

ADB Institute
Research Paper Series
No. 53

December 2003

Micro Finance and Poverty Reduction in Asia: What is the Evidence?

John Weiss, Heather Montgomery
and Elvira Kurmanalieva

ABOUT THE AUTHOR

John Weiss is a Director of Research at the ADB Institute. He is also Professor of Development Economics at the University of Bradford, UK and has acted as a consultant to most of the major international development organizations, including the ADB. He is the author of a number of books on economic development, focussing principally on cost-benefit analysis and industrialization.

Heather Montgomery is a Research Fellow at the ADB Institute. Prior to joining ADB Institute, she held visiting positions at various institutions, including the United States Federal Reserve Board of Governors, Japan's Ministry of Finance, the Bank of Japan and Japan's Ministry of International Trade and Industry, while completing her Ph.D. dissertation research in economics at the University of Michigan.

Elvira Kurmanalieva is a Research Associate at the ADB Institute and currently a Ph.D. student at the National Graduate Institute for Policy Studies (GRIPS). Prior to entering GRIPS she served as Chief Economist at the National Bank of the Kyrgyz Republic."

Additional copies of the paper are available free from the Asian Development Bank Institute, 8th Floor, Kasumigaseki Building, 3-2-5 Kasumigaseki, Chiyoda-ku, Tokyo 100-6008, Japan. Attention: Publications. Also online at www.adbi.org

Copyright © 2003 Asian Development Bank Institute. All rights reserved. Produced by ADBi Publishing.

The Research Paper Series primarily disseminates selected work in progress to facilitate an exchange of ideas within the Institute's constituencies and the wider academic and policy communities. The findings, interpretations, and conclusions are the author's own and are not necessarily endorsed by the Asian Development Bank Institute. They should not be attributed to the Asian Development Bank, its Boards, or any of its member countries. They are published under the responsibility of the Dean of the ADB Institute. The Institute does not guarantee the accuracy or reasonableness of the contents herein and accepts no responsibility whatsoever for any consequences of its use. The term "country", as used in the context of the ADB, refers to a member of the ADB and does not imply any view on the part of the Institute as to sovereignty or independent status. Names of countries or economies mentioned in this series are chosen by the authors, in the exercise of their academic freedom, and the Institute is in no way responsible for such usage.

ABSTRACT

Despite the extensive spread of micro finance, studies on the actual impact of MFIs are often more ambivalent about its impact than is the aid community. Much has been written on the range of institutional arrangements pursued in different organizations and countries and in turn a vast number studies have attempted to assess the outreach and poverty impact of such schemes. However, amongst the academic development community there is a recognition that perhaps we know much less about the impact of these programs than might be expected given the enthusiasm for these activities in donor and policy-making circles.

In recognition of this uncertainty this paper aims to bring together some of the recent evidence that has been accumulating on the impact of microfinance activities on poverty reduction. In particular we ask what is the evidence on three specific issues:

- the extent to which microfinance initiatives have made a lasting difference in pulling households out of poverty on a permanent basis;
- the extent to which microfinance programs reach only the better-off amongst the poor, leaving the ‘core poor’ unaffected;
- how far micro finance is a cost-effective means of transferring income to the poor.

The evidence surveyed here suggests that the conclusion from the early literature, that whilst micro finance clearly may have had positive impacts on poverty it is unlikely to be a simple panacea for reaching the core poor, remains valid. Reaching the core poor is difficult and some of the reasons that made them difficult to reach with conventional financial instruments mean that they may also be high risk and therefore unattractive microfinance clients. Hence there is a need to continually improve design and outreach and to see MFIs as part of the package for targeting the poor, rather than the whole solution.

TABLE OF CONTENTS

<i>About the Author</i>	II
<i>Abstract</i>	III
<i>Table of Contents</i>	IV
1. Introduction	1
2. Some Features of Micro Finance in Asia	2
3. Poverty and Micro Finance	4
4. Poverty Impact	10
5. Forms of Micro Credit Interventions and Cost-effectiveness	14
6. Conclusions	16
Tables (in body of text)	
Table 1. Outreach Indicators by Region	3
Table 2. Microfinance Impact Studies	7
Table 3. Cost Effectiveness Ratios: Bangladesh in the early 1990s	15

Micro Finance and Poverty Reduction in Asia: What is the Evidence?

John Weiss, Heather Montgomery and Elvira Kurmanalieva[†]

1. Introduction

The microfinance revolution has changed attitudes towards helping the poor in many countries and in some has provided substantial flows of credit, often to very low-income groups or households, who would normally be excluded by conventional financial institutions. Bangladesh is the starkest example of a very poor country, where currently roughly one quarter of rural households are direct beneficiaries of these programs (Khandker 2003). Much has been written on the range of institutional arrangements pursued in different organizations and countries and in turn a vast number of studies have attempted to assess the outreach and poverty impact of such schemes. However, amongst the academic development community there is a recognition that perhaps we know much less about the impact of these programs than might be expected given the enthusiasm for these activities in donor and policy-making circles. To quote a recent authoritative volume on micro finance:

“MFI field operations have far surpassed the research capacity to analyze them, so excitement about the use of micro finance for poverty alleviation is not backed up with sound facts derived from rigorous research. Given the current state of knowledge, it is difficult to allocate confidently public resources to microfinance development.” (Zeller and Meyer 2002).

This is a very strong statement of doubt and in part reflects a lack of accurate data, but also in part methodological difficulties associated with assessing exactly what proportion of income and other effects on the beneficiaries of micro credit can actually be attributed to the programs themselves. In recognition of this uncertainty this paper aims to bring together some of the recent evidence that has been accumulating on the impact of microfinance activities on poverty reduction. In particular we ask what is the evidence on three specific issues.

- the extent to which microfinance initiatives have made a lasting difference in pulling households out of poverty on a permanent basis;
- the extent to which microfinance programs reach only the better-off amongst the poor, leaving the ‘core poor’ unaffected;
- how far micro finance is a cost-effective means of transferring income to the poor.

[†] John Weiss is Research Director and Heather Montgomery is a Research Fellow at the ADB Institute. At the time of writing Elvira Kurmanalieva was a Research Associate at the ADB Institute. This first draft of this paper was presented at the 2003 ADB Institute Annual Conference on “Microfinance in Asia: Poverty Impact and Outreach to the Poor,” Tokyo, 5 December 2003.

These are very basic questions and the fact that they can still be posed reflects the extent of uncertainty in the literature.

The paper is organized in four sections. The first provides a brief overview of some of the features of microfinance activities in Asia, which is our region of focus. The second discusses a few concepts from the poverty literature and links these with microfinance programs. The third surveys the evidence from recent research studies on the first two of the three questions posed above. The fourth section addresses the third question. Since a number of other surveys are also available we give most attention to evidence produced in the last three or four years.¹ Finally we draw some brief conclusions.

2. Some Features of Micro Finance in Asia

“Asia is the most developed continent in the world in terms of volume of MFI (microfinance institution) activities.” This conclusion, drawn by Lapenu and Zeller (2001:27), is based on an analysis of over 1,500 institutions from 85 developing countries. Comparing MFIs in Asia with those in Africa and Latin America, the study found that in the 1990s Asia accounted for the majority of MFIs, retained the highest volume of savings and credit, and served more members than any other continent.

This generalization of course covers up some wide disparities within the region. East Asia is particularly well served by MFIs. The largest number of members served and the largest distribution of loans and mobilization of savings in terms of GNP is found in Bangladesh, Indonesia, Thailand and Viet Nam. In contrast, the two most populated countries in Asia, India and the PRC, have very low outreach, despite a high concentration of the regions poor. Countries such as Afghanistan, Myanmar and Pakistan also have low outreach due to a variety of factors.

Despite these disparities within the region, overall it is said that MFIs have flourished in Asia and that compared to other regions they exhibit good outreach and high repayment rates.² Table 1 below presents the most recent data from the *Microbanking Bulletin*, which gives only data on the limited number of MFIs who choose to report to the Bulletin. Those reporting to the Bulletin are thought to be amongst the best and are therefore unlikely to be representative (Meyer 2002: 14). Nonetheless amongst these, by various measures, Asian MFIs demonstrate relatively good outreach. They account for the largest number of borrowers (70% of which are women) and are second only to African MFIs in terms of number of voluntary savers. In terms of impact, size of loans and deposits are often taken as a simple indicator of impact on the poor. By these criteria, Asian MFIs have among the lowest Loan and Savings Balance per Borrower, even after adjusting for GNP per capita, suggesting that they are effectively reaching the poor.

¹ An earlier helpful survey published by ADBI is Meyer (2002). This draws out some of the methodological problems in assessing impact and surveys a number of important studies available at the time of the writing (around 2001). Morduch (1999) is an extremely authoritative earlier survey focusing on both conceptual and empirical questions.

² Lapenu and Zeller (2001:28) table 16.

Table 1. Outreach Indicators by Region

	Number of Active Borrowers	Average Loan Balance per Borrower (US\$)	Number of Voluntary Savers	Average Saving Balance per Saver (US\$)
Africa	21,974	228	27,082	105
Asia	32,915	195	18,374	39
Eastern Europe/ Central Asia	6,040	590	0	N/a
Latin America	13,755	581	2,422	741
Middle East/ North Africa	13,463	286	0	N/a

Source: *Microbanking Bulletin* Issue #9, July 2003

The institutions that provide micro finance and the methods used to deliver microfinance products take a variety of forms—cooperatives, village banks, and lending to solidarity groups or individuals—and we see almost all of these varieties within Asia.

As there can be a variety of lending approaches, a range of institutional models are also found for MFIs. These include unregulated NGOs, credit unions or co-operatives (which are often regulated), registered banking institutions (either banks or non-bank financial institutions) and government organizations. In some cases the institutional forms blur into one another with government banks operating microfinance services in collaboration with NGOs or credit co-operatives.

In recent years there has been a significant shift in both thinking and practice in the microfinance sector with MFIs coming to be seen as providing a range of financial services to the poor, including savings facilities, not just micro credit. The intellectual argument for this comes from the insight that the poor have a strong need to manage their very limited resources and that various forms of savings play an important role in household budgeting by the poor (Rutherford 2000). The practical demonstration of this is the shift from the original Grameen model of micro credit for productive purposes to Grameen Mark II with its emphasis on a range of flexible financial products, including loans of varying repayment periods for consumption as well as investment and various short and longer-term savings accounts (Rutherford 2003).

In parallel with this reappraisal of micro finance within the NGO sector has gone a move towards the transformation of NGOs into regulated financial institutions with a view to allowing them to tap non-donor sources of funding and to offer a wider range of financial services. This trend, which has seen 39 important NGOs (15 in Asia) transformed over the period 1992-2003, places micro finance squarely within the conventional financial sector and raises important issues of governance and regulation in connection with the new institutions (Fernando 2003). Given that the failure of commercial financial institutions to reach the poor provided the initial impetus for MFIs, this new trend is paradoxical and raises questions as to whether the initial poverty reduction objectives of the transformed NGOs will be subjugated to commercial criteria (so-called 'mission drift'), although Fernando (2003) argues that as yet there is little evidence of this.

3. Poverty and Micro Finance

Here we define poverty as an income (or more broadly welfare) level below a socially acceptable minimum and micro finance as one of a range of innovative financial arrangements designed attract the poor as either borrowers or savers. In terms of understanding poverty a simple distinction can be drawn within the group 'the poor' between the long-term or 'chronic poor' and those who temporarily fall into poverty as a result of adverse shocks, the 'transitory poor'. Within the chronic poor one can further distinguish between those who are either so physically or socially disadvantaged that without welfare support they will always remain in poverty (the 'destitute') and the larger group who are poor because of their lack of assets and opportunities. Furthermore within the non-destitute category one may distinguish by the depth of poverty (how far households are below the poverty line) with those significantly below it representing the 'core poor', who are sometimes categorized by the irregularity of their income.

In principle, micro finance can relate to the chronic (non-destitute) poor and to the transitory poor in different ways. The condition of poverty has been interpreted conventionally as a lack of access by poor households to the assets necessary for a higher standard of income or welfare, whether assets are thought of as human (access to education), natural (access to land), physical (access to infrastructure), social (access to networks of obligations) or financial (access to credit) (World Bank 2000:34). Lack of access to credit is readily understandable in terms of the absence of collateral that the poor can offer conventional financial institutions, in addition to the various complexities and high costs involved in dealing with large numbers of small, often illiterate, borrowers. The poor thus have to rely on loans from either moneylenders, at high interest rates, or friends and family, whose supply of funds will be limited. Microfinance institutions attempt to overcome these barriers through innovative measures such as group lending and regular savings schemes, as well as the establishment of close links between poor clients and staff of the institutions concerned. As noted above, the range of possible relationships and the mechanisms employed are very wide.

The case for micro finance as a mechanism for poverty reduction is simple. If access to credit can be improved, it is argued, the poor can finance productive activities that will allow income growth, provided there are no other binding constraints. This is a route out of poverty for the non-destitute chronic poor. For the transitory poor, who are vulnerable to fluctuations in income that can bring them close to or below the poverty line, micro finance provides the possibility of credit at times of need and in some schemes the opportunity of regular savings by a household itself can be drawn on. The avoidance of sharp declines in family expenditures by drawing on such credit or savings allows 'consumption smoothing.' In practice the distinction between the needs of the chronic and transitory poor for credit for 'promotional' (that is income creating) and 'protectional' (consumption smoothing) purposes, respectively, is over-simplified, since the chronic poor will also have short term needs that have to be met, whether it is due to income shortfalls or unexpected expenditures like medical bills or social events like weddings or funerals. In fact, it is one of the most interesting generalizations to emerge from the micro finance and poverty literature that the poorest of the chronic poor (the core poor) will borrow essentially for protectional purposes given both the low and irregular nature of their income. This group it is suggested will be too risk averse to

borrow for promotional measures (that is investment in the future) and will therefore be only a very limited beneficiary of microfinance schemes (Hulme and Mosley 1996: 132).³

The view that it is the less badly-off poor, who benefit principally from micro finance, has become highly influential and, for example, was repeated in the World Development Report on poverty (World Bank 2000:75). Apart from the risk aversion argument noted above a number of other explanations for this outcome have been put forward. A related issue refers to the interest rates charged to poor borrowers. Most microfinance schemes charge close to market-clearing interest rates (although these will often not be enough to ensure full cost-recovery given the high cost per loan of small-scale lending). It may be that, even setting aside risk-aversion argument, such high rates are unaffordable to the core poor given their lack of complementary inputs; in other words, despite having a smaller amount of capital, marginal returns to the core poor may be lower than for the better-off poor. If the core poor cannot afford high interest rates they will either not take up the service or take it up and get into financial difficulties. Also where group lending is used, other members of the group may exclude the very poor because they are seen as a bad credit risk, jeopardizing the position of the group as a whole. Alternatively, where professional staff operate as loan officers, they may exclude the very poor from borrowing, again on grounds of repayment risk. In combination, these factors, it is felt by many, explain the weakness of micro finance in reaching the core poor.⁴

Even where micro finance does reach the core poor, when (as in many instances) donor or government funds are required to subsidize the microfinance institutions involved, it is not inevitably the case that this is an efficient strategy. As funds are fungible within households, the use of the loan is not the issue and what matters is the cost of transferring the funds through a micro credit institution per dollar received by the target group, as compared with the benefit-cost ratio for alternative schemes for reaching the core poor, such as food subsidies, workfare, integrated regional development initiatives and so forth. Such comparisons must take account of not just the administrative costs involved, but also the leakage rate (that is the benefits to the non-poor).

Given the new trends in the sector and their possible effect in diluting the original poverty focus of MFIs the question of their impact on the poor (and particularly the core poor) is clearly of great policy interest. It might be thought that if such institutions are designed to serve only poor clients and if repayment rates are high, no further detailed analysis is needed. Such a view is misleading for a number of reasons. First, there is no guarantee that only the poor will be served unless strong eligibility

³ Morduch (2003) points out that, although this argument may be true, the data in Hulme and Mosley's book cannot be used to infer this since the arithmetic basis for their comparison of income changes for different categories of borrowers, biasing their results in favor of their conclusion.

⁴ An important attempt to address this problem has been the Income Generation for Vulnerable Group Development (IGVGD) program run by BRAC in Bangladesh, which combines measures of livelihood protection (food aid) with measures of livelihood promotion (skills training and micro credit). Hence, micro credit is provided as part of a package approach. Matin and Hulme (2003) survey the evidence on how far the benefits of this program actually reach the core poor and conclude that although the program was more successful than more conventional micro credit schemes, nonetheless many target households were still missed.

criteria (like land ownership) are enforced. Often the aim is to dissuade the non-poor with the inconvenience of frequent meetings or the stigma of being a member of a credit group of the poor. Such disincentives need not work and eligibility criteria where they exist may not be enforced. Second, high repayment rates may be due to social pressure within a group or family and may not reflect the capacity to repay (if for example loans from moneylenders have to be taken out to repay the micro credit). Third, even if the poor are genuinely served by MFIs, as long as public funds are required to finance the MFI there is the issue of how cost-effective this means of reaching the poor is compared with alternatives. Hence for these sorts of reasons, there is a strong case for attempting to assess the impact of such loans on the welfare of the target group.

Nonetheless assessing the true relationship between microfinance services and poverty reduction is not straightforward. It is not simply a case of looking at a group of borrowers, observing their income change after they took out micro credits and establishing who has risen above the poverty line. Accurate assessment requires a rigorous test of the counterfactual—that is how income (or whatever measure is used) with a micro credit compares with what it would be without it, with the only difference in both cases being the availability of credit. Empirically, this requires a control group identical in characteristics to the recipients of credit and engaged in the same productive activities, who have not received credit, and whose income (or other measure) can be traced through time to compare with that of the credit recipients.⁵ Furthermore, to allow for changes over time, in principle assessments should allow for the possibility of reversals, with households slipping back below the poverty line if the productive activities financed by the credits are unsustainable. Studies based on a rigorous counterfactual find much smaller gains from micro finance than simple unadjusted ‘before and after’ type comparisons, which erroneously attribute all gains to micro credit.

Here we examine some of the recent ‘scientific’ studies on the impact of MFIs based on various survey data. We do not report the results of work based on more qualitative or participatory approaches.⁶ Table 2 summarizes the results of the studies surveyed here.

⁵ Coleman (2001) has a useful non-technical explanation of the difficulties of applying this approach and eliminating ‘selection’ and ‘placement’ bias in micro credit studies.

⁶ See Hulme (1999) for a discussion of different approaches to impact. He points out that despite their cost in funds and time, such scientific studies involving detailed sample surveys are the most common approach where the aim is to establish impact for policy or investment purposes.

Table 2. Microfinance Impact Studies

Study	Coverage (in Asia only)	Methodology	Results
Hulme and Mosley (1996)	Indonesia (BKK, KURK, BRI), India (Regional Rural Banks) Bangladesh (Grameen, BRAC, TRDEP), Sri Lanka (PTCCS)	Borrowers and control samples, before and after.	Growth of incomes of borrowers always exceeds that of control group. Increase in borrowers income larger for better-off borrowers.
MkNelly et al. (1996)	Thailand (village banks - Credit with Education)	Non-participants in non-program villages used as controls	Positive benefits, but no statistical tests for differences reported.
Khandker (1998)	Bangladesh (Grameen, BRAC)	Double difference comparison between eligible and ineligible households and between program and non-program villages	5% of participant households removed from poverty annually. Additional consumption of 18 taka for every 100 taka of loan taken out by women.
Pitt and Khandker (1998)	Bangladesh (BRAC, BRDB, Grameen Bank)	Double difference estimation between eligible and non-eligible households and programs with and without microfinance programs. Estimations conducted separately for male and female borrowing.	Positive impact of program participation on total weekly expenditure per capita, women's nonland assets and women's labor supply. Strong effect of female participation in Grameen Bank on schooling of girls. Credit programs can change village attitudes and other village characteristics.
Coleman (1999)	Thailand (village banks)	Double difference comparison between participant and non-participant households and between villages in which program is introduced and villages where it is not yet introduced.	No evidence of program impact. Village bank membership has no impact on asset or income variables.

Study	Coverage (in Asia only)	Methodology	Results
Chen and Snodgrass (2001)	India (SEWA bank)	Control group from same geographic area.	Average income increase rises for bank's clients in comparison with control group. Little overall change in incidence of poverty, but substantial movement above and below poverty line.
Coleman (2004)	Thailand (village banks)	Double difference estimation between participants and non-participants and villages with and without microfinance program.	Programs do not reach the poor as much as they reach relatively wealthy people. Impact is larger on richer committee members than on rank-and-file members.
Park and Ren (2001)	PRC (NGOs, government programs, mixed NGO-government programs)	(i) Probit estimation of participation and eligibility for each type of program; (ii) OLS and IV estimation of impact of micro credit on household income.	In NGO and mixed programs the very rich even if eligible (for mixed programs) are excluded from participation. In the government program the rich are both eligible and more likely to participate. Impact estimation finds evidence of positive impact of micro credit on income.
Duong and Izumida (2002)	Viet Nam (VBA 84% of total lending), VBP, PCFs, commercial banks, public funds)	Tobit estimation of (i) participation in rural credit market; (ii) behavior of lender toward credit-constrained household and (iii) weighted least square estimation for impact on output supply.	The poor have difficulties in accessing credit facilities: livestock and farming land are determinants of household participation; reputation and amount of credit applied for to MFI are determinants of credit rationing by lenders. Impact estimation shows positive correlation between credit and output.

Study	Coverage (in Asia only)	Methodology	Results
Kaboski and Townsend (2002)	Thailand (production credit groups, rice banks, women groups, buffalo banks)	Two-staged LS and MLE test of microfinance impact on asset growth, probability of reduction in consumption in bad years, probability of becoming moneylender, probability of starting business and probability of changing job. Separate estimation according to type of MFI and policies of MFI.	Production credit groups and women groups combined with training and savings have positive impact on asset growth, although rice banks and buffalo banks have negative impacts. Emergency services, training and savings help to smooth responses to income shock. Women groups help reduce reliance on moneylenders.
Amin et al. (2003)	Bangladesh (Grameen Bank, BRAC, ASA)	1) Nonparametric test of stochastic dominance of average monthly consumption of members and nonmembers. 2) Maximum likelihood test of micro credit membership on vulnerability, consumption and household characteristics.	Members are poorer than nonmembers. Programs are more successful at reaching poor, but less successful at reaching vulnerable. Poor vulnerable are effectively excluded from membership.
Gertler et al. (2003)	Indonesia (Bank Rakyat Indonesia, Bank Kredit Desa, commercial banks)	1) Basic consumption-smoothing test on household's ability to perform daily living activities (ADL Index). 2) State dependence tests of basic regression (relative man-woman earning, physical job, savings). 2) Test of geographical proximity to financial institutions on consumption smoothing.	Significantly positive correlation between household's consumption and measure of health. Wealthier households are better insured against illness. Households that live far from financial institutions suffer more from sudden reductions in consumption.
Study	Coverage (in Asia only)	Methodology	Results

Khandker (2003)	Bangladesh (Grameen bank, BRAC, BRDB)	1) Fixed effect Tobit estimation of borrowing dependent on land education endowments of households. 2) Panel data fixed effects IV estimation to define long-term impact of micro finance borrowing on expenditure, non-land assets and poverty (moderate and extreme).	Households who are poor in landholding and formal education tend to participate more Micro finance helps to reduce extreme poverty much more than moderate poverty (18 percentage points as compared with 8.5 percentage points over 7 years). Welfare impact is also positive for all households, including non-participants, as there are spillover effects.
Pitt et al. (2003)	Bangladesh (BRAC, BRDB, Grameen Bank)	Maximum likelihood estimation controlling for endogeneity of individual participation and of the placement of microfinance programs. Impact variables are health of boys and girls (arm circumference, body mass index and height-for-age)	Significantly positive effect of female credit on height-for-age and arm circumference of both boys and girls. Borrowing by men has either negative or non-significant impact on health of children.

4. Poverty Impact

One of the early and most widely cited of the poverty impact studies is Hulme and Mosley (1996). This employed a control group approach looking at the changes in income for households in villages with microfinance programs and changes for similar households in non-program areas. Programs in a number of countries are considered including the Grameen Bank in Bangladesh and the Bank Rakyat Indonesia (BRI). In general a positive impact is found on borrower incomes of the poor (1988-92) with on average an increase over the control groups ranging from 10-12% in Indonesia, to around 30% in Bangladesh and India (Hulme and Mosley 1996, table 8.1). Gains are larger for non-poor borrowers, however, and within the group the poor gains are negatively correlated with income. However, despite the breadth of the study and its use of control group techniques, it has been criticized for a possible ‘placement’ bias, whereby microfinance programs may be drawn to better placed villages, so that part of the advantage relative to the control group may be due to this more favorable location. Further, the quality and accuracy of some of the data, particularly in relation to the representative nature of the control groups, has been questioned (Morduch 1999:1600).

Another major early initiative that has provided some of the firmest empirical work were the surveys conducted in the 1990s by the Bangladesh Institute of Development Studies (BIDS) and the World Bank; these provided the data for several major analyses, such as Pitt and Khandker (1998). Khandker (1998) summarizes a number of different studies conducted in Bangladesh using the 1991/92 survey and focusing on three major microfinance programs, including the Grameen Bank and the Bangladesh Rural Advancement Committee (BRAC). Methodologically impact is assessed using a double-difference approach between eligible and ineligible households (with land holdings of more than half an acre making households ineligible) and between program and non-program villages. After controlling for other factors, such as various household characteristics, any remaining difference was attributed to the microfinance programs. The study draws a number of conclusions, but the main one is that the program had a positive effect on household consumption, which was significantly greater for female borrowers. On average, a loan of 100 taka to a female borrower, after it is repaid, allows a net consumption increases of 18 taka. In terms of poverty impact it is estimated that 5% of participant households are pulled above the poverty line annually.

Khandker (2003) follows up this earlier work by employing panel data. He uses the BIDS—World Bank survey conducted in 1998-99 that traced the same households from the 1991-92 survey.⁷ He finds apparently strong and positive results. Whilst borrowing by males appears to have no significant impact on consumption, that by females, who are the dominant client group, does have a positive impact. From this analysis a 100 taka loan to a female client leads to a 10.5 taka increase in consumption (compared with 18 taka in the earlier analysis). Allowing for the impact of higher consumption on poverty gives estimates of poverty impact. It is estimated that due to participation in microfinance programs moderate poverty among program participants decreased 8.5 percentage points over the period of seven years and extreme poverty dropped about 18 points over the same period.⁸ He also finds evidence of positive spillovers on non-program participants in the villages with the impact greater for those in extreme poverty. Poverty for non-participants is found to decline by 1 percentage point due to the programs whilst extreme poverty declines by nearly 5 percentage points. This impact is due solely to female borrowing.

The same data set has also been used to identify health impacts as opposed to income changes. Pitt et al. (2003) find that credit going to females has a large and significant impact in two out of three health measures for children. Male borrowing has no such effect. For example, a 10% increase in credit to females increases the arm circumference of daughters by 6.3%, the height of girls by 0.36 cm annually and of boys by 0.50 cms. The relations are stronger for daughters than sons. Hence in Bangladesh, micro credit and improved family health appear to be related.

These are strong and positive results and probably are the clearest evidence there is that micro finance is working in the way intended to bring sustained relief from

⁷ Technically the study is rigorous in employing a two stage instrumental variable approach along with a household fixed-effects method to control for possible endogeneity bias, particularly for the fixed unobserved characteristics of households (that is the more entrepreneurial amongst the poor are those who borrow and these may do better anyway).

⁸ Poverty is based on a daily calorie intake of 2,112 and extreme poverty on one of 1,739.

poverty. However a couple of caveats are in order. First, the accuracy of the original results as presented in Pitt and Khandker (1998) has been disputed on the grounds that the eligibility criteria of low land holdings was not enforced strictly in practice. In a reworking of the results focusing on what are claimed to be more directly comparable households, no impact on consumption from participation in a program is found (Morduch 1999:1605).⁹ Second, in the BIDs-World Bank survey data, the ‘ultra poor’ (defined as those with less than 0.2 acres of land) form nearly 60% of participants and the likelihood of participation is strongly and negatively associated with level of land holding. Nonetheless, how much is borrowed depends principally on the entrepreneurship of households, so that the charge that the risk-averse very poor will benefit less has not been totally dispelled. Furthermore, the panel data reveal a relatively high dropout rate of around 30%, indicating that there were problems for many households.

There are examples of many other studies that are either inconclusive or provide less convincing results. Coleman (1999) and McNelly et al. (1996) both focus on experiences with village banking in Thailand. Coleman (1999) utilizes data on villages that had participated in village bank microfinance schemes and those control villages that were designated as participants, but had not yet participated. This allows a double difference approach that compares the difference between income for participants and non-participants in program villages with the same difference in the control villages, where the programs were introduced later. From the results here, the poverty impact of the schemes appears highly dubious. Months of village bank membership have no impact on any asset or income variables and there is no evidence that village bank loans were directed to productive purposes. The small sizes of loans mean that they were largely used for consumption, but one of the reasons there is a weak poverty impact is that there was a tendency for wealthier households to self-select into village banks.

Coleman (2004) uses the same survey data but reconsiders the estimation strategy to control for self-selection. He argues that the village bank methodology, which relies on self-selection by loan size and monitoring by frequent meetings, may not reach the poorest. As many wealthy households tend to be on village bank committees, the failure to control for this leads to systematic biases. The regression results of Coleman (2004) indicate that there is a substantial difference between ordinary members and committee members of village banks. The impact of micro credits on ordinary members’ well being is either insignificantly different from zero or negative. On the contrary, the impact of microfinance programs on committee members’ measures of wealth, such as income, savings, productive expenses and labor time is positive, implying a form of program capture by the better-off in the village, even though this group may not be well-off by national standards. A similar result in terms of rationing micro credit in favor of better-off groups or members is found by Doung and Izumida (2002) in a study of six villages in Viet Nam. There whilst credit availability is linked with production and income, household economic position and prestige in a

⁹ This debate, which in part centers around details of econometric estimation, has not been resolved. An unpublished paper by Pitt reworks the original analysis to address the concerns of Morduch and is said to confirm the original results (Khandker 2003, footnote 1).

village plus the amount of credit applied for are the main determinants of how credit is allocated.

MkNelly et al. (1996) evaluated the Freedom from Hunger credit with education program in Thailand operated through village banks. The results show positive benefits, however, although non-participants in non-program villages are used as controls, there are problems in accepting the results. No statistical tests are reported, so one cannot judge whether differences between participants and non-participants are significant. There is also a potential measurement bias since the staff responsible for the program also did the interviewing.

Chen and Snodgrass (2001) examine the operations of the Self Employed Women's Association (SEWA) bank in India, which provides low-income female clients in the informal sector with both saving and loan services. The study tests for the impact of these services by comparing the bank's clients against a randomly selected control group in a similar geographic area. Two surveys were conducted two years apart. Average incomes rose over time for all groups—borrowers, savers and the control—although the increase was less for the latter. In terms of poverty incidence there was little overall change, although there was substantial 'churning', in that amongst the clients of SEWA there was quite a lot of movement above or below the poverty line. In interpreting these results Meyer (2002) argues that the evidence on the counterfactual, that is what would have happened to the clients in the absence of the services of SEWA, is not sufficiently strongly established to draw any firm conclusions on poverty impact.

The smoothing of consumption over time to protect the poor against adverse shocks is one of the principle objectives of micro credit. Using data again for Bangladesh, Amin et al. (2003) compute several measures of vulnerability.¹⁰ They find that the micro credit participants in the two villages covered are more likely to be below the poverty line than if they had been selected at random, so that the programs have reached the poor. However, the vulnerable are more likely to join a micro credit program in only one of the two villages. Further, for the vulnerable below the poverty line in one village, there is no evidence that they are more likely to be members of a program, and in the other village there is evidence that they have either chosen not to join or are actively excluded, presumably on the grounds that they are a poor credit risk. Hence the very poor and vulnerable do not appear to be reached.

More positive conclusions in terms of the ability of micro finance to reduce vulnerability are found for Indonesia by Gertler et al. (2003), who find that access to micro finance helps households to smooth consumption in the face of declines in health of adult family members. Having established an empirical relationship between health condition and consumption, the authors test for a relation between access to a financial institution and consumption shortfalls associated with ill health. Using geographic distance as a measure of access, they find that for households in an area with a BRI

¹⁰ Unlike the Khandker studies this data picks up households before they joined a micro credit scheme. Their vulnerability measure is broader than simply fluctuations in consumption.

branch, health shocks have no effect on consumption.¹¹ This study does not differentiate within the group of the poor.

5. Forms of Micro Credit Interventions and Cost-effectiveness

Experimentation and local variation are likely to be important aspects of successful MFIs. A few studies have looked in detail at the impact and cost effectiveness of different forms of intervention. For example, Park and Ren (2001) look at the Chinese experience drawing on household survey data for 1997. They are able to compare three types of programs based on ownership characteristics—NGO-based, mixed programs and government ownership. Whether in terms of conventional financial criteria like repayment rates, or measures of initial impact like targeting effectiveness, the NGO programs appear to function best, with the government-run programs the least successful.

Detailed mechanisms for micro lending are examined for Thailand by Kaboski and Townsend (2003), who look at different institutional variants such as production credit groups, women's groups, rice banks and buffalo banks, as well as a variety of services included training and various savings facilities. Of the forms of institutions, allowing for a range of other factors, the women's groups appear to have the largest positive impact on their members. Of the services offered, training in conjunction with credit appears to work well and the availability of savings facilities appears to be associated with asset growth amongst households. Of the savings services, regular 'pledged savings' have the largest positive impact. Explanations offered for this include the use of savings as collateral for further loans either from the institution itself or from other sources, and a reduction in the cost and risk of infrequent deposits and withdrawals. However since the poorest may not be in a position of offer regular savings this also provides an explanation for why they may benefit relatively less from MFIs.¹²

Most studies of the impact of different forms of micro finance do not conduct a full cost effectiveness analysis in order to judge both the effectiveness of different alternatives and how microfinance interventions compare in efficiency terms with other ways of reaching the poor. However, there is often a general expectation that MFIs are an effective and efficient means of reaching the poor. For example, Wright (2000) argues that "...micro finance has a particular advantage over almost (and probably) all other interventions" in providing cost-effective and sustainable services to the poor.

The early work by Khandker (1998) attempts to assess the cost-effectiveness of micro credit in Bangladesh (that is costs per taka of consumption for the poor) as compared with more formal financial institutions and other poverty-targeted interventions. His data are summarized in Table 3. They appear to be based on the assumption of a zero leakage rate to the non-poor. The interesting result that emerges is that the Grameen Bank is considerably more effective than BRAC and that, as expected, loans to female borrowers are considerably more cost-effective than loans to males.

¹¹ Patten et al (2001) find evidence that the micro finance side of the Indonesian banking system performed much more robustly during the macro crises of the late 1990s than did the commercial banking sector.

¹² Fujita (2000) makes this point in the context of Bangladesh.

Further, subsidies to Grameen (but not to BRAC) appear to be a more cost effective means of reaching the poor than various ‘food for work’ programs. However, a ‘food for education’ scheme appeared to be very cost effective relative to the ‘food for work’ programs and to BRAC.¹³ Formal financial institutions are less cost-effective than Grameen for both female and male borrowers and less cost effective than BRAC in some, but not all, cases examined (Khandker 1998:134-139). The high figure for BRAC is in part due to the range of services, such as training, offered in addition to micro credit (see footnote 4), but nonetheless if such services are essential to the success of micro credit, including their cost in a cost-benefit assessment of micro credit is legitimate.

It is interesting to note that Khandker does not conclude from this that all subsidies to other poverty interventions should be withdrawn and reallocated to micro finance. Rather he points out that as participants to micro credit borrowing self-select (that is they judge that micro credit suits their particular needs, often for self employed work) others amongst the poor may not be able to benefit. For this latter group other forms of targeting will still be required.

Table 3. Cost Effectiveness Ratios^{a)}: Bangladesh in the early 1990s

Intervention	Female	Male	All borrowers
Grameen Bank	0.91	1.48	
BRAC	3.53	2.59	
Agricultural Development Bank (BKB) ^{b)}			4.88
Agricultural Development Bank (RAKUB) ^{c)}			3.26
Vulnerable Group Development			1.54
Food for Work (CARE) ^{d)}			2.62
Food for Work (World Food programme)			1.71
Food for Education ^{e)}			0.94 (1.79)

Source: Khandker (1998) Tables 7.2 and 7.3 and Wodon (1998)

Notes: a) Ratio of costs to income gains to the poor

b) Bangladesh Krishi Bank

c) Rajshahi Krishi Unnayan Bank

d) Run by CARE on behalf of USAID

e) Source for this data is Wodon (1998); figure in brackets is the cost effectiveness ratio for the very poor.

The above data provide ambiguous support for the idea that micro finance is a cost-effective means of generating income for the poor. The figures for Grameen support this view, whilst those for BRAC do not. More recently a couple of other

¹³ The study on this scheme by Wodon (1998) appears considerably more sophisticated than the other studies and compares costs with the future stream of estimated benefits to the poor in terms of gains from education. The ratio for this activity may not be directly comparable with the other figures in the table.

estimates have become available. Burgess and Pande (2003) examine whether the pattern of commercial bank expansion in India into rural areas, previously not served by banks, has had an impact on rural poverty and their work allows a simple comparison with micro finance. Their estimates suggest that it costs 2.72 rupees to generate an additional rupee of income for the poor via social banking programs. Compared with the data in Table 3 this ratio is higher than the cost-effectiveness ratio for Grameen, but lower than that for BRAC.¹⁴

A further look at the effectiveness of Grameen is provided by Schreiner (2003), who calculates the subsidy-lending ratio at 0.22 over the period 1983-97. This is not directly equivalent to the ratios in Table 3, but assuming the same return to borrowing as in Khandker (1998) these figures can be converted into a broadly equivalent ratio of cost to gains to the poor of 1.15. This is consistent with the figures in Table 3, which would need to be averaged to give an overall return to male and female borrowing combined. The result confirms Grameen as a relatively cost-effective form of poverty intervention, although it says nothing about how the benefits from its activities are distributed between the poor, the very poor and those above the poverty line.

6. Conclusions

Despite the extensive spread of micro finance, research studies on the actual impact of MFIs are often more ambivalent about its impact than is the aid community. In part this reflects the methodological problems of establishing appropriate statistical controls and in part no doubt also the range of variation found in practice in the way in which micro finance operates. Our view is that, despite the difficulties, more good poverty impact studies are important to sharpen understanding of its role as an anti-poverty tool, to assess its impact in different environments and to shape the debate on ways forward for MFIs.

Amongst practitioners there is widespread acceptance of the view that it is both necessary to diversify the products of micro finance and adapt them to local circumstances. Any simple replication of formulae successful elsewhere is rightly treated with suspicion. However the evidence surveyed here suggests that the conclusion from the early literature, that whilst micro finance clearly may have had positive impacts on poverty it is unlikely to be a simple panacea for reaching the core poor, remains broadly valid. Reaching the core poor is difficult and some of the reasons that made them difficult to reach with conventional financial instruments mean that they may also be high risk and therefore unattractive microfinance clients.

There has been an extensive debate, which we do not touch on here, on the financial sustainability of MFIs. We would simply make the point that just because an institution needs a subsidy to cover its costs in itself is not a reason for not supporting the institution. The issue should be, what benefits in terms of income gains for the poor can be achieved with the subsidy and how does the ratio of subsidy to benefits compare with that for other interventions. Detailed cost effectiveness studies are rare and those that are available show both high and low scores for MFIs in the same country. Hence

¹⁴ It should be noted that the benefits from Grameen lending found in Khandker (2003), which are almost half of those found in his earlier study, imply considerably higher cost effectiveness ratios to those reported in Table 3, unless there has been a corresponding rise in the efficiency of operations.

there is a need to continually improve design and outreach and to see MFIs as part of the package for targeting the poor, rather than the whole solution.

Our view is that despite the difficulties, poverty impact studies of MFIs can provide important information and that continued efforts should be made to sharpen understanding of the impacts of different forms of MFI activity on the poor, including their cost-effectiveness.

References

- Amin S., Rai A.S., Ropa G. (2003). "Does Microcredit Reach the Poor and Vulnerable? Evidence from Northern Bangladesh," *Journal of Development Economics*, vol. 70, pp. 59-82.
- Burgess, R and Pande, R. (2003). "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment," The Suntory Centre, Suntory and Toyota International Centres for Economics and Related Disciplines, Discussion Paper No. DEDPS/40, London School of Economics and Political Science.
- Chen, M.A. and Snodgrass, D. (2001). Managing Resources, Activities, and Risk in Urban India: the Impact of SEWA Bank. Washington D.C.: AIMS. September, 2001.
- Coleman, B.E. (1999). "The Impact of Group Lending in Northeast Thailand," *Journal of Development Economics*, vol. 60, pp. 105-141.
- Coleman, B.E. (2001). "Measuring Impact of Microfinance Programs," *Finance for the Poor*, Asian Development Bank, December 2001, Vol. 2 Number 4, pp. 5-7.
- Coleman, B.E. (2004). "Microfinance in Northeast Thailand: Who Benefits and How Much?" *World Development*, forthcoming.
- Duong, Ph.B. and Izumida Y. (2002). "Rural Development Finance in Viet Nam: a Microeconomic Analysis of Household Surveys," *World Development*, vol. 30, no. 2, pp. 319-335.
- Fernando, N. (2003). "Transformation of NGOs into Regulated Financial Institutions: Expectations Fulfilled?" Paper presented at ADBI Annual Conference, *Microfinance in Asia: Poverty Impact and Outreach to the Poor*, Dec 5, 2003, Tokyo.
- Fujita, K. (2000). "Credit Flowing from the Poor to the Rich: The Financial Market and the Role of Grameen Bank in Rural Bangladesh," *The Developing Economies*, vol. 38, pp. 343-373.
- Gertler, P., Levine, D.I., Moreti, E. (2003). "Do Microfinance Programs Help Families Insure Consumption against Illness?" University of California, Berkeley, Center for International Development Economics Research (CIDER), Working Paper no C03-129.
- Hulme, D. and Mosley, P. (1996). *Finance Against Poverty*, Vols. 1 and 2, Routledge: London. 1996.
- Hulme, D (1999). "Impact Assessment Methodologies for Microfinance: Theory, Experience and Better Practice," Finance and Development Research Program, Working Paper no. 1, IDPM, University of Manchester.

- Kaboski, J. and Townsend, R. (2002). Policies and Impact: An Analysis of Village-Level Microfinance Institutions, Mimeo University of Chicago.
- Khandker, S. (1998). *Fighting Poverty with Microcredit: Experience from Bangladesh*, New York: Oxford University Press for the World Bank.
- Khandker, S. (2003). "Micro finance and Poverty: Evidence Using Panel Data from Bangladesh," World Bank Policy Research Paper 2945, World Bank, Washington.
- Lapenu, C. and Zeller, M. (2001). "Distribution, Growth and Performance of Microfinance Institutions in Africa, Asia and Latin America," Food Consumption and Nutrition Division Discussion Paper No.114, International Food Policy Research Institute. June 2001.
- Matin and Hulme, D. (2003). "Programs for the Poorest: Learning from the IGVGD Program in Bangladesh," World Development, Vol. 31, No. 3, pp. 647-665.
- Meyer, R.L. (2002). "Track Record of Financial Institutions in Assisting the Poor in Asia," Asian Development Bank Institute Research Paper 49, ADB Institute, December, 2002.
- MkNelly, B. Watetip, C., Lassen, C.A. and Dunford, C. (1996). Preliminary Evidence that Integrated Financial and Educational Services Can Be Effective against Hunger and Malnutrition. Freedom From Hunger Research Paper No. 2. Freedom From Hunger. April, 1996.
- Morduch, J. (1999). "The Microfinance Promise" *Journal of Economic Literature*, XXXVII December, pp. 1569-1614.
- Morduch, J. (2003). "Can the Poor Pay More? Microfinance and Returns to Capital in Indonesia," mimeo.
- Park, A. and Ren, C. (2001). "Microfinance with Chinese Characteristics," *World Development*, Vol. 29, No.1, pp.39-62.
- Patten, R.H, Rosengard, J.K and Johnson, D.E (2001). "Microfinance Success amidst Macro Economic Failure: The Experience of Bank Rakyat Indonesia during the East Asian Crisis," *World Development*, Vol. 29, No. 6, pp. 1057-1069.
- Pitt, M.M. and Khandker, S (1998). "The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?" *Journal of Political Economy*, Vol. 2, pp. 958-977.
- Pitt, M.M., Khankder Sh.R., Chowdhury, O.H., Millimet, D.L. (2003). "Credit Programs for the Poor and the Health Status of Children in Rural Bangladesh," *International Economic Review*, vol. 44, no. 1, pp. 87-118.
- Rutherford, S. (2000). *Money Talks: Conversations with Poor Households in Bangladesh about Managing Money*, at IDPM Website www.man.ac.uk/idpm.

- Rutherford, S. (2003). "Microfinance's Evolving Ideals: How They Were Formed and Why They're Changing," Paper presented at ADBI Annual Conference, *Microfinance in Asia: Poverty Impact and Outreach to the Poor*, Dec 5, 2003, Tokyo.
- Schreiner, M. (2003). "A Cost-Effectiveness Analysis of the Grameen Bank of Bangladesh," *Development Policy Review*, Vol. 21, No. 3, pp. 357-382.
- Wodon, Q.T. (1998). "Cost-Benefit Analysis of Food for Education in Bangladesh," Background paper for the poverty assessment of Bangladesh at the World Bank, Mimeo, World Bank, April 1998.
- World Bank (2000). *World Development Report 2000/01: Attacking Poverty*, World Bank, Washington.
- Wright, G.A.N. (2000). *Microfinance Systems. Designing Quality Financial Services for the Poor*, The University Press Limited, Dhaka, Bangladesh.
- Zeller, M and Meyer, R.L., eds., (2002). *The Triangle of Microfinance: Financial Sustainability, Outreach and Impact*, John Hopkins for the International Food Policy Research Institute, Baltimore.