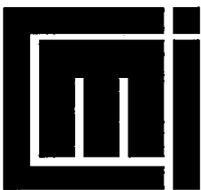


# **Microcredit programmes: Methods for solving dilemmas of credit expansion**

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**Summary:**

Providing credits seems to be an effective tool for improving the welfare of the poor. It is expected that microcredit funding to poor people will expand rapidly over the coming years. If a sound monitoring mechanism is not developed, Wiig argues that such a credit expansion may create unintended negative effects.

Based on a Grameen Bank study, three problems or dilemmas related to credit expansion are analysed: (i) Does a larger supply of microcredit increase the possibility of cross-financing? (ii) Does capital deepening tend to favour the best ("richest") of the poor? (iii) Does economic success lead to poor repayment behaviour?

Survey methods revealing the extent of these problems are presented. It is argued that some of these methods should be replicated by the implementing agencies to improve the effectiveness of credit provision to the poor.

**Indexing terms:**

Microcredit  
Poverty  
Development banks  
Grameen Bank  
Bangladesh

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# 1. Introduction<sup>1</sup>

With the signing of the Microcredit Summit declaration and other initiatives, it is expected that microcredit funding to poor people will expand rapidly over the coming years. This expansion in microcredit will first of all take the form of capital widening, i.e. the creation of new institutions supplying microcredit or existing institutions lending to new customers. However, credit expansion also involves capital deepening, i.e. additional credit to current borrowers from existing institutions. These two forms of credit expansion are interlinked. New credit institutions initially expand their credit through capital widening, while capital deepening becomes more important over time.

On the basis of a Grameen Bank (GB) study undertaken in 1995,<sup>2</sup> this paper will explore survey methods which may reveal whether such microcredit expansion is viable in the long run. Particular attention is given to the respective viabilities of the provider and the borrower.

The GB study focused on two problems which are common to most credit schemes and are probably most significant in a capital deepening process. The first is whether the credit contributed towards increasing outstanding debt, referred to as *credit escalation*. The second is whether additional borrowing was motivated by the need to service existing loans, referred to as *cross-financing*. With a clientele of poor borrowers, we needed specially designed methodologies, both quantitative and qualitative, to monitor such processes and assess their impact. Cross-financing deserves particular attention because, under conditions of steadily increasing supply of microcredit, it is methodologically difficult to reveal whether cross-financing occurs. If cross-financing occurs on a large scale, it may lead to a collapse of institutions when foreign donors withdraw their subsidies from such activities. The risk is that the whole idea of providing microcredit for the poor will then be questioned. In the process of considering withdrawing part of its aid to Grameen Bank, the Norwegian Agency for Development Cooperation (NORAD) was worried about such a scenario and commissioned the study referred to above.

From the findings of the GB study, I focus on three dilemmas it identified. Firstly, *an increased supply of microcredit will heighten the possibility of cross-financing*. An increased supply of credit could arise from capital deepening or widening or a combination of these. Secondly, *capital deepening tends to favour the richest of the poor* - not the poorest of the poor, which is the main target group of microcredit institutions. Thirdly, *economic success may lead to poor repayment behaviour*. Rich borrowers are not always the best borrowers from the point of view of a microcredit institution's financial viability. The paper discusses the possibility of distinguishing between 'good' and 'bad' borrowers. With such a screening method, it would be possible for an *implementing agency to target specific credit packages on different types of borrowers*.

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<sup>1</sup> This paper was initially prepared as an input for the Consultative Group for Assisting the Poorest (CGAP) working group on Impact Assessment Methodology's Virtual Conference in April 1997. A grant was obtained from the Royal Norwegian Ministry of Foreign Affairs. I am indebted to Karin Ask, Alf Morten Jerve, Rashid Sumaila, Richard Morsom as well as the participants in the Virtual Conference for valuable comments on an earlier draft.

<sup>2</sup> Ask K., A. Wiig and E. Sigvaldsen. 1997. "Repayment of old loans through new loans. Is cross-financing a problem for the Grameen Bank?" Chr. Michelsen Institute, Bergen, Norway (R5:1997).

The GB case is important, not only because of the role of GB as a model institution, but because it is a mature microcredit institution which during recent years has experienced a tremendous growth in loan disbursement. There are reasons to believe that the problems experienced by GB may be repeated by other credit institutions in the future in their drive to increase credit to the poor. As the Summit's goal is put into practice, these problems may be serious if sound monitoring mechanisms are not developed.

Neither the credit provider nor a social scientist can pick good projects. What they can provide the borrower is a well functioning institutional system taking into account the incentive effects of different institutional arrangements on the borrower's decisions, as reflected in the dilemmas above. The focus of this paper is, however, on types of survey methods that can be applied to collect information on the extent of these dilemmas, and on the extent to which these methods can be adopted by an implementing institution. I will comment only briefly on issues of programme design and implementation.

In section 2, I will start by presenting the GB study and its approach with respect to credit escalation and cross-financing. The following three sections elaborate on the three dilemmas above. Section 3 summarizes the analyses of the extent of cross-financing at an aggregate level. Section 4 analyses the escalation of credits at an individual level and which borrowers have escalated their credits. Section 5 analyses variations in repayment performance between different groups of borrowers. Each section covers firstly an elaboration of the dilemma; secondly, statistical approaches dealing with the dilemma; and thirdly, whether the approaches can be adopted by implementing agencies. In section 6, I conclude by drawing attention to the particular problem of old borrowers (longtime current borrowers).

## 2. Organisation of the GB study and some lessons

The questions addressed in the GB study required both *quantitative* and *qualitative* research methodologies to assess both the *extent* of the problems of credit escalation and cross-financing and the *nature* of the financial decision-making taking place within the framework of GB member households. Accordingly, the study was organised in the form of a quantitative survey managed by myself, an economist by training, and a qualitative survey managed by my colleague, Karin Ask, a social anthropologist. Part of the qualitative survey preceded the quantitative survey and provided an input into the design of the quantitative survey.<sup>3</sup>

The quantitative survey was a formal questionnaire survey of GB member households within five GB branches under two zonal offices - Tangail and Rangpur. The respondents were GB members present at the time the study team visited the different GB centres. Both the five branches and the centres visited (five in each branch) were chosen by random

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<sup>3</sup> The Bangladesh Institute of Development Studies (BIDS), with which CMI has enjoyed long-standing cooperation, collected the data for the quantitative survey. A strength in the methodological approach is the combined approach of quantitative and qualitative data gathering. However, budget constraints made it difficult to exploit this opportunity fully. Unexpected extra expenses are commonly incurred in comparing and integrating the figures collected by different research methodologies.

sampling. At each centre the team selected six respondents (with a few exceptions) among those who were accessible. In this way, the survey included 298 households - 148 in Tangail and 150 in Rangpur. The main objective of the quantitative survey was to generate data on the relations between loan portfolios and repayment liabilities. The quantitative survey also looked at differences in households' approaches to servicing of loans.

The qualitative survey used a semi-structured questionnaire to establish data on economic activities and strategies in 85 individual households in Tangail and 40 in Mymensingh. In addition, for comparison of data from the two sets of sources, 10 respondents were interviewed in Rangpur. We made a preliminary test of the questionnaire in Dhaka zone. The empirical focus of the qualitative survey was the economic strategies of the borrowers, i.e. their income generating activities, saving patterns, patterns of expenditure, and the manner in which these strategies are influenced by the decision-making processes of the household.

Additional information was gathered through conversations with GB staff at different levels and from a literature review. While visiting zonal offices in Rangpur, Dhaka, Tangail and Mymensing, we also had group discussions with borrowers at centre meetings.

On issues related to savings behaviour, several respondents declined to report their savings outside the GB, whether in cash or kind. In addition, we are sceptical about putting too much emphasis on the figures of gross and net income from projects funded by GB, partly because a typical household was involved in various activities financed by several different sources. It was therefore difficult to measure income generation from a particular GB project. Based on this observation, the analyses in sections 4 and 5 are based on data for assets rather than on income figures.

In the terminology of Sebstad et.al. (1995),<sup>4</sup> the study was based on a *one time shot*. It was not based on time series, except for the respondent's recall of previous weekly payments to GB and some other variables. The surveys did not include any reference or *comparison group* outside the GB system, since the main object of the study was cross-financing, not whether GB members perform better than non-members. By analysing regional differences, where we distinguished between old and new GB regions, development over time was indirectly incorporated in the study.

### **3 Increased supply of credits may lead to cross-financing**

It is generally assumed that there is a close relationship between the viability of the provider of credits and the viability of the borrower. This may direct the focus of analysis

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<sup>4</sup>Sebstad J., C. Neill, C. Barnes and G. Chen. 1995. Assessing the impacts of microenterprise interventions. A framework for analysis. USAID Managing for Results, Working paper no 7. Center for Development Information and Evaluation.

either to the borrower (intended beneficiary school) or to the provider (intermediate school).

According to Hulme (1997)<sup>5</sup> the intermediate school, mainly focuses on institutional outreach and institutional sustainability while analysing impacts of rural financial institutions (see Yaron, Benjamin and Piprek 1997).<sup>6</sup> If outreach and institutional sustainability are enhanced, the viability of the borrower is assumed to have improved.

From our GB study, however, we established that the viability of the microcredit institution (MFI) is neither a necessary nor a sufficient condition for the viability of the borrower or vice versa (at least in the medium term). Borrowers may use several sources for repayment (e.g. other loans, own assets, income from other projects or members of the household). Where the MFI has strict monitoring mechanisms and borrowers have access to several sources for funding, the financial viability of the MFI is high while the viability of the borrower is low. Only focusing on institutional viability is therefore misleading. In section 5 we argue that the polar case, only focusing on the welfare effects on poor clients, is also misleading. Both client and provider aspects need to be taken into account when analysing impacts.

### **3.1 Elaboration of the dilemma and some indicators**

The viability of any credit institution ultimately depends on the rate of repayment among its borrowers. Many factors influence this rate, but in essence it is a function of two particular factors: the borrowers' financial ability to repay and the credit institution's ability to enforce repayment discipline. GB is regarded as a success on both counts. Studies show that GB borrowers in general have improved their economic well-being, and GB reports a very high repayment ratio. The latter has to a large extent been attributed to the core principles of the GB-model, namely *group-based lending and peer monitoring*. The monitoring undertaken by the group members is, according to Stiglitz (1990), largely responsible for the successful financial performance of GB.<sup>7</sup>

There has, however, been growing concern that the high repayment ratio may partly be sustained through increased borrowing. The availability of credit for poor people in Bangladesh has improved dramatically over the last decade. GB has rapidly expanded its membership, and so have several NGOs providing credit. In addition, the informal credit market is still very much alive.

Borrowing from several sources is not a new practice in Bangladesh and the internal family economy is basically a cash economy where money is raised from whatever source is available, according to the daily needs. Borrowing to repay another loan is thus obviously not something that GB has introduced to rural Bangladesh: it has been there for

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<sup>5</sup>Hulme, D. 1997. Impact assessment methodologies for microfinance: A review. Discussion paper. CGAP working group on impact assessment methodologies.

<sup>6</sup>Yaron, J.,M. Benjamin and G.Piprek. 1997. Rural finance: Issues, design and best practices, Washington DC: Agriculture and Natural Resources Department, World Bank

<sup>7</sup>Stiglitz, J. 1990. "Peer monitoring and credit markets" The World Bank Economic Review, vol. 4, no. 3, p 351.

a long period and is also a practice common in developed countries. Some cross-financing will always happen in connection with seasonal fluctuations in income and other events requiring quick money. Cross-financing is therefore not always bad. In general terms, cross-financing becomes a problem when the borrower does not have the capacity to repay and service the total outstanding debt.

The borrower faces several dangers by engaging in cross-financing. Cross-financing depletes the capital of the loan, and reduces the value of the new loan that is used to repay or service the old. It can turn into a vicious circle as smaller and smaller investments yield less and less return, thus necessitating even higher loans the next time around to repay the original loan. It cuts away the profit from whatever activity the borrower has undertaken, especially if a high interest loan is taken, e.g. from local money lenders.

The practice can be sustained for some time through taking more loans to repay ever higher debt obligations, especially at a time where available credits from various sources increase. However, it is doomed to collapse sooner or later, especially when the supply of credit shrinks. The bank is then left with a defaulted loan and a borrower in high debt, possibly in a situation even worse than when the person joined the credit institution. It is very difficult to assess the moment at which borrowing from several sources crosses the boundary from being acceptable "overdraft" financing, to being a problem.

Due to imperfect information, microcredit institutions may allow members to borrow more than they can repay. The checking of loan usage has always been difficult, but appears even more difficult in times of credit widening and deepening. The number of members per centre in the GB system has been raised from 30 to 40, while the average borrower has generally increased both the number of loans and the size of each loan. The result may be a reduction of the *monitoring capability* of GB. If the monitoring undertaken by the group is not influenced by credit escalation or the introduction of additional types of loans, such a reduction is, however, not a serious threat. Our study has little information on these issues.

### **3.1.1 Indicators of credit escalation and cross-financing**

We analysed the loan portfolio (general loans, seasonal loans, housing loans, loans from group funds, and tube-well loans) of the GB members covered by the quantitative survey. *Disbursements* and *outstanding amounts* for each type of loan were averaged for all respondents. Comparing loans disbursed with outstanding loans (*outstanding in percentage of disbursed*) gave us an indication of the extent of credit escalation, or in other words the extent to which GB members enter new loan obligations before full repayment of previous loans. Since we did not collect a time series of outstanding loans, our reference point was regional variation in outstanding loans as a percentage of disbursements. This share was generally higher among respondents in regions/branches where GB had been involved for a long period. The credit escalation documented in old branches was mainly found to be the result of the introduction of *new types of loans* (such as housing loans) to old borrowers (a capital deepening process).

While outstanding loans and the number of active loans are treated as static variables, and time dynamics are only indirectly treated by the concept of new and old borrowers/zones, our final indicator of credit escalation was a dynamic one. The respondent's weekly

payments at the time she joined GB, one year ago and currently were collected. A tremendous increase in weekly payments was found, indicating that an increasing proportion of their income was used for repaying GB.

We also analysed two different sources for cross-financing.

### 3.1.2 Indicators of sources for cross-financing: Access to outside sources or additional types of loans

In general, there are two ways that cross-financing can take place: either by combining different types of loans from one particular microcredit institution, or by combining an internal loan with an outside source (loans from other microcredit institutions, friends or moneylenders). In the GB context the two options were therefore:

#### *i) GB loan combined with an outside source*

The borrower can take an outside loan to repay instalments and/or interest on a GB loan. This would happen at the end of the GB loan, when interest is due in week 51 and 52. The outside loan will then be repaid immediately after receiving a new GB loan. If the outside loan is financed by moneylenders, this would be an expensive type of cross-financing for the borrower as the interest rate on the outside loan may be substantial. Borrowing from the outside is normally more expensive than using GB loans, and there are thus seldom direct financial incentives for the borrower to engage in cross-financing of this sort. Since borrowers are not eligible to repay more than one instalment at a time (except for the last 10 instalments), it is even more costly to borrow from external sources to repay GB loans.

The costs of borrowing from other microcredit institutions are possibly lower than from moneylenders. However, GB borrowers are not eligible to borrow from other microcredit institutions, even though this is difficult to control. An escalation of credits to microcredit institutions may lead to a situation where such institutions are *competing* for borrowers, making cross-financing more likely (see Ebdon, 1994).<sup>8</sup> This is a scenario to avoid when the Summit's goal is put into practice.

Borrowing from friends and relatives is a normal practice in rural Bangladesh, but generally such loans are small and not interest-bearing.

Respondents were asked to indicate other sources than GB loans they had *access* to (other NGOs, banks, farmers and traders, and friends and relatives) and whether such access was higher than one year ago. If found to be higher, it may indicate that cross-financing might develop. We were particularly concerned with moneylenders, since such borrowing at high costs may lead the borrower into a debt trap. Generally, we found that the importance of moneylenders was *less* than one year ago, indicating that if the extent of cross-financing have increased during this period, the availability of external sources, e.g. money-lenders, was not the critical variable in explaining it.

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<sup>8</sup> Ebdon, R. 1994. "NGO expansion and the fight to reach the poor: Gender implications of a growing trend of encroachment in Bangladesh." Paper presented at IDS, Sussex, 3-5 Nov. 1994.

Questions were also designed to analyse the size of external loans and whether such loans had escalated during the borrower's membership period (see sections 4 and 5).

*ii) Combining GB loans*

This method involves using one GB loan to repay another. After the introduction of several new loan types, it is, for instance, possible to take a seasonal loan at the end of the general loan period and use it to repay the general loan. The next step in the cycle would be to use the new general loan to repay the seasonal loan. This method may be sustained longer than the first due to the lower interest rate on the loans involved.

The typical GB respondent had three active GB loans at the same time, which indicates that cross-financing is possible for the majority of GB members. We analysed the bivariate distribution between number of active loans and years of membership. Not surprisingly, we found that *older GB members had a larger number of active loans, indicating that cross-financing might develop.*

In section 3.2, the results of plots of borrowers' loan portfolios are presented, indicating the possible extent of such internal cross-financing.

The two methods can also be combined, with both outside loans and several GB loans mutually supporting each other. The end result is likely to be default (see section 5).

### **3.1.2 Indicators of when cross-financing becomes a problem**

Cross-financing becomes a problem only when associated with a situation of long-term inability to repay and service outstanding loans. We investigated some of the factors determining *repayment ability*, looking at the economic units responsible for repayment - their present status and their economic decision-making, the economics of some typical GB-financed projects, and lastly the monitoring by GB of these factors. The indicators applied and our main findings are presented below. Looking at repayment abilities, we distinguish between:

i) *The economic status of GB members* (their ownership of land and non-land assets, their sex, age and education and finally their present occupation and whether it has changed during their membership). The typical GB-member in our study was a married woman past her child bearing age, with little or no education. She was part of a larger household with more than one male income earner and with some land. It was typically a household with a potential for improving its economic status.

ii) *The organisation of the household economy* (gender division in households, engagement in multiple intra- and inter-household activities, patterns of income generation-, expenditure and loan repayment behaviour, non-project sources for repayment and attitudes to payment of interest). We found that securing high and stable repayment rates of GB loans depended upon *internal negotiations* within the household to allocate proceeds from different activities into debt servicing, and was not merely a matter of income generated by the GB-funded projects.

### **3.2 Statistical method: Plots**

A rough indicator of whether the borrower from a particular microcredit institution may use one type of loan, say A, to finance instalments and interest payments on another type of loan, say B, is the time-span between the disbursement of A and the termination of B. If, for instance, one respondent uses part of the seasonal loan to repay her general loan, one would expect the disbursement of the seasonal loan to be some weeks ahead of the termination of her general loan.

Such an indicator of cross-financing depends on whether the borrower invests her loans quickly or not. For all GB loans, we found that 90 % of the respondents invested at least half of the loan during the first month of disbursement. It is costly not to invest the money immediately after disbursement, and we assumed that funds were invested very soon. By analysing the borrower's total portfolio of loans (date of disbursement and expiry and loan size), we were to some extent able to discover the *possibility of* whether cross-financing took place. Since the problem was expected to be highest for seasonal loans, we plotted the disbursement date of the seasonal and general loans for each respondent in both zones.<sup>9</sup>

If this plot had a specific pattern (e.g. if the plot is concentrated along, below or above an angle of 45 degrees, both axes having the same scale), it indicated that the borrowers were using one type of loan to repay another type of loan. This is based on the assumption that funds are invested very soon. On the other hand, to the extent that seasonal loans generally are given in specific months, we expected the plot to be concentrated along vertical line(s), reflecting the season.

On such a basis, we were unable to observe any specific correlations between the months of disbursement for the two loans. Hence, measured by this indicator of timing of disbursement, we were *unable* to conclude that respondents were using seasonal loans on a large scale to repay general loans or vice versa. Similar plots for other types of loans confirmed this result.

In the qualitative survey, we asked the respondents whether cross-financing occurred, and nine respondents confirmed it, but we expected respondents to under-report such activities. This was also one reason for using indirect methods, such as the plots described above.

### **3.3 Replication by the implementing agency**

Similar plots, or even more sophisticated plots and analyses (for instance estimation of correlation coefficients), can easily be obtained by the monitoring unit in any microcredit institution. By grouping borrowers according to some main characteristics and comparing such plots at different points in time, it may be possible for the microcredit institution to discover any specific pattern in repayment behaviour and whether borrowers act strategically in their repayment behaviour.

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<sup>9</sup>Since general loans are given on a regular basis of one year, we used month of disbursement as a proxy for month of expiry. See appendix 1 for a presentation of the plot for Tangail.

In the GB case, data on disbursements and outstanding loans for each respondent are available at the branch level and computerised at the central level (such a system was introduced recently in some but not all branches). Such data may be applied to the monitoring of borrowers' performance and their escalation of credits in terms of both capital deepening and widening. However, applying these plots will only reveal the possibility of internal cross-financing. It will not reveal the extent of cross-financing through other external sources. Neither will it reveal whether cross-financing is a problem or not. These problems will be taken up in sections 4 and 5, respectively.

## 4 Capital deepening tends to favour the 'rich'

GB as well as CGAP's ultimate goal is to reach the poorest of the poor by providing credits. On the basis of the GB study, this section analyses whether GB in fact reaches the poorest and if not, propose a mechanism which explains why.

### 4.1. Elaboration of the dilemma

From a credit institution *financial viability* point of view, it is best that those borrowers having high outstanding loans generally correspond to those who are best able to service the loans. A borrower's ability to service a loan depends on the income of the household from multiple projects of which parts are funded by credits from the credit institution in question. The pooling of income therefore makes it difficult to measure the impact on household income of a particular loan (see sections 2 and 3.1.3).

There is an *internal growth dynamic* in the supply of microfinance, both in the sense that a borrower does not achieve additional loans of a particular type before current loans are repaid, and because acquiring new types of loan requires good repayment performance on old loans. Normally, additional loans of the same type are higher than the old ones and entering new types of loans adds to outstanding debt. The credit escalation documented in section 3 was mainly a result of *capital deepening* (old borrowers taking new types of loan).

To the extent that repayment of previous loans is an indicator of the project's *success*, capital deepening indicates that borrowers are climbing up the social ladder and are likely at some point to move out of the very poor group. This is also the ultimate goal of any microcredit institution such as GB. While these borrowers represent the evidence of the institution's success, at the same time their economic transformation may alienate the bank from its ideological foundation as a bank for the 'poorest'.

From a microcredit institution's *ideological* point of view, giving a large part of their credits to the successful borrowers may not conform with their social objectives, but may increase the financial viability of the institution. A conventional bank will never punish a successful borrower by refusing additional loans under such circumstances, but a microcredit institution ought to have some principles or thresholds determining when a borrower is not eligible for additional borrowings, even though the incentive effects of ending further loans to successful borrowers may be severe. GB also found it difficult to terminate repeat lending to the successful borrowers.

## **4.2 Statistical method: regression analysis of what determines the size of loans**

Credit escalation takes the form of increasing the disbursement of loans. This section focuses on what factors determine the amount of credit allowed to individual borrowers. Is it generally the case that borrowers with high loans are also those with the best ability to service loans? More specifically, is it the case that the 'rich' generally obtain larger loans than the 'poor'? Whether the rich, in fact, perform better than the poor is analysed in section 5.

We applied a regression analysis where the dependent variable was the respondent's total disbursement of GB loans at a particular time.<sup>10</sup> Our independent variables were factors perceived to influence repayment ability.

If loan size increases with the respondents' available assets, this would be a good sign for potential repayments to GB. In the last instance, the borrowers' economic viability influences the viability of GB. As a bank which gives non-collateral loans, GB needs the borrowers' assets or incomes from their projects to enable them to maintain or reduce their liabilities to the bank. We also expect that the viability of the bank will decrease with the level of the respondents' financial loans outside the GB system.

In the analysis of *assets and income*, we distinguished between several variables: ownership of land, the extent of land purchasing, non-land assets (value of cattle etc.) and the number of male/female earners in the household, but did not include any direct indicator of income. In addition we registered zone. Regarding non-institutional loans (from the informal sector), we distinguished between those borrowers who at present have higher and lower informal loans than at the time of joining GB.

In addition to assets and income, we also expected that the viability of GB would increase with the quality of information gathered about the respondents. We used the period of membership and the borrower's repayment behaviour (the frequency of missed instalments) as proxies for information.

*The results showed that respondents who (i) have been members of GB for a long period and (ii) have bought land and have high assets generally have larger loans than other respondents.*

In addition, the zone is significant in explaining the borrowers' loan size. The number of earners per household and the extent of borrowing in the informal market are insignificant variables. Those borrowing more from non-institutional sources now than at the time they joined GB have smaller loans. The above variables explain nearly 50 per cent of the variation in the loan size.

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<sup>10</sup>Total loan except housing loans. We have also undertaken analyses including housing loans, but the results are generally the same. See appendix 2 for a presentation of the results. No independence test has been carried out for the independent variables. This could be a possible improvement of the analysis in the future.

From GB's financial viability point of view, the above results seem positive. Borrowers who (i) have large loans from the informal market, (ii) miss their instalments frequently and (iii) have an extremely low level of assets do not have large loans in GB. In relation to its ideological foundation, however, the results indicate that the 'best of the poor' have higher access to loans than the very poorest. In fact we found that the average land holdings of the respondents were higher than the criteria of eligibility for acquiring loans in the GB system.

As pointed out by the GB, the land holdings were high as a result of its success. However, we did not have time series to test such a hypothesis.

### **4.3 Replication by an implementing agency**

Any microcredit institution with the primary object of reaching the very poor requires information on the distribution of its loans between different categories of borrowers. Borrowers may be categorised in terms of i) their economic status, e.g., whether credits are going to the destitute or to other poor groups, and ii) household characteristics, for instance the number of earners in the household. Concerning i), we found it easy to collect credible data on sex, age, education and household assets and expenditure, but not on income. Concerning ii), respondents were not unwilling to report household characteristics. Except for the danger of overloading, the monitoring information unit in a microcredit institution could probably obtain similar data of key classification variables for its borrowers. An additional requirement for giving loans could be that borrowers provide such information. As far as I know, such individual data sets have hardly been used by any microcredit institution in monitoring its borrowers.<sup>11</sup> On the other hand, in formal credit markets such tools are very common.

From the financial viability point of view, it is probably of equal importance that borrowers are able to service their loans than for loans to reach the target group. For example, to the extent that the destitute are not able to service their loans, a contradiction may arise between these two objectives. Obtaining information on key classification variables, as well as on borrowers' outstanding debt, makes it possible to reveal whether one reaches the target group or not. One is also able to ascertain the financial viability of the institution's loan portfolio.

It will probably be difficult to collect unbiased figures for external loans, as attempted in our GB study. It should be possible to collect data on other variables, such as assets (land, cattle, etc.) and the number of earners in the household. On such a basis, the implementing agency may analyse factors determining the size of the borrower's loan. It could also be possible to undertake time series analysis. Such an analysis could be used further in determining when loans are to be terminated.

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<sup>11</sup>Monique Cohen brought to my attention during the Virtual Meeting that ADEMI in the Dominican Republic tracks their clients' enterprise assets, sales and levels of employment. Richard Morsom has later informed me that the Zimbabwe's Social Development Fund has undertaken a similar practice.

## **5 Economic success may lead to poor repayment behaviour**

A distinction should be made between ability and willingness to repay loans. Even though an impact assessment analysis shows that borrowers are improving their welfare, such a welfare improvement may lead to a change in repayment behaviour as the borrower's outside opportunities may rise. If welfare improvement leads to weaker financial discipline in terms of repayment behaviour, it may threaten the viability of the credit institution in question. Hence, the improved viability of the borrower does not necessarily lead to improved viability of the MFI.

### **5.1 Elaboration of the dilemma**

The spirit of the Microcredit Summit declaration is, of course, based on the assumption that providing poor people with credit has a positive impact on their welfare, but equally important is the assumption that poor people generally act as good borrowers. However, there may be important socio-culturally determined differences in attitudes towards paying interest and coping with debt, and borrowers may develop different strategies for coping with debt. In a social context where it is normal not to repay loans, as, for instance, with formal lending in Bangladesh, the escalation of credit to the poor may not be viable in the long run.

Coping strategies may also change during a borrower's membership period. For instance, 'old' borrowers may increase their available assets as well as their outside opportunities. They may also become less risk averse. Under such circumstances, the termination of additional loans may not act any longer as a disciplining device for encouraging good repayment behaviour. Borrowers who are assumed best able to repay their loans, for instance, those with high assets (see section 4), may in fact cause serious problems to a credit institution.

### **5.2 Statistical method: logistic regression of inter-group variation in servicing of loans**

We distinguished between two types of borrowers: good and bad borrowers. In our analysis good borrowers were defined as those who only seldom or never miss their instalments, while bad borrowers were those who often or occasionally missed their instalments.<sup>12</sup>

We began by analysing indicators of how 'good' and 'bad' borrowers serviced their loans, and proceeded with a statistical analysis.

*'Good borrowers'*

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<sup>12</sup> The categories are defined according to the borrowers' own perceptions. Our plan was to use defaulters as a classification variable, but hardly anyone categorized themselves as a defaulter, which made this impossible.

The respondents who answered that they missed their instalments seldom, rarely or never, were asked how the household was able to service their loans to GB. The respondents rated the degree of importance of different explanations. The single most important source of financing instalments was *the income generated by the activities which were funded by GB loans*. The second most important source of financing was *wages*. This means income from activities outside the GB system and possibly from other household members (male labour). *Neither formal nor informal loans were found to be important in the process of repaying the loans.*

#### *'Bad borrowers'*

The respondents having difficulties paying their instalments were asked to rate the importance of five possible explanations for this. We found that for those borrowers having problems in terms of paying their instalments, the incomes generated from the projects financed by GB loans seemed to be too low. Illness seems to be an additional explanation of the problems faced by the respondents.

#### *Results from a logistic regression analysis*

This analysis is an attempt to test the degree of importance of different variables explaining irregular behaviour (missed instalments) and particularly whether economic success and credit escalation had a significant effect on borrowers' behaviour. As mentioned in section 3, cross-financing is hardly a problem for the bank as long it does not influence repayment behaviour. Here, we used a logistic regression analysis (a regression analysis where the dependent variable has two values), and as above we distinguished between two types of borrower.

The explanatory variables used to distinguish good from bad borrowers were grouped as follows:

i) indicators of economic success:

- the borrowers' assets (e.g. land area, value of other assets as animals), but not their income
- land bought during the previous year
- land shared in/out during last season (aman)
- period of time as a GB member.

ii) Indicators of credit escalation and cross-financing:

- total loans from other sources than GB
- whether they have increased their borrowings outside the GB system during their membership period (e.g. from the informal credit market)
- number of active GB loans.

iii) Other possible explanations

- the number of earners per household
- the zone.

Some comments on the choice of independent variables are in order. *The period of time as a GB member* is important for at least two reasons: firstly, according to Khandker et al

