due to an ultimately unsolvable problem which evaluators refer to as the absence of the *counterfactual*. It is a relatively simple matter to look at incomes, for example, before and after participation in a lending program and to determine whether those incomes increased. But the counterfactual would indicate what would have happened to those incomes *in the absence of* the lending program. Might those families have gotten richer anyway? Is the observed increase in incomes a *result* of the lending program, or perhaps a result of some other, possibly unobserved, factor, such as entrepreneurial spirit, work ethic, or inherent talent for business? For an impact assessment to be considered statistically rigorous, some approach must be taken to approximate the counterfactual. Generally, this requires designating a *treatment group* which has access to a lending program, for example, and a *comparison group* which is identical to the treatment group in every way, save for access to the lending program and some unavoidable random variation.

But how should this comparison group be identified? Simply including households that did not participate in the lending program will not work, because these households are likely to be systematically different from the households that chose to borrow. Comparing households in a village *with* an MFI with similar households in a village *without* an MFI seems a reasonable strategy, except that there is likely to be a *reason* that the MFI chose to locate in one village over the other. If the reason is anything other than random choice, the comparison group will not be truly comparable to the treatment

group. The fact that borrowers and non-borrowers may be systematically different from each other is called *selection bias*, and it presents a formidable challenge to program evaluators. If, for whatever reason, selection bias persists and the treatment and comparison groups are not comparable, then any estimates of the effect of microfinance will be biased (that is, incorrect).

Researchers have worked for years on methods of eliminating selection bias with varying success. The most robust way to generate reliably comparable treatment and comparison groups is to assign households *randomly* to one or the other group, similar to the way patients are assigned to groups in clinical medical research. Since the first version of this literature review in 2005, several studies have emerged that use random assignment, and some innovative non-random approaches also have been taken.

The impact assessment literature can be broken into studies with *experimental* design, *quasi-experimental* design and *non-experimental* design. Experimental design assigns households randomly to treatment and control groups *in advance* of applying the *treatment* (in this case, making microfinance instruments available) to the treatment group. Quasi-experimental studies attempt to eliminate selection bias through statistical strategies, which can be very complicated. Non-experimental assessments include qualitative studies and studies which do not attempt to identify treatment and comparison groups or to address the selection bias problem. These studies, while problematic, are also relatively quick and inexpensive, and can provide useful snapshots of the effectiveness of microfinance on the ground. Also, while methodologically rigorous qualitative studies, such as the financial diaries reported in *Portfolios of the Poor*, do not provide impact assessment in the conventional sense, they do provide invaluable

insights that can complement and inform quantitative research.

The problem with quasi-experimental design is that it is impossible to be certain that selection bias has been eliminated; despite researchers' best efforts, systematic differences may remain between the treatment and comparison groups, in which case the results of the study will be inaccurate. As readers will see in the following discussion, even the most well-known and widely respected quasi-experimental studies can be challenged at this level. On the other hand, quasi-experimental design has an advantage over experimental design. It can be conducted after a program is already in place. If a defensible method can be identified to generate a comparison group, then a researcher can evaluate the effectiveness of a program that has been on the ground for years.

Several randomized experimental studies have received well-deserved attention in recent months because the RCT methodology eliminates the problem of selection bias. Therefore, the impacts that these studies identify are reliable estimates of the average impacts of programs being evaluated, and the research does not become bogged down in complex statistics or squabbles over methodology. In cases where randomized evaluation is feasible, it is a highly effective strategy which produces believable answers to the questions being asked.

On the other hand, there are at least three very significant challenges inherent to experimental design. First, assignment to treatment and control groups must be made *in advance* of the program's initiation. In the case of microfinance, this means that researchers must identify markets where microfinance is about to be introduced, and then intervene in the introduction process in order to randomize participation. While randomizing which individuals are granted access to microfinance may not be possible, it is often possible to randomize *where* a new institution locates (selecting, for example, some neighborhoods but not others). Setting aside the potential ethical concerns about this approach (which

can often be addressed with thoughtful study design), not every situation lends itself to experimental design, and implementation is relatively expensive compared to other evaluation strategies.

Second, when an appropriate environment for random introduction of microfinance can be identified, there is often a limited time horizon over which the treatment and control groups can be maintained. While it might be feasible to withhold access to microfinance from the control group for a short time, it will be very difficult to do this over a period of years. Thus, it is difficult to use a randomized study to assess long-run impacts of microfinance.

Third, because randomized studies are, by necessity, implemented in a particular controlled setting, it may be relatively difficult to generalize the results obtained to other situations. Though this limitation applies to all impact evaluations, regardless of methodology, Armendáriz and Morduch (2010) note that because non-randomized studies often make use of data from varied contexts and large geographical areas, their conclusions tend to be more widely applicable than the results of randomized studies (p. 307). Another important point is that randomization is possible only in places where it is possible to build a control group; in a country like Bangladesh, where microfinance is pervasive, it will be virtually impossible to identify a control group unaffected by access to microcredit.

Quasi-experimental and experimental studies also share a common limitation, which is that these types of studies often report only *average* impacts. If half of the treatment group realizes an increase in income and half realizes a decrease in income, the average effect of the program will likely be close to zero. An impact assessment will find that this close-to-zero effect suggests that microfinance had little effect. But is this a realistic description of what actually happened? Indeed, with respect to microcredit, with 155 million borrowers worldwide, it is inevitable that some borrowers experience negative outcomes; the impact assessment literature reveals little about these borrowers, though the development community may





Clients of Grameen Koota (India) at a group meeting

be rightly concerned about negative results, even if they are not the norm.

See also Chapter 9 of Armendáriz and Morduch for a more comprehensive discussion of the challenges facing both quasi-experimental and experimental designs with respect to microfinance impact assessment. Armendáriz and Morduch also provide a more detailed overview of the specific methods employed in the various types of studies. For a broader discussion of the ongoing debate over the use of

randomization in development economics, see Rodrik (2009) and Deaton (2010).

Given the advantages and disadvantages of the various study methodologies, it is clear that at the very least, the use of the term *gold standard* (pervasive in the literature) to describe the randomized study, or any methodological approach, is overly enthusiastic. Studies with various research designs are possible, though all must be designed and interpreted carefully. Ultimately, given the limitations of any

single study, it is the body of knowledge gained from reading and comparing many studies (with varying methodologies) of various markets, that will provide us with some insight into how, and how well, the microfinance industry is serving its poor clients.

### Three Technical Points

Several of the studies described in this paper report what is known as the *intention to treat (ITT)* effect of a program. The ITT is the effect of *being offered* a treatment, regardless of whether the treatment is actually accepted. For example, suppose that households are randomly selected to be offered loans or not. The treatment group will be the group of households offered loans, the control group will be the group not offered loans. The study will then measure the difference in outcomes between the treatment and control groups after some period of time. Notice, however, that not every household in the treatment group will actually choose to take a loan; for various reasons, despite being offered credit, some households may decline. Therefore, the difference in outcomes between the treatment and control groups measures not the effect of *actually taking* a loan, but the effect of *being offered* a loan. In many cases, the more relevant question might be the effect of *actually taking* the loan. This is called the *effect of treatment on the treated (ToT)*. Estimating this effect requires additional assumptions. From a policy perspective, an estimate of the intention to treat effect may be sufficient if the policy makers are interested in knowing the overall effect program availability has on a community. If, on the other hand, the desired information is how a loan affects actual borrowers, then it is the estimated effect of treatment on the treated that is required.

Several studies also employ what is known as a *difference in difference* methodology. Suppose a study investigates the effect of access to credit on income after a year, and treatment and comparison groups have been identified. The difference in difference methodology works as follows:

	Treatment group	Comparison group
Income, Year 1	A	C
Income, Year 2	B	D

Now, B-A is the difference in income for the treatment group. D-C is the difference in income for the control group. These differences are not expected to be zero in either case; it is likely that incomes would have changed over the year (for better or worse) even in the absence of the loan program. The question of interest is how the change in income has been affected by the loan program. To find this, calculate the difference in differences:

$$\text{Effect} = (B - A) - (D - C)$$

If the program did not affect income, then B-A and D-C will be equal, suggesting that the effect is zero; however, any difference in B-A and D-C can be interpreted as the effect of the program.

Finally, empirical results are generally reported along with an indication of whether the findings are *statistically significant*. Because empirical research relies on statistical inference based on small samples of larger populations, there is always the possibility that measured effects may be due to chance rather than actual, program-related differences. A result is said to be statistically significant if its probability of occurring due to chance is sufficiently low, usually 10, 5, or 1 percent.

Work by Stephen Ziliak and Deirdre McCloskey (2008) argues that this test of probability can be overused, and that it can lead to oversight and misinterpretation of results. Ziliak and McCloskey further argue that, in many cases, the research community would be better served by analysis of the magnitude and importance of the results, rather than the results' statistical significance. Keeping this caution in mind, results that are substantial, but not statistically significant, should be taken as evidence of the need for additional research.

## SECTION 5

### Experimental (Randomized) Studies

This section presents the results of the existing experimental (or randomized) studies of the impact of microfinance. Banerjee, et al. (2009) has received well-deserved attention from the microfinance community and policy makers as the first experimental study of *traditional* microlending. This study is set in Hyderabad, India. Spandana, the lender under study, made relatively small loans to relatively poor borrowers. The findings of the Hyderabad study (though widely interpreted in the press as suggesting that microfinance is “not so great”) are actually quite positive overall. The next two studies by Karlan and Zinman (2010a and 2010b) are set in the Philippines and South Africa, respectively. These studies also provide some useful insights, although in both cases there are important qualifications. Borrowers in the Philippines study were relatively wealthy and well-educated compared to traditional microcredit borrowers. Rates of late payment and loan default were high relative to microfinance industry standards. The South Africa study looks at cash loans for consumption (rather than investment) purposes. Finally, the fourth study by Dupas and Robinson (2009) is an assessment of the effects of *microsavings*, rather than microlending, in Kenya. Dupas and Robinson find that access to savings accounts for microentrepreneurs had several positive effects on the business endeavors of the savers.

Also included in this section are two studies by de Mel, McKenzie, and Woodruff (2008, 2009) that investigate returns to capital in microenterprises. While these studies are not impact assessments of microfinance projects (as study participants received cash or in-kind grants, rather than financial services), they do address two important questions which are relevant to microfinance. First, these authors test the assumption that microenterprises hold the potential for income growth which will be spurred by capital investment. Second, they address the assumption that

returns to capital will be higher for female, relative to male, microbusiness owners.

#### Traditional Microcredit in India

In “The miracle of microfinance? Evidence from a randomized evaluation,” Abhijit Banerjee, Esther Duflo, Rachel Glennerster, and Cynthia Kinnan (all researchers or students at MIT affiliated with The Abdul Latif Jameel Poverty Action Lab) report on the first randomized evaluation of the group-lending microcredit model. The study is performed in Hyderabad, India, where fifty-two of 104 neighborhoods were selected for opening of a branch of Spandana (one of the fastest growing MFIs in the area), while the remaining fifty-two neighborhoods were not selected. Data was then collected by sample survey fifteen to eighteen months after the branch opening in each area. Despite the fact that microcredit was spreading through all neighborhoods of Hyderabad during the study period, the authors find that the probability of receiving an MFI loan was 27 percent for borrowers in areas with a Spandana branch, compared to 18.7 percent in areas without a branch. These findings suggest that the treatment of establishing a Spandana branch had an impact on borrowing in the treated neighborhoods (Banerjee et al., 2009).

The authors evaluate the effect of treatment on a variety of measures, some directly related to poverty (consumption, business income, etc.) and some broader human development measures (education, health, women’s empowerment). Spandana offers loans to members of self-selected groups where members meet the following criteria: (a) female, (b) aged eighteen to fifty-nine, (c) residing in the same area for at least one year, (d) has valid identification, and (e) at least 80 percent of women in a group must own their home. Spandana does not insist that the loans be used for business investment, nor is

loan eligibility determined based on the expected productivity of the investment.

All findings of the study are ITT effects based on surveys administered to samples of neighborhood households, generally fifteen to eighteen months after the arrival of the Spandana branch. Keep in mind that because the reported effects are ITT, the effects are likely stronger for households that actually borrowed and weaker for households that did not borrow.

The estimated effects of access to microfinance on business profits, monthly business revenues, and spending on business inputs are all positive, though not statistically significant. The estimated business profits in treated neighborhoods are 1,025 rupees compared to 550 rupees in the control neighborhoods. Despite not finding statistical significance, it is notable that estimated profits are nearly double in treatment versus control areas. The estimated monthly input spending is 18 percent higher in treatment areas, and estimated monthly business revenues are 20 percent higher.<sup>9</sup>

With respect to household expenditures, the authors find a small (2 percent) but statistically insignificant increase in total per capita expenditures and a small (1 percent) but statistically insignificant increase in spending on nondurables. Statistically significant increases are found in spending on durables (18.9 percent higher in treatment areas) and spending on durables used in a business (127 percent higher in treatment areas).<sup>10</sup> Spending on durables used in a business can plausibly be interpreted as business investment for this population, suggesting that access to microfinance dramatically increased business investment. Finally, the authors find a statistically significant 9 rupee decrease (a 10.7 percent drop) in monthly spending on *temptation goods* (alcohol, tobacco, gambling, food and tea outside the home), suggesting that the increased business investment was supported in part by decreased temptation spending. There is also evidence that households with existing businesses respond differently than households

without existing businesses, with the former investing in the business and the latter increasing consumption spending.

With respect to the human development measures, there are no statistically significant effects on women's empowerment, child health, or participation in or spending on children's education. The point estimates are also small. The results do not suggest that microfinance had an effect in these areas over the study period. One interesting note is that participation in children's education was quite high in the areas covered by this study. The author's baseline survey, conducted before the Spandana branches were introduced, found that 98 percent of seven- to eleven-year-olds, and 84 percent of twelve- to fifteen-year-olds, were in school.

The authors conclude that microcredit does have important effects on business outcomes and the composition of household expenditure. "Microcredit may not be the 'miracle' that is sometimes claimed on its behalf, but it does allow households to borrow, invest, and create and expand businesses" (Banerjee et al., 2009, p. 21). The authors also acknowledge the short time frame of the study, indicating that over a longer period, the results might be different. One reasonable story, not inconsistent with the results of this study, would be that business investment comes first (within fifteen to eighteen months, as suggested by this study), followed by an increase in overall expenditures (after those investments begin to pay off), with social changes occurring last. Overall, this study is consistent with the story that microcredit has many positive effects that appear in stages after its introduction (though also consistent with the possibility that those effects are not as strong as some proponents suggest).

### Individual Lending in the Philippines

Dean Karlan and Jonathan Zinman (economists at Yale University and Dartmouth, respectively; both associated with Innovations for Poverty Action and The Abdul Latif Jameel Poverty Action Lab at MIT), co-authored the study "Expanding Microenterprise Credit Access: Using Randomized Supply Decisions to Estimate the Impacts in Manila" in 2010. The authors conduct a randomized evaluation of the effects of lending by First Macro Bank, a *second generation* microcredit organization in Manila, Philippines. The second generation designation indicates that the

<sup>9</sup> Recall Ziliak and McCloskey (2008) here; the differences in the estimated profit, revenue, and input spending are all "statistically" zero; nonetheless, the large positive effects found in these areas are interesting, at least calling for further investigation.

<sup>10</sup> The authors note that the absolute magnitude of these changes is small; the 18.9 percent increase in spending on durables is an increase from 116 to 138 rupees per month, which at PPP exchange rates is about \$2.50 (Banerjee et al., 2009, p. 13). The 127 percent increase in spending on business durables is an increase from about 5 to about 12 rupees per month, which is a PPP adjusted increase of less than \$1.

lender resembles in many ways a more traditional lender; First Macro Bank is a for-profit lender that makes individual loans to microentrepreneurs. First Macro Bank receives implicit subsidies from a U.S. Agency for International Development (USAID)-funded program. The loan size in this study ranged from 5,000 to 25,000 pesos, (\$111 to \$440 USD using the exchange rate used in the paper), which the authors note is substantial relative to borrower income. The loans in the sample also had substantial delinquency and default rates, with one-third paying late at some point, and 7.4 percent written off (p. 8).

Karlan and Zinman's methodology is to randomly select borrowers from a pool of *marginally* creditworthy applicants, whose applications for loans were neither clearly approved nor clearly denied based on the lender's credit scoring system. The treatment group in this study is the group of marginal applicants who were offered credit, and the control group is the group of marginal applicants who were not offered credit.<sup>11</sup> Karlan and Zinman study the effects of being offered credit on measures of borrowing, business outcomes and inputs, human capital, assets, investments, and risk sharing. The authors describe their results as "varied, diffuse, and surprising in many respects" (p. 3).

The authors find a statistically significant increase in borrowing from formal sector lenders such as First Macro Bank or a similar lender. With respect to business outcomes, the authors find a statistically significant increase in profits for household businesses when borrowers were male but not when borrowers were female. They also find that profits increase more dramatically in households with above median income. There is evidence that businesses reduce the number of employees, especially paid employees. Two significant effects on human capital measures are found: (1) male borrowers are less likely to be employed outside the family business, and (2) male borrowers are more likely to send their children to school. Little effect is found on business investment, or other types of household investment. Importantly, the authors find no significant effect on household incomes, poverty, or remittances received and no significant impact on food quality or the effect

of financial constraints on household members' likelihood of visiting a doctor. They also find almost no significant effect on a panel of subjective measures of well-being, such as optimism, calmness, and stress (in fact, the authors find a slight increase in stress for male borrowers).

Several of these results can be seen as contrary to the conventional wisdom of microfinance. Some effects are strongest on male borrowers, though traditional microcredit arrangements target women on the assumption that they will make better use of the credit. Access to credit does not appear to increase incomes or decrease poverty. Karlan and Zinman point out, though, that this may be the result of the combined decrease in outside employment and increase in school enrollments that they do observe (i.e., income formerly brought in by children is replaced by added business income, and those children now attend school). But in light of the complexity of these results, it is the authors' conclusions that perhaps bear the strongest mention: "Our results highlight the importance of replicating tests of theories and interventions across different settings" (p. 17). In particular, it will be interesting to see going forward whether studies employing a similar research design in different settings find comparable, or different, results.

### Consumer Credit in South Africa

In an earlier study "Expanding credit access: Using randomized supply decisions to estimate the impacts," Karlan and Zinman (2010a) study the effects of access to individual credit for the salaried poor in South Africa. The lender dispensed relatively small (median size \$127 USD) cash loans to borrowers who were salaried workers (not microentrepreneurs). Though this study was performed in a microlending environment that most certainly is *not* traditional, the study has interesting results worth including here. The authors worked with the lender to randomly reconsider the applications of potential borrowers who were initially rejected but who could be considered marginally creditworthy. The treatment group then consisted of borrowers whose applications were reconsidered. The control group contained individuals who were marginally creditworthy but whose initial rejections were not reconsidered. Surveys were conducted six to twelve months after the initial loan application

<sup>11</sup> By specifying the treatment group as the borrowers who were offered credit, this study estimates intention to treat effects. In this case, of the 1,272 applicants who were offered loans, 351 did not actually take the loans. This is a take-up rate of 72 percent (Karlan & Zinman, 2010b, p. 8).

The results suggest that most borrowers in this study used the loans for consumption purposes. The authors find positive effects on job retention, income, food consumption quality and quantity, household decision-making control, and mental outlook. One negative effect is on mental health (principally stress). The study also shows that the loans, though initially selected for denial by the lender, turned out to be profitable. No evidence of overborrowing or cyclical debt was found in the study. An interpretation of the findings of this study is that increased credit access in this situation enhanced welfare, even though the credit was used primarily for consumption.

### The Role of Savings Constraints in Kenya

In the 2009 study “Savings Constraints and Microenterprise Development: Evidence From a Field Experiment in Kenya,” Pascaline Dupas and Jonathan Robinson (economists at UCLA and UC Santa Cruz, respectively) study the effect of microsavings on business investment in Kenya, using a randomized study design. The authors opened interest-free savings accounts in a village bank in rural Kenya for a randomly selected sample of poor daily income earners (such as market vendors).<sup>12</sup> The accounts paid no interest and featured substantial withdrawal fees, effectively offering a negative interest rate on any savings. Nonetheless, the authors find that usage was high among women, and that the savings accounts increased productive investment and expenditures for women, but not men.

The authors key source of data were daily, self-reported logbooks detailing income, expenditure, health information, investment, labor supply, transfers given and received, and negative income shocks. Study participants were supported by trained enumerators as they maintained their logbooks. Logbooks were kept over two to four months, and participants were paid a small amount for each week the logbook was properly completed. This data collection strategy addresses the problem with survey data, in which respondents are asked directly, and often only once, about changes in income, consumption, and so on. Data collected this

<sup>12</sup> This village bank was located in Bumala market, a rural market center along the main highway connecting Nairobi, Kenya and Kampala, Uganda. The bank is community-owned and receives support from the Kenya Rural Enterprise Program Development Agency, the research and development branch of KREP, a Kenyan microfinance organization. In a baseline survey conducted at the beginning of the study, only 2.2 percent of individuals had a savings account with a formal bank (Dupas & Robinson, 2009, p. 8).



Client of Amhara Credit and Savings Institution [ACSI] (Ethiopia)

way can be flawed; the logbook data should be more accurate due to the collection strategy.

The findings of the study are that despite the negative interest rates offered by the savings accounts, 89 percent of the 122 respondents offered an account opened one. Fifty-five percent of the 122 actively used the account (59 percent of women and 51 percent of men). An important finding is that business investment increased significantly among women with access to savings accounts; a minimum estimate of the increase in average daily investment is 40 percent. A second important finding is an overall increase for women, but not men, in expenditures, especially on food (14-29 percent increase) and personal expenditures (37-44 percent increase). The savings accounts do not appear to crowd out other forms of saving, such as participation in Rotating Savings and Credit Accounts (ROSCAs).

Overall, Dupas and Robinson's findings offer strong evidence that microentrepreneurs in Kenya face saving constraints, and that the provision of formal savings accounts increases both business investment and expenditures for women.

### **Evidence on Returns to Capital in Microenterprises**

Two randomized studies by de Mel, McKenzie, and Woodruff provide some evidence about returns to capital in microenterprises such as the businesses most frequently owned by microcredit borrowers. These studies provide insights into two fundamental assumptions that underpin the microcredit industry: (1) that small, informal businesses hold the potential for income growth for their owners; and (2) that returns to capital will be higher for microenterprises owned by women, since women are more credit-constrained than men in low-income countries.

A 2008 paper, "Returns to Capital in Microenterprises: Evidence from a Field Experiment," reports the findings of a study in Sri Lanka. Microenterprise owners were asked to participate in several waves of survey data collection. Survey participants were selected at random to receive US\$100 or US\$200 (10,000 or 20,000 Sri Lankan rupees) in either cash or equipment for their businesses. Although no stipulations were made about the use of the cash grants, these as well as the equipment grants were almost completely invested in business expansion. The authors then measured the returns to these randomized *capital shocks* over

several successive waves of the survey.

The authors find that the grants increase the average profits of microenterprises by more than 5 percent per month, or at least 60 percent per year. The treatment effects appear to be flat or decreasing (not increasing over the survey period) and returns are higher for recipients with more entrepreneurial ability. (The authors outline their measure of entrepreneurial ability in an online appendix to the paper.) A surprising finding is that these positive returns are almost exclusively limited to male-owned businesses; no positive return to capital is found for female business owners. The authors note that the average results may be misleading as there is high variability in the returns across different firms.

In the 2009 study, "Are Women More Credit Constrained? Experimental Evidence on Gender and Microenterprise Returns," the authors further investigate the difference between returns to capital for male and female microenterprise owners. Data from the same experiment reported in the 2008 study are used, with the study population being small, informal business owners in Sri Lanka. The findings of the 2009 study are that while men invest a substantial portion of both small and large grants, their profits increase by 6.5-14 percent of the grant amount. In contrast, women invest only large grants and earn no return on these investments.

Taken together, these studies have important implications for microfinance, although they do not directly measure microfinance impacts (since the programs studied are not microfinance programs). First, the finding that there are large positive returns to capital on average is encouraging. Microcredit is often aimed at microenterprises, and these results suggest that investing in these microbusinesses is profit generating. Similarly, microsavings programs will create opportunities for microentrepreneurs to save for capital investment; this suggests that microsavings programs will be very helpful when business owners face savings constraints. On the other hand, the finding that these returns appear for men (but not for women) is important, since many microfinance products are targeted toward women. Clearly further research is needed to determine whether returns to capital vary by gender in multiple contexts or whether this result is particular to the experiment conducted by de Mel, McKenzie, and Woodruff in Sri Lanka.

## SECTION 6

### Quasi-Experimental Studies

This section presents the results of several quasi-experimental studies of the impact of microfinance. In some cases, the discussions presented in this section are extensions or further analysis of studies included in the first edition of this literature review.

#### The Impact of Microcredit in Bangladesh

In 1998, Mark Pitt (Brown University) and Shahidur Khandker (World Bank) published “The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?” This study was influential as the first serious economic study of the effect of microfinance which attempted to deal with the problems of selection bias and non-random program placement. See also Goldberg (2005) and Roodman and Morduch (2009) for a more detailed discussion of the methodology of this study.

Pitt and Khandker’s results were largely positive. They found an 18 percent return to income from borrowing for women, compared to 11 percent for men, as well as a number of other positive impacts including an increase in girls’ school enrollment and improvements in physical health of children in borrowing families. This paper was followed by a response from Jonathan Morduch (1998) citing serious concerns with Pitt and Khandker’s data and model. Morduch argued that the strategy that Pitt and Khandker used to correct for selection bias actually exacerbated, rather than corrected, the problem. Using the same data with an alternative methodology, Morduch found little impact on household consumption from borrowing. A key result of Morduch’s study is that access to microfinance leads to consumption smoothing, reducing large swings in consumption for borrowing families. There is also some evidence in Morduch’s study that households with access to credit smooth not only consumption

but also labor income. Mark Pitt (1999) responded to the criticisms in Morduch’s article, strongly challenging Morduch’s key arguments, and suggesting that Morduch’s methodology was not appropriate. Neither Morduch’s study nor Pitt’s response has been published.

Using additional data which had become available over the intervening years, Khandker wrote a second paper in 2005 (“Microfinance and Poverty: Evidence Using Panel Data from Bangladesh”) which Nathanael Goldberg’s literature review suggested “may [have been] the most reliable impact evaluation on microfinance to date” as of 2005. The key finding of the new study (which used updated and more robust data) was a positive impact on income from borrowing that was even stronger than in the Pitt and Khandker study. The study also showed a decline in poverty rates across all villages in the study with a larger decline in areas with access to microcredit. Khandker concluded that microfinance accounted for 40 percent of the reduction of moderate poverty in Bangladesh over his study period, 1991/92 to 1998/99.

Roodman and Morduch revisit the Pitt and Khandker data, and the methods used in the Pitt and Khandker, Morduch, and Khandker studies and conclude that all three studies’ evidence for impact is weak. Roodman and Morduch are unable to replicate Pitt and Khandker’s positive findings for the effects of microcredit on the level of household consumption and do not find strong evidence that access to credit leads to consumption smoothing (contradicting Morduch’s strongest result). Despite some data inconsistencies, Roodman and Morduch are able to replicate Khandker’s core results; however, they raise several methodological concerns. Statistical testing of the robustness of the Khandker results suggests a number of concerns about Khandker’s statistical approach to controlling for selection bias, leading



Roodman and Morduch to be less than confident that Khandker's results accurately indicate causality from credit to household consumption.

The fact that Roodman and Morduch's analysis raises doubts about the results of these three studies is notable. As the authors point out, the three studies in question presented prominent and widely disseminated empirical support for four foundational ideas about microcredit in South Asia: (1) that it is effective as a tool for poverty reduction, (2) that this effectiveness is particularly pronounced when women are the borrowers, (3) that the extremely poor benefit most, and (4) that microcredit access enables consumption smoothing. If these empirical results do not stand up to rigorous testing, then the most widely recognized evidence of large, sustained impacts of microcredit disappears. Of course, this doesn't mean that the effects do not exist; they may, but the Roodman and Morduch study raises questions about the existing empirical evidence.<sup>13</sup>

Ultimately, Roodman and Morduch's key conclusion is not about the effectiveness of microfinance, but about the difficulty of obtaining credible results from non-randomized studies. The authors do not suggest that the randomized study is the *only* credible approach to impact assessment, but they do conclude in the paper's analysis that in order for non-randomized studies to be credible, the methods for addressing selection bias must be explicit and of demonstrated high quality.

### **The Coleman Method (as applied to the Philippines)**

Goldberg (2005) outlines the work done by Asian Development Bank economist Brett Coleman in 1999 and in a follow-up article in 2002. This follow-up article was published in *World Development* in 2006. Coleman's innovation was to address the selection bias problem by having borrowers who were interested in microcredit, but who lived in villages where it was not yet available, sign up a year in advance of the arrival of village banks. These borrowers made up the comparison groups, but since they had expressed an interest in obtaining credit, Coleman argues that they made an appropriate comparison group to borrowers in villages where credit was available.

Coleman (2006) demonstrates that for two microlending programs in northeast Thailand, the services are more likely to reach relatively wealthy borrowers than the target group of the "poorest of the poor." Though Thailand is, by Coleman's own argument, not a typical environment for the evaluation of microfinance (due to its overall relative wealth and the widespread availability of credit), Coleman presents his empirical methodology as a portable set of analytical tools that can be used in other contexts.

A 2007 paper, "Impact of Microfinance on Rural Households in the Philippines: A Case Study from the Special Evaluation Study on the Effects of Microfinance Operations of Poor Rural Households and the Status of Women" by Toshio Kondo of the Asian Development Bank, uses the Coleman model to study the effect of a microfinance operation on poor rural households in the Philippines. The stated objective of the project Kondo evaluates is to "reduce poverty, create employment opportunities, and enhance the incomes of the poorest of the rural poor – the bottom 30 percent of the rural population as measured by income" (p. 1).

Kondo's study design compares households in treatment villages where microcredit is available to households in comparison villages where credit is not yet available. In the comparison villages, households have been identified and organized into groups in preparation for the expansion of credit, but they have not yet received loans. In both the treatment and comparison villages, participating households as well as qualified (i.e., eligible for credit) but non-participating households are interviewed. Finally, to address concerns about attrition from the program, Kondo includes graduates and problem households in the treatment group. This adjustment makes the treatment households more similar to the comparison households where future drop-outs and problem borrowers are certain to be included in the group.

Kondo then uses a difference in difference approach to estimate the impact of participation in the lending program. The difference he studies is between participating households and qualified (but non-participating) households in the treatment and control villages. The study includes about ten participating and ten non-participating households in each of the fifty-five treatment villages and sixty-one comparison villages. Over the 116 villages included

<sup>13</sup> To date, the Roodman and Morduch study is available as a Center for Global Development working paper; it has not been published in a peer-reviewed journal.

in the study, twenty-eight different MFIs are represented. Outcome variables include: per capita income, expenditure, savings, food expenditures, other financial transactions (such as other loans, household enterprises and employment), household assets (farm equipment, livestock, appliances), and human capital investments (such as education and health). Despite the program's stated aim of reaching the poorest households in rural Philippines, only 10 percent in Kondo's sample of respondents are poor, while 4 percent are subsistence poor (meaning, in this case, below the food threshold).<sup>14</sup> However, many additional clients are near (but above) the poverty threshold. Still, this suggests a challenge in the on-the-ground identification and inclusion of the intended client groups.

Looking at the groups as a whole, Kondo identifies several positive effects of participation in the lending program. Per capita incomes, expenditures, and food expenditures exhibited statistically significant increases. The results suggest that for every 100 pesos loaned, income increased by 47 pesos, consumption increased by 38 pesos, and food expenditure increased by 12 pesos. Saving was also more prevalent among program participants in treatment villages. These households were 23 percent more likely to have savings accounts and were also likely to maintain higher balances. These households were also more likely to have household enterprises. However, Kondo finds no significant effect on children's school enrollment, education expenditures per child, various health measures, or the incidence of hunger.

When breaking the groups into income categories, however, a major qualification emerges. Similar to Coleman (2006), Kondo finds that the positive effects of borrowing on per capita income, expenditure, and food expenditure are regressive. When borrower income is considered, borrowing positively affects relatively wealthy borrowers, but negatively affects the poorest borrowers. Overall, Kondo suggests that his results should indicate a need for more careful targeting of poor and low-income households for loans and more careful screening for the productive potential of the borrowed funds. Perhaps an important related issue is having different product

offerings for different sub-segments of the poor or near-poor; it may be the case that appropriate products lead to good outcomes while inappropriate products lead to bad outcomes regardless of income strata.

### The Effect of New Bank Branches in Mexico

World Bank researchers Miriam Bruhn and Inessa Love (2009) coauthored the study "The Economic Impact of Banking the Unbanked: Evidence from Mexico." This study uses a quasi-experimental approach exploiting the fact that Banco Azteca opened 815 branches simultaneously in Mexico in 2002. The authors find that the opening of Banco Azteca led to a 7.6 percent increase in the number of informal business owners, a 1.4 percent increase in employment, and a 7 percent increase in average income in municipalities where a branch opened. The Banco Azteca branches opened within existing stores of its parent company, Grupo Elektra and catered to low- and middle-income groups. The authors argue that Banco Azteca is comparable to MFIs due to low-documentation lending requirements, small loans, and motorcycle-riding loan officers that come to borrowers' homes.

Taking advantage of the fact that the Banco Azteca branches opened simultaneously, the authors use a difference-in-difference strategy to compare changes in business ownership, employment, and average income in municipalities with and without Banco Azteca branches. A concern about this study is that systematic differences exist between the municipalities with and without Banco Azteca Branches; municipalities selected to receive branches have significantly higher incomes, lower rates of poverty, and lower rates of unemployment even before the branches arrive. However, the authors take steps to correct for these differences and argue that their results are unbiased.

As indicated above, the results of this study are encouraging, showing positive effects of branch openings on key outcome variables including informal business ownership, employment, and income. The finding of a 7.6 percent increase in informal business owners is statistically significant, but the actual increase is small. The authors find an increase in the percentage of informal business owners in the sample of 0.0062 (or 0.62 percent). The original sample average is 0.0821 (or 8.21 percent).

<sup>14</sup> These percentages are averages for the treatment group (already receiving loans) and the comparison group (signed up to participate in the program but not yet receiving loans).



Client of Al Sol (Mexico)

Taken together, these numbers suggest that the percentage of community residents owning informal businesses increased from 8.21 to 8.83 percent in the Banco Azteca neighborhoods – not exactly a dramatic increase. Further, in a sample split by gender, this finding appears only for men. The income increase in Banco Azteca neighborhoods is statistically significant and slightly stronger for women than for men. However, despite the finding of rising incomes, there is little evidence of an improvement in the proportion of people receiving income above minimum wage, suggesting that the income

increases may be too small to raise individuals out of poverty. Overall, the Bruhn and Love study has some encouraging results but is perhaps less conclusive than the headline results would suggest.

### Microfinance in Thailand (Revisited)

Two papers by Joseph Kaboski and Robert Townsend provide an alternative perspective on the role of microfinance in Thailand (Coleman’s studies were also set in Thailand). “Policies and Impact: An Analysis of Village-Level Microfinance Institutions” (2005) uses survey data from 1997. Institutions represented in the survey were either *production credit groups* which provided saving and lending services (though not always both), rice banks (which make small emergency consumption loans in the form of rice), women’s groups (with various services targeted only at women), and buffalo banks (institutions that formally lend out buffalo or cattle). Of the four types of institutions, the production credit groups could be considered MFIs. The survey data also included a household survey. The key findings are that production credit groups, and especially women’s groups, can promote asset growth, consumption smoothing, and occupational mobility and reduce reliance on moneylenders. The provision of saving services was particularly important for the success of an MFI because the services provided positive outcomes for members. An important qualification is that several of the key results are not statistically significant when instrumental variables are used to control for selection bias; however, the same basic results (sign and magnitude of the estimated effects) appear regardless of estimation method.

Kaboski and Townsend’s 2009 study, “The Impacts of Credit on Village Economies,” provides an impact evaluation of Thailand’s *Million Baht Village Fund* program, a government microfinance initiative launched in 2001. The objective of the Million Baht program was to “improve the economic and social status of villagers, and to enable villages to be less dependent on government aid in the future” (Kaboski & Townsend, 2009, p. 13). The program involved the transfer of one million baht (\$24,000USD using the exchange rate used in the paper) to participating villages; these funds were used to form an independent village bank for lending within the village.



Clients of Mitra Dhuafa in post-tsunami Banda Aceh

This paper uses survey data collected over the years 1997-2003. Since the Million Baht program was launched in 2001, the data provides five years of *before* data (1997-2001) and two years of *after* data (2002-2003), which the authors argue allows them to estimate the village-level effects of the program. Each of the sixty-four villages in the authors' panel received the one million baht funding. The authors further argue that the program design of the Million Baht Fund was conducive to quasi-experimental research for two reasons. First, the program was implemented quickly, completely rolled out between the 2001 and 2002 survey periods. Second, the credit per household varied with village population, because each participating village was given the same amount of money regardless of village size.

The outcome variables used in this study are credit availability, consumption, asset growth, and income growth. The findings suggest that credit availability increased. Though this is not surprising, there is some evidence of a multiplier effect where available credit actually increased by more than the program

infusion of credit (though the multiplier effect results are not statistically significant). The authors also find that non-durable consumption increased as a result of the program; they find an estimated 2.1 baht of additional consumption for each baht of village credit injected. The additional credit seemed to lower the

rate of asset growth, but households were more likely to have rising income. The authors argue that the results point to the presence (before the program) of credit constraints that were somewhat relieved by the Million Baht program.

Kaboski and Townsend also examine whether the impacts of credit are different for female-headed households than for male-headed households. They find no significant differences in the behavior of female- and male-headed households in terms of borrowing or the overall change in income. However, the study shows that when looking at *sources* of income, credit causes a larger increase in the percentage of female-headed households reporting positive and above-average business income. There are also differences in consumption patterns between female- and male-headed households, though not in the ways that microfinance advocates might expect. Female-headed households did not show an increase in spending on children's education but did show a shift toward consumption of auto-repair services, clothing, meat, and alcohol at home.

## SECTION 7

### Non-Experimental Studies

#### The Goldin Institute

Over the period of May 2007-August 2007, the Goldin Institute, an NGO in Chicago, conducted a study of microcredit recipients in Arampur, a village in Northern Bangladesh. The study relied on “oral testimony” (i.e. structured and semi-structured interviews with credit recipients) conducted by trained village residents. A return visit to Arampur was conducted in 2009, with results not yet available from the institute. The qualitative nature of this study does not address the problem of selection bias; on the other hand, the study provides some insight into borrowers’ lives in Bangladesh, where the pervasiveness of microcredit makes it difficult to identify a control or comparison group unaffected by access to credit.

The Goldin Institute reports that in Arampur, there are ten different microlending organizations for about 1,000 households. The authors of the study write that “while all of these organizations seek to provide poverty alleviating loans to the rural poor, our research found that the climate of saturation, competition, and the ready access to loans have produced mixed results” (p. 4). The stories in the Goldin Institute report illustrate these mixed results. Some respondents in this study reported being forced to take loans from traditional moneylenders in order to make their microcredit loan payments on time; this is obviously in direct conflict with the desire (generally agreed upon as a founding principle of microfinance) to reduce dependence on moneylenders. Of course, it isn’t clear from the report whether overall reliance on moneylenders increased or decreased with the introduction of microcredit; it’s possible that while some borrowers still turn to moneylenders in specific circumstances, overall borrowing from moneylenders may have decreased.

Recipients reported that loans were often used for consumption rather than investment purposes.

Often loans were taken from one lender in order to repay another, demonstrating the presence of cyclical debt. The researchers further found that rather than empowering women in household decision making, women were often used as conduits for credit; male relatives would force women to take out loans and turn over the money, while the women remained financially responsible for the loans.<sup>15</sup> Respondents also reported using microloans to pay for their daughters’ dowries.

Borrowers offered several suggestions for improving microcredit in the village. One was to push back the initiation of repayment, now often beginning within one week of taking a loan, to allow a more realistic time-frame for productive investment (especially planting crops) to pay off. Another suggestion was for NGOs to provide services such as health care and education, in addition to lending.

While the published report provides a somewhat unfavorable overall impression of the effect of microcredit on the lives of these villagers, there are several qualifications. First, it is difficult to assess what life in this village would have been like in the absence of microcredit. Second, the report is a very brief and deeply edited summary of the responses. Overall, though, this study certainly offers an interesting counterpoint to the many positive anecdotes available about the impact of microcredit in Bangladesh. The study provides a window on potential problems that can emerge in other countries as microfinance becomes as prevalent as it is today in Bangladesh.

<sup>15</sup> Goldberg’s 2005 paper presents research by Helen Todd (*Women at the Center*) and Anne Marie Goetz and Rina Sen Gupta (“Who Takes the Credit? Gender, Power, and Control Over Loan Use in Loan Programs in Rural Bangladesh”) which looks in some detail at the practice of women turning over loans to their husbands. Goetz and Sen Gupta argue that transferring a loan does not, in and of itself, signal a loss of power for women.

## Microcredit for the Very Poor in Eastern Uttar Pradesh, India

The Royal Bank of Scotland Foundation India, in association with CASHPOR Micro Credit, conducted an impact assessment (“Microfinance and Poverty Alleviation: An Impact Assessment Survey”) of CASHPOR’s operations in India’s Eastern Uttar Pradesh region. A first impact assessment survey was conducted in 2004, and a second survey was conducted in 2008. The 2008 survey included 320 poor women who had taken and repaid at least five loans from CASHPOR over at least four years. There was no control or comparison group specified, due to practical and financial limitations. This study therefore lacks any information about the counterfactual – the situation of the borrowers in the absence of the loan program.

The study relies on data collected using the Progress out of Poverty Index™ (PPI™)<sup>16</sup> for India. The PPI provides a way to estimate the likelihood that a household is poor according to country-specific poverty lines. The survey instrument used to collect data for this study also included several social impact questions.

The assessment shows that taking and repaying at least five loans from CASHPOR over the past four years is strongly and positively associated with progress out of poverty. Using the PPI, the study authors estimate that 66 percent of mature CASHPOR clients are no longer poor according to the Indian National Poverty Line, and 50 percent are no longer poor subject to the international US\$1 per day poverty line. CASHPOR uses a targeting method called the CASHPOR House Index to ensure that the

majority of new borrowers are below the poverty line. Thus, the estimate that half or more of mature clients are no longer poor certainly suggests a relationship between borrowing and poverty reduction, though it is difficult to draw decisive conclusions in the absence of a comparison group.

This study also looked at a number of potential social impacts but was unable to establish a strong association between social impacts and microcredit. For example, 75 percent of the school age children of CASHPOR clients were enrolled in school, and there was evidence that enrollment rates increase as poverty rates decrease (70 percent of children of the very poor were in school, versus 89 percent of the children of the non-poor). Due to the structure of the study, however, there is no way to make a strong causal link between microcredit and these observations about school enrollment rates. There was no evidence of an increase in women’s empowerment accompanying progress out of poverty. Although 75 percent of women interviewed reported that they felt more respected by their family, friends, and spouses as a result of their borrowing activity, there was no discernable difference in women’s decision-making status in poor versus non-poor households.

The results of this study must be interpreted carefully, keeping in mind that no comparison group is available. It is interesting to note, however, that the findings are remarkably similar to the results of some of the randomized studies, which show some effects of borrowing on income but do not find support for the argument that microfinance has positive impacts on schooling, health, and women’s empowerment.

<sup>16</sup> The PPI is a country-specific assessment tool that will help institutions objectively measure outreach to the poor, monitor changes in economic well-being of clients, and provide data that helps managers improve the effectiveness of programs and services. Building on the concept of Grameen Bank’s 10-Point System, the PPI was commissioned by Grameen Foundation, in collaboration with Consultative Group to Assist the Poor (CGAP), Ford Foundation and Microfinance Risk Management, L.L.C. For more information, please visit [www.progressoutofpoverty.org](http://www.progressoutofpoverty.org).

## SECTION 8

### The Macroeconomic Effects of Microfinance

A question that has been taken up very little in the impact assessment literature is the effect of microfinance on macroeconomic measures of economic well-being. Several macroeconomic studies are briefly surveyed in this section; a more comprehensive survey and additional studies of the macroeconomic effects of microcredit and microsavings are badly needed.

A 2010 survey from the Poverty Reduction and Equity Group at the World Bank, authored by Aphichoke Kotikula, Ambar Narayan, and Hassan Zaman, studies recent poverty reduction in Bangladesh. This study, titled “To What Extent Are Bangladesh’s Recent Gains in Poverty Reduction Different from the Past?” seeks to decompose the micro-determinants of poverty reduction between 2000 and 2005 and to compare these to the drivers of poverty reduction in earlier decades. The head count ratio (proportion of the population with per capita income below the poverty line) fell from 49 percent to 40 percent over the 2000-2005 period.

Among a number of other economic changes, the authors note that microfinance participation increased by 62 percent between 2003 and 2005. An interesting result of this study is that the decline in poverty is greater in areas where microfinance access increased more sharply. For example, in areas where the number of microfinance members increased by less than 20 percent, the poverty rate fell by 3.9 percent (from 46.6 to 42.7 percent). In areas where the number of microfinance members increased by more than 40 percent, the poverty rate fell by 13.3 percent (from 54.4 to 41.1 percent). This relationship can be interpreted only as a correlation and not as evidence of a causal relationship between microfinance and poverty reduction. Nonetheless, these results gesture toward an association between microfinance access and poverty reduction in Bangladesh.

A 2005 study by Robin Burgess (London School of Economics) and Rohini Pande (Yale) entitled “Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment” examines the effects on rural poverty (using the head count ratio) of a state-funded program of bank branch expansion into unbanked rural locations. The intention of the branch expansion program was to increase rural household access to formal credit and saving opportunities, which should theoretically lead to poverty reduction.

An instrumental variables strategy is used to correct for the selection bias problem; in this case, the expected bias arises from the fact that relatively richer regions receive greater branch expansion, but may also be more effective at poverty reduction in general. The authors’ main finding is that opening branches in rural, previously unbanked locations in India was associated with decreases in rural poverty. The evidence suggests that the branch expansion can explain a 14-17 percentage-point decline in the rural head count ratio over the study period of 1961-2000. Interestingly, a similar analysis finds no significant effect of branch expansion on urban poverty.

In an unpublished 2009 study (“Microfinance and Inequality”), Hisako and Shigeyuki find that access to microfinance reduces income inequality in a cross-sectional study of sixty-one countries. This finding, if it can be replicated and expanded, could suggest another important impact of microfinance. Certainly, additional studies of the macroeconomic effects of microfinance are essential to a complete understanding of the overall impact of this set of financial services. Macroeconomic studies of this nature present methodological challenges even more serious than those facing studies addressing microeconomic questions; determination of a credible approach to studying macroeconomic outcomes is a major research challenge.

## SECTION 9

### Conclusions and Directions for Future Research

Overall, what does this body of evidence say about the effectiveness of microfinance as an economic development tool? Again, no single impact assessment study can provide an answer to the question of whether microfinance works universally. Each new study must be interpreted carefully, taking into account several important distinctions. What type of *microfinance* is being studied – is it microlending, microsavings, or some other financial service? Is the institution offering this particular service motivated by the desire to help the poor, or is the institution profit-driven, and is the institution well-run overall? Considering the study methodology, has the problem of selection bias been adequately addressed? The time frame of the study must be taken into account. Was there enough time for the predicted positive effects to actually occur and be observed? Can the study be revisited some months or years later to see how the clients are faring? Finally, to what extent can the findings of a particular study be generalized, given that every impact assessment (regardless of methodology) necessarily takes place in a particular place, considering a particular population? Understanding the scope and limitations of impact assessment evaluation is essential. The idea that any one study can definitively answer the question of whether microfinance is working is unrealistic. It is the body of evidence (not the results of a single study) that will ultimately serve as a guide to microfinance practitioners and funding agencies.

This survey is an attempt to piece together the most recent contributions to that body of evidence, and overall, a few things are clear. There is evidence from a number of studies (using a variety of methodologies and from different settings) suggesting that microfinance is good for microbusinesses. Various studies showed increases in business ownership, investment, and profits. Importantly, this result holds for microsavings as well as microcredit. Microsavings in particular appears to be a promising financial

instrument whose potential is only beginning to be discovered. Based on the studies in this survey, the overall effect on the incomes and poverty rates of microfinance clients is less clear, as are the effects of microfinance on measures of social well-being such as education, health, and women's empowerment.

As a final conclusion, a list of important unanswered (or incompletely answered) questions in microfinance impact assessment follows. Hopefully, upcoming research will take steps in the direction of answering some of them.

- (1) Do the business investments evidenced in the existing research lead to additional development outcomes over a longer time period? Will incomes rise and poverty rates fall as borrowers continue to operate their businesses? Will new studies be able to replicate earlier positive results about social outcomes?
- (2) To what extent do loans and savings programs alleviate the day-to-day uncertainty of life below the poverty line?
- (3) Will additional studies (in alternative settings) find similar positive results of microsavings programs?
- (4) Can insightfully designed lending programs lead to positive outcomes for the very poorest borrowers?
- (5) What about the macroeconomic effects of microfinance programs? Is there convincing evidence of effects on poverty rates, rates of inequality, and economic growth in a variety of settings?

Further, impact evaluation researchers must consider not only whether programs are effective or not, but also the reasons behind the effectiveness or lack of effectiveness of various interventions. Angus Deaton (2010) writes, "Finding out about how people in low-income countries can and do escape from poverty is unlikely to come from the empirical





Clients of Ahon sa Hirap, Inc. [ASHI] (Philippines)

evaluation of actual projects or programs, whether through randomized trials or econometric methods that are designed to extract defensible causal inferences, unless such analysis tries to discover *why* projects work rather than *whether* they work ...” (p. 3) Answers to these important questions about the mechanisms behind positive development outcomes are badly needed.

Additional randomized studies are underway in Mexico, Mongolia, Morocco, Bosnia, Mali, and the Philippines.<sup>17</sup> The results of these studies are

eagerly anticipated by the microfinance community. As microfinance impact assessment continues, the combined results of well-designed and implemented randomized studies, innovative quasi-experimental studies, and judiciously presented, non-experimental research will provide useful and reliable estimates of the effects of microfinance programs. As our understanding of the strengths and limitations of various research methods deepens, the research community’s ability to answer these critical questions will be enhanced.

<sup>17</sup> Thanks to Dean Karlan of Innovations for Policy Action for providing the locations of upcoming studies.

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# APPENDIX

## Measuring the Impact of Microfinance: Taking Stock of What We Know Executive Summary

**Nathanael Goldberg**  
**December 2005**

The prevalence of microfinance impact evaluations has increased in recent years, with programs using studies not just to prove the effectiveness of microfinance, but to improve it as well. However, the quality and rigor of microfinance impact evaluations vary greatly. This paper surveys the most significant microfinance impact evaluations that have been published as of mid-2005 and guides readers through interpreting the results and reliability of each study.

One of the first comprehensive microfinance impact assessments was “Credit for the Alleviation of Rural Poverty: The Grameen Bank in Bangladesh,” (1988) by Mahabub Hossain. Hossain found Grameen members’ average household income to be 43 percent higher than target non-participants in comparison villages, with the increase in income from Grameen highest for the landless, followed by marginal landowners. Hossain warned it was likely that his impact findings would be overstated, however, because Grameen members were found to be younger and better educated than nonmembers who were more likely to be landless. This type of difference between participants and comparison households is prevalent among microfinance impact evaluations and limits the conclusions we can draw from many of them.

The 1998 book, *Fighting Poverty with Microcredit* by World Bank economist Shahidur Khandker, and the related paper, “The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?” by Khandker and Mark Pitt, a Brown University economist, were influential because they were the first serious attempt to use statistical methods to generate a truly accurate

assessment of the impact of microfinance among three Bangladeshi programs: Grameen Bank, BRAC, and RD-12. The centerpiece of their findings was that every additional taka lent to a woman adds an additional 0.18 taka to annual household expenditures—an 18 percent return to income from borrowing. However, NYU economist Jonathan Morduch responded with the paper, “Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh” (1998), citing serious concerns with their data and their statistical model.

With the benefit of more data, Khandker was able to improve their model, published in a 2005 update to the study, “Micro-finance and Poverty: Evidence Using Panel Data from Bangladesh.” The updated findings showed that each additional 100 taka of credit to women increased total annual household expenditures by more than 20 taka. There were no returns to male borrowing at all. Khandker found that between 1991/92 and 1998/99 moderate poverty in all villages declined by 17 percentage points: 18 points in program areas and 13 percentage points in non-program areas. Among program participants who had been members since 1991/92 poverty rates declined by more than 20 percentage points—about 3 percentage points per year. Khandker estimated that more than half of this reduction is directly attributable to microfinance, and found the impact to be greater for extreme poverty than moderate poverty, which microfinance was found to reduce by 2.2 percentage points per year and 1.6 percentage points per year, respectively. Khandker further calculated that microfinance accounted for 40 percent of the entire reduction of moderate poverty in rural Bangladesh.

## THE AIMS STUDIES

In 1995 the United States Agency for International Development (USAID) launched the Assessing the Impacts of Microenterprise Services (AIMS) Project, which developed five tools (two quantitative and three qualitative) designed to provide practitioners a low-cost way to measure impact and improve institutional performance. The tools recommended comparing existing clients to incoming clients and using the difference between them to estimate program impact. The idea behind the methodology was that since both the clients and the comparison households had chosen to join the program, there should be no difference in their “entrepreneurial spirit.” Otherwise, higher incomes among participants might simply be driven by superior business acumen. However, some experts, notably Dean Karlan in “Microfinance Impact Assessments: The Perils of Using New Members as a Control Group” (2001), have called into question the validity of this type of comparison. Karlan warns that this design can yield biased estimates of impact because MFIs may have originally started to work with different types of clients than they currently serve (for instance, an MFI may have cautiously started out working with better-off communities before branching out to poorer areas), and because clients who chose to enroll earlier may differ from those who chose to wait and see before joining.

The AIMS Core Impact Assessments of SEWA (India), Zambuko Trust (Zimbabwe), and Mibanco (Peru) avoid this problem through the use of longitudinal data and non-client comparison groups. “Managing Resources, Activities, and Risk in Urban India: The Impact of SEWA Bank” (2001), by Martha Chen and Donald Snodgrass, compared the impact of clients who borrowed for self-employment to those who saved with SEWA Bank without borrowing, and compared both groups to non-clients. Borrowers’ income was over 25 percent greater than that of savers, and 56 percent higher than non-participants’ income. Savers, too, enjoyed household income 24 percent greater than that of non-participants. These findings indicate that microfinance—credit or savings—can be quite effective. “Microfinance Program Clients and Impact: An Assessment of Zambuko Trust, Zimbabwe” (2001), by Carolyn Barnes, found that while clients’ income was significantly higher in 1997 than the incomes of other groups, by 1999 the difference was no longer statistically significant, though continuing clients still earned the most. “The Impacts of Microcredit: A

Case Study from Peru” (2001), by Elizabeth Dunn and J. Gordon Arbuckle Jr., found Mibanco clients earned \$266 more per household member per year than non-participants.

## WIDER IMPACTS

### Empowerment

Hashemi, Schuler, and Riley, in “Rural Credit Programs and Women’s Empowerment in Bangladesh” (1996), used a measure of the length of program participation among Grameen Bank and BRAC clients to show that each year of membership increased the likelihood of a female client being empowered by 16 percent. Even women who did not participate were more than twice as likely to be empowered simply by virtue of living in Grameen villages. This may suggest that a positive spillover from microfinance is affecting the norms in communities, but it could also imply that Grameen selects relatively empowered communities for program placement.

### Contraceptive Use

“Poverty Alleviation and Empowerment: The Second Impact Assessment Study of BRAC’s Rural Development Programme” (1998), by A. M. Muazzam Husain, reported that members who had been with BRAC the longest had significantly higher rates of contraceptive use. Fighting Poverty with Microcredit found credit provided to women reduced contraceptive use among participants. However, as discussed above, the results from Khandker’s earlier work may be unreliable. “The Impact of an Integrated Micro-credit Program on Women’s Empowerment and Fertility Behavior in Rural Bangladesh” (1998), by Steele, Amin, and Naved, estimated that, even after statistically controlling for prior contraceptive use, borrowers were 1.8 times more likely to use contraceptives than the comparison group. Membership in a savings group was not found to have an effect. However, analysis of the actual number of births did not reveal a statistical relationship between either savings or credit and fertility.

### Nutrition

Barbara MKNelly and Christopher Dunford, both of Freedom from Hunger, completed two comprehensive evaluations of Credit with Education programs: “Impact of Credit with Education on Mothers and Their Young Children’s Nutrition: Lower Pra Rural Bank Credit with

Education Program in Ghana” (1998), and “Impact of Credit with Education on Mothers and Their Young Children’s Nutrition: CRECER Credit with Education Program in Bolivia” (1999). In Ghana, participants experienced an increase in monthly nonfarm income of \$36, compared to \$17 for the comparison group. Participants were more likely to breastfeed their children and more likely to delay the introduction of other foods into their babies’ diets until the ideal age, and they were more likely to properly rehydrate children who had diarrhea by giving them oral rehydration solution. These impacts paid off in a significant increase in height-for-age and weight-for-age for children of participants. “Credit Programs for the Poor and the Health Status of Children in Rural Bangladesh” (2003) by Pitt, Khandker, Chowdhury, and Millimet, found substantial impact on children’s health (as measured by height and arm circumference) from women’s borrowing, but not from male borrowing, which had an insignificant or even negative effect.

## DETERMINANTS OF IMPACT

### Control of Loan

In *Women at the Center*, Helen Todd found that a quarter of clients in her sample were turning over their entire loans to their husbands. Todd described these women as the most marginal in her sample; though they represent only 25 percent of the members, 41 percent of the borrowers who were still poor after 10 years of participation were among this group. Other studies, however, found that that even in the case where women have the least control—i.e., women channeling their entire loans—women are better off with microfinance than without. “Rural Credit Programs and Women’s Empowerment in Bangladesh” confirms this conclusion, finding that 36 percent of Grameen and BRAC borrowers with no control of their loans could be considered empowered, compared to only 9 percent of women in comparison villages.

### Incoming Poverty Level

The Second Impact Assessment Study of BRAC found that BRAC members’ non-land assets were 380 percent greater than those of comparison group households, and net worth was 50 percent higher. Significantly fewer

BRAC households were poor (52.1 percent of BRAC households versus 68.6 percent of the comparison group). However, subgroup analysis revealed that landless clients (the poorest clients) benefited least from the program, while those with 1-50 decimals of land (“the poor”) benefited most. Another study, “Monitoring diversity of poverty outreach and impact of microfinance: a comparison of methods using data from Peru” (2005), by Copestake et al., found that impact for the wealthier half of Promuc clients was 80 percent higher than the impact for the poorer half.

However, other studies, including “Micro-finance and Poverty: Evidence Using Panel Data from Bangladesh,” found that the poorest clients benefited most from participation. “The Maturing of Indian Microfinance” (2004), by EDA Rural Systems, supports this conclusion, showing that while non-poor clients most often reported an increase in household income, they didn’t do much better than non-clients. Compared to non-clients, the very poor benefited most from program participation.

### Family Crises

In *Women at the Center*, Helen Todd found that out of the 17 Grameen Bank borrowers who were still poor after a decade, ten of them had experienced a serious illness in the family in the three years before her study. According to Todd, the families that suffer crises were almost always forced to sell off assets to pay for medical treatment and to support the family through the loss of income from the husband or the wife. Other studies show mixed results on the effect of crises. Another Todd study, “Paths out of Poverty: The Impact of SHARE Microfin Limited,” found though 49 percent of SHARE clients had experienced a family crisis or natural disaster in the previous four years, they were no more-or-less likely to have experienced an increase or decrease in poverty. Todd attributed their ability to cope with crises to their extraordinary savings rates. “Moris Rasik: An Interim Impact Assessment,” edited by David Gibbons, however, corroborates Todd’s earlier findings from *Women at the Center* (this time with a larger sample size). Among clients who had experienced both serious illness and death in the family, nearly 60 percent remained Very Poor, versus only 40 percent for those who had experienced serious illness only. These results highlight the need to further develop savings and insurance products for the poor.



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