Micro-finance and poverty reduction in Asia: what is the evidence?

Elvira Kurmanalieva, Heather Montgomery and John Weiss*

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* The authors are, respectively, Research Associate, Research Fellow and Research Director, at ADBI.
Introduction

The micro-finance 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 microfinance:

“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 micro-finance development.” (Zeller and Meyer 2002).

This is a very strong statement of doubt and in part reflects 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 micro finance initiatives have made a lasting difference in pulling households out of poverty on a permanent basis;
- the extent to which micro finance 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.

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 micro-finance activities in Asia, which is our region of focus. The second discusses a few concepts from the poverty literature and links these with micro-finance 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.

**Some features of micro finance in Asia**

“Asia is the most developed continent in the world in terms of volume of MFI (micro finance institution) activities”. This conclusion, drawn by Lapeneu and Zeller (2001:27), is based on 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 sheer 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 Vietnam. In contrast, the two most populated

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 writing (around 2001). Morduch (1999) is an extremely authoritative earlier survey focusing on both conceptual and empirical questions.
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 microfinance has flourished in Asia. Compared to other regions, MFIs in Asia exhibit good outreach and high repayment rates\(^2\). In contrast to their African and Latin American counterparts, Asian MFIs are relatively successful in meeting the needs of rural populations. The largest MFIs operating in Asia: Indonesia’s BRI-UD, BAAC in Thailand, the Grameen Bank and BRAC in Bangladesh and the VBSP in Vietnam work in rural areas either exclusively or in combination with urban areas.

<table>
<thead>
<tr>
<th>Table 1: Outreach Indicators by Region</th>
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<tbody>
<tr>
<td>Number of Active Borrowers</td>
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<tr>
<td>Africa</td>
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<tr>
<td>Asia</td>
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<tr>
<td>Eastern Europe/Central Asia</td>
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<tr>
<td>Latin America</td>
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<td>Middle East/North Africa</td>
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</table>

Source: Microbanking Bulletin Issue #9, July 2003

Table 1 above presents the most recent data from the Microbanking Bulletin, which reports only data on the limited number of MFIs who choose to supply the Bulletin. Those reporting to the Bulletin are thought to be amongst the best and are therefore unlikely to

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be representative. (Meyer 2002: 14). Nonetheless amongst these, by various measures, Asian MFIs demonstrate relatively good outreach. Asian MFIs account for the largest number of borrowers (70% of which are women) and are second 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 this 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.

The institutions that provide microfinance and the method used to deliver microfinance products take a variety of forms and we see almost all of these varieties within Asia.

The lending methodology of MFIs can be categorized as cooperatives, village banks, and lending to solidarity groups or individuals. Cooperatives and village banks generally focus on savings. Village banks almost always remain small in scale. Cooperatives generally tend to be quite large, although many institutions in Central Asia follow what might be called the “traditional model” and are quite small. Institutions that focus on solidarity group lending, as made famous by the original Grameen Bank in Bangladesh, also generally have trouble growing to large scale. Asia is the exception. The BAAC in Thailand, the Grameen Bank, BRAC, PROSHIKA and ASA in Bangladesh, Friends of Women’s World Banking in India, the Vietnam Bank for Social Policies in Vietnam and P4K in Indonesia all have more than 300,000 members. Institutions engaged in individual lending, which can be difficult in countries with low income and low population densities, also tend to be small. But again, Asia is the exception. Indonesia’s BRI-UD in Indonesia has 18 million members and Vietnam’s Bank for Social Policies has 4 million members. Both are engaged in individual lending.

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 micro finance services in collaboration.
with NGOs or credit co-operatives. NGOs are very active in Bangladesh, Nepal, Sri Lanka and the Philippines. Government organizations are particularly important in India, Indonesia, Vietnam and PRC.

**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 (that is how far households are below the poverty line) with those significantly below it representing the ‘core poor’, 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 one of 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 have thus to rely on loans from either money-lenders at high interest rates or friends and family, whose supply of funds will be limited. Micro finance 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 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 that can be drawn on. The avoidance of sharp declines in family expenditures by drawing on such credit or savings allows ‘consumption smoothing.’ In practice this 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 for investment in the future) and will therefore be only a very limited beneficiary of micro-finance 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

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 biases their results in favor of their conclusion.
issue refers to the interest rates charged to poor borrowers. Most micro finance 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, the very poor may be excluded by other members of the group, 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.

Even where micro-finance does reach the core poor, when (as in many instances) donor or government funds are required to subsidize the micro-finance 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).

Assessing the true relationship between micro-finance 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. This requires empirically 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.\textsuperscript{4} 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. Table 2 summarizes the results of the relatively recent poverty impact studies surveyed here.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|l|l|}
\hline
\textbf{Study} & \textbf{Coverage (in Asia only)} & \textbf{Methodology} & \textbf{Results} \\
\hline
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. \\
\hline
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. \\
\hline
\end{tabular}
\caption{Microfinance impact studies}
\end{table}

\textsuperscript{4} 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.
<table>
<thead>
<tr>
<th>Study</th>
<th>Country/Region</th>
<th>Study Design</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>Khandker (1998)</td>
<td>Bangladesh (Grameen, BRAC)</td>
<td>Comparison between eligible and ineligible households and between program and non-program villages</td>
<td>5% of participant households removed from poverty annually. Additional consumption of 18 taka for every 100 taka of loan taken out by women.</td>
</tr>
<tr>
<td>Pitt and Khandker (1998)</td>
<td>Bangladesh (BRAC, BRDB, Grameen Bank)</td>
<td>Difference-in-difference estimation between eligible and non-eligible households and programs with and without microfinance programs. Estimations are conducted separately for male and female borrowings.</td>
<td>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.</td>
</tr>
<tr>
<td>Coleman (1999)</td>
<td>Thailand (village banks)</td>
<td>Comparison between participant and non-participant households and between villages in which program introduced and villages where not yet introduced</td>
<td>No evidence of program impact. Village bank membership no impact on asset or income variables.</td>
</tr>
<tr>
<td>Chen and Snodgrass (2001)</td>
<td>India (SEWA bank)</td>
<td>Control group from same geographic area</td>
<td>Average income increase rose for bank’s clients in comparison with control group. Little overall change in incidence of poverty, but substantial movement above and below poverty line.</td>
</tr>
<tr>
<td>Coleman (2001)</td>
<td>Thailand (village banks)</td>
<td>Difference-in-difference estimation between</td>
<td>Programs are not reaching the poor as much as they reach</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Country/Programs</td>
<td>Methodology</td>
<td>Findings</td>
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<tr>
<td>Park and Ren (2001)</td>
<td>China (NGOs, government programs, mixed NGO-government programs)</td>
<td>(i) Probit estimation of participation and eligibility for each type of program; (ii) OLS and IV estimation of impact of microcredit on household income</td>
<td>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 microcredit on income.</td>
</tr>
<tr>
<td>Duong and Izumida (2002)</td>
<td>Vietnam (VBA 84% of total lending), VBP, PCFs, commercial banks, public funds)</td>
<td>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.</td>
<td>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 showed positive correlation between credit and output.</td>
</tr>
<tr>
<td>Kaboski and Townsend (2002)</td>
<td>Thailand (production credit groups, rice banks, women groups, buffalo banks)</td>
<td>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</td>
<td>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 to reduce reliance on moneylenders.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Location</td>
<td>MFI</td>
<td>Methods</td>
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<td>Amin et al. (2003)</td>
<td>Bangladesh (Grameen Bank, BRAC, ASA)</td>
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<td>1) Nonparametric test of stochastic dominance of average monthly consumption of members and nonmembers 2) Maximum likelihood test of microcredit membership on vulnerability, consumption and household characteristics.</td>
</tr>
<tr>
<td>Gertler et al. (2003)</td>
<td>Indonesia (Bank Rakyat Indonesia, Bank Kredit Desa, commercial banks)</td>
<td></td>
<td>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</td>
</tr>
<tr>
<td>Khandker (2003)</td>
<td>Bangladesh (Grameen bank, BRAC, BRDB)</td>
<td></td>
<td>1) Fixed effect Tobit estimation of borrowing dependent on land education endowments of households. 2) Panel data fixed effects</td>
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</tbody>
</table>
IV estimation to define long-term impact of microfinance borrowing on expenditure, non-land assets and poverty (moderate and extreme) is also positive for all households, including non-participants. Microfinance has spillover effects in local economies by increasing local village welfare.

| 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. |

**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 micro-finance 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 possible ‘placement’ bias, whereby micro-finance 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 1990’s 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 micro-finance 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 holdings of land 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 micro-finance 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. 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

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5 Technically the study is rigorous employing a two stage instrumental variable approach along with a household fixed-effects method to control for possible endogeneity bias, particularly the fixed unobserved characteristics of households (ie the more entrepreneurial amongst the poor are those who borrow and these may do better anyway).
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.\textsuperscript{6} 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\%. A 10\% increase in female credit on average increases 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 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).\textsuperscript{7} 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.

\textsuperscript{6} Poverty is based on a calorie intake of 2112 and extreme poverty on one of 1739.
\textsuperscript{7} This debate, which in part centres 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).
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 reveals a relatively high drop-out 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 MkNelly et al (1996) both focus on experiences with village banking in Thailand. Coleman (1999) utilizes data on villages that had participated in village bank micro finance 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 (2002) 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 (2002) indicate that there is 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 Vietnam. There whilst credit availability is linked with production and income household economic position and prestige in a 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 providing 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.\(^8\) They find that the micro credit

\(^8\) 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.
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 there 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 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 branch health shocks have no effect on consumption. This study does not differentiate within the group of the poor.

**Forms of micro credit interventions and cost-effectiveness.**

It is clear that 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 program 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

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9 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 1990’s than did the commercial banking sector.
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 institution, allowing for a range of other factors, 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.  

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 micro finance 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 “...microfinance 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. 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

10 Fujita (2000) makes this point in the context of Bangladesh
education scheme appeared very cost-effective relative to the food for work programs and to BRAC.\textsuperscript{11} Formal financial institutions are less cost-effective than Grameen for both female and male borrowers and less cost effective than BRAC in some, both not all, cases examined (Khandker 1998:134-139). 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 these other forms of targeting will still be required.

Table 3 Cost effectiveness ratios\textsuperscript{a}: Bangladesh early 1990’s

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Female</th>
<th>Male</th>
<th>All borrowers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grameen Bank</td>
<td>0.91</td>
<td>1.48</td>
<td></td>
</tr>
<tr>
<td>BRAC</td>
<td>3.53</td>
<td>2.59</td>
<td></td>
</tr>
<tr>
<td>Agricultural Development bank (BKB)\textsuperscript{b}</td>
<td></td>
<td></td>
<td>4.88</td>
</tr>
<tr>
<td>Agricultural Development bank (RAKUB)\textsuperscript{c}</td>
<td></td>
<td></td>
<td>3.26</td>
</tr>
<tr>
<td>Vulnerable Group Development</td>
<td></td>
<td></td>
<td>1.54</td>
</tr>
<tr>
<td>Food for Work (CARE)\textsuperscript{d}</td>
<td></td>
<td></td>
<td>2.62</td>
</tr>
<tr>
<td>Food for Work (World Food programme)</td>
<td></td>
<td></td>
<td>1.71</td>
</tr>
<tr>
<td>Food for Education\textsuperscript{e}</td>
<td></td>
<td></td>
<td>0.94 (1.79)</td>
</tr>
</tbody>
</table>


\textsuperscript{11} 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.
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 estimates are available. Burgess and Pande (2003) examine whether the pattern of commercial bank expansion in India into rural areas, previously not served by banks, has impacted on rural poverty and their work allows a simple comparison with microfinance. Their estimates suggest that it costs 2.72 rupees to generate an additional rupee of income for the poor via social banking program. Compared with the data in table 3 this ratio is higher than the cost-effectiveness ratio for Grameen, but lower than that for BRAC.

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.

**Conclusions**

Despite the extensive spread of microfinance, 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.

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 micro finance clients.

There has been an extensive debate that 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 would be what benefits in terms of income gains for the poor can be achieved with the subsidy and how the ratio of subsidy to benefits compares with that for other interventions. Detailed cost effectiveness studies are rare and those that are available show both high and low score for MFIs in the same country. 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.
Bibliography


