

REPAYMENT PERFORMANCE OF GRAMEEN BANK BORROWERS: THE 'UNZIPPED' STATE*

Imran Matin

University of Sussex

1. Introduction

Poor loan repayment performance have been a major and at times overriding criticism against earlier models of pro-poor credit interventions. Subsequent experimentations with poverty focussed financial services (mostly credit driven) became one of the most favourite 'development projects' in many parts of the developing world.

One of the most important reasons behind the overwhelming popularity of the Grameen bank pioneered group credit model is due to its sustained high repayment performance. Researchers attempting to explain this have emphasised the importance of contract design (Stiglitz, J. 1990; Besley, C. and S. Coates, 1995; Varian, H., 1990; Aghion, A., 1995; Wenner, M., 1996) which finds innovative ways in coping with the problems of imperfect information that is germane in any credit transaction. These constraints tend to be more severe if the clients to be served are poor, cannot offer tangible, marketable collateral, do not have any formal credit history and do not have access to formal insurance arrangements.

Despite the general high repayment performance of Grameen Bank, repayment 'problems' have been mentioned in various studies. In one of the first comprehensive study of Grameen Bank operations Mahbub Hossain (1988) finds a negative relationship between repayment performance and age of membership where older borrowers tend to have higher arrears than their more recent peers. A very similar observation for BRAC¹ borrowers is reported by Yaqub (1996).

In this paper, I provide further evidence of repayment problems in group credit programme. Using survey data collected during 1994-95² in four villages of Madhupur Thana, I model the determinants of repayment performance of Grameen Bank borrowers. Moreover, I discuss the findings from in-depth interviews with the borrowers to have a wider understanding of the repayment problem in the area. I argue that group credit programmes can be vulnerable to default problem due to its operational structure and the operating environment.

* The comments and suggestions made by Prof. Michael Lipton, Dr. Barry Reilley and Mr. Andrew Newell at the University of Sussex and Dr. Martin Greeley at the Institute of Development Studies have been very helpful. I particularly thank Dr. Martin Greeley for allowing me to use his data set. I also acknowledge the field work grant provided by ESCOR.

1. Bangladesh Rural Advancement Committee, the largest Non-Governmental Organisation (NGO) in Bangladesh.

2. The household survey data was collected by Dr. Martin Greeley while the repayment performance related data was collected by the author.

2. The Grameen Credit Contract: Theory and Practice

The Grameen Bank provides formal collateral-free credit to the rural poor. Credit is disbursed to individuals who are part of a 5 member group. About 6-8 credit groups are federated at a centre which is the basic unit of contact between the bank and the borrowers. Weekly meetings are conducted by a bank worker in which the weekly instalment on outstanding loans are collected. The first step of the loan sanctioning process begins here where the loan proposal is raised by the borrower and agreed (or changed) by group and centre members.³

To be eligible for membership, a borrower has to be from the target group defined by the Grameen Bank as those households who have less than or equal to 50 decimal of owned land at the time of membership. The bank carries out eligibility test of the household but the group formation decisions are largely left to the group members. The bank however reserves the right to award formal recognition to the group. Though the bank is officially supposed to provide intensive group training to members before group recognition, in older areas where new groups typically join old centres rather than form yet more new centres, the training is largely left to the old group members of the centre⁴

The borrowers also need to set up a common group fund account before they can have access to credit. Each group member saves tk.2 every week (changed from tk. 1/week since 1.10.95) and the accumulated fund is kept and managed by the bank and the group fund. This contribution to the group fund is known as own contribution. In addition to this, a 5% deduction from every loan disbursed is put in this fund. This is known as group tax 1. Until recently, borrowers could only withdraw the own savings component of the group fund contribution when s/he decided to cancel membership.

3. My field survey, however, did not find much evidence on in-group credit rationing. Moreover, the capacity of the centre members to enforce in-group credit rationing seems to decrease with the age of the group and centre. The most important criterion used in loan size determination seemed to be membership period. The violation of such implicit notion of membership age based 'fairness' by the lender is perceived by members as 'unfair'. All this has important policy consideration for credit institutions.

4. The pivotal role in the process of group formation is usually played by a few old centre members acting mostly as 'agents' of the lending institution. Though I did not find over cases of favouritism or corruption in this process in any significant scale, there were a few cases where the powerful centre member(s) took cuts from the first loan disbursed to the new intake(s). Another interesting observation in the dynamics of group formation was the growing tendency of taking in increasingly 'better-off' entrants. This tendency has also been reported by several others (Todd, H. 1996; Montgomery, R., 1996).

As in-depth interviews with the borrowers in the area suggests that the issue of access to this fund and confusions around the recent changes that have been made since October 1995 is considered to be an important in aggravating the repayment problem in the area, I discuss this in detail to set the background for later discussion.

Borrowers can take interest free credit from this fund upon the approval of other group members. This is Group Fund Loan. The group fund was created to provide interest free loans to members at times of emergency, so that a borrowers do not have to erode the capital base or resort to local money lenders. The fund was planned to be operated by members of the group who were also to decide the terms and conditions of the loan (Hossain, M., 1988: 42).

My observation in the study area however suggests that the final decision of allowing access to this fund rests with the bank. Interviews with bank officials suggest that though the original idea behind the group fund was to allow group members to operate their own 'little bank', the problems in the ground like bad repayment of group fund loan which created barriers to others in the group to have access in time of need, a few powerful members in the group monopolising access etc. have forced the bank to make changes to the original idea.

Access is determined firstly by membership period (at least 5 years)⁵. Group members often do not know the accumulated fund in their 'little bank': the bank worker tells them the total borrowable amount in the group fund. This is usually half of the total accumulated fund. The group members then usually allows the interested group member to take out a group fund loan which is roughly 1/5th (assuming that the group is 5-membered) of the total borrowable fund.⁶

Thus, despite the 'pooled' nature of the fund, the loans taken are regarded as withdrawal of individual contribution by the borrowers which probably explains the relatively poor repayment performance of group fund loans (ibid:33). Moreover, the informal practice of using group fund repayment to cover other group/centre members' instalment shortage also gives a false impression of group fund loan repayment record (Tood, H., 1996: 123).

5. As a new entrant whose child was ill and had to borrow tk. 500 from informal sources for his treatment said to me when I asked as to why she had not taken a group fund loan. "I can only become a malik (owner) of group fund once I have completed atleast 5 years of membership".

6. Most of the group fund loans, we were told by the members are disbursed on this principle. Only in exceptional cases are borrowers allowed to take out a group fund loan which is greater than 1/5th of the total borrowable amount in the fund. This has recently been incorporated in the changed rules on access to group fund (Circular Letter No. 17/95, dated 26.08.95).

The first strategy employed by the bank in restricting access via membership period and allowing a fraction of the accumulated group fund balance to be loanable is to manage default using group fund contributions. This is a form of de-facto collateral. Hossain reports that by the end of 1986, the balance in the group fund was about 38% of the outstanding loans which 'shows the strength of Grameen Bank in handling potential situations of bad debt' (:34).

The strategy employed by the borrowers, on the other hand, to 'individualise' the group fund loan is to avoid risking one's individual savings and to have access to it even when some other member in the group is not repaying the group fund loan. The problem however is that the bank requires that the group fund balance after disbursement of a group fund loan be brought to an 'acceptable level' before another group fund loan is disbursed. There seemed to be no clear definition of this 'acceptable' level.⁷ All these together had created major access barriers to this fund (Wright G., M. Hossain, S. Rutherford, 1996). This probably answers the apparent puzzling question that Hossain asks that, "It is difficult to understand why a large proportion of Group Fund remains unused, since experience indicates that the poor tend to be in constant need of credit" (:42).

All these 'ambiguities' over access to group fund loan and the restriction that the group tax 1 cannot be withdrawn when a member cancels membership created major protest among Grameen Bank borrowers in 1995. This has resulted in important changes that have been made to group fund access since October 1995 by Grameen Bank.

According to the new rules (Circular Letter No. 17/95, dated 26.08.95):

1. After ten years of membership and if the borrower intends to continue membership, the individual contributions of the borrower in the group fund (including group tax 1) will be transferred into an individual account. Any arrears and/or overdue that the borrower might have has to be cleared before the transfer. Borrowers have full access to this individual account.
2. If a member cancels membership, s/he can withdraw all contributions in the group fund. Any arrears and/or overdue has to be cleared before the withdrawal.
3. These changes will not apply to borrowers who have cancelled their membership before Oct. 1, 1995.

7. Most borrowers reported that atleast a third of the outstanding group fund loan has to be repaid before another group fund loan can be disbursed. This they considered to be an improvement over the previous rule where no new group fund loan could be disbursed before the outstanding loan was repaid. When this rule was in force, one member in the group used to withdraw all the borrowable amount in the group fund and then distribute it amongst other members. Obviously, the repayment was poor and the practice created quarrels and tension among members.

-
4. In general situations (except in cases of natural disaster), members as a whole can take out up to 50% of the accumulated fund in the group fund as loan. No member can however individually take more than 1/10th of the accumulated fund in the group fund as loan.

We will discuss the implications of these changes and the ways in which it has affected repayment performance in the study area later.

All Grameen Bank loans are of one-year duration (except housing loan which is a long-term loan) payable in weekly instalments. Until recently, the instalment on a loan was 2% of the loan size and the principal was due in 50 weeks. The interest was to be repaid in the 51st and 52nd week. In practice, however, interest charges were paid (or recorded) only when the borrower decided to take up another loan.

This practice created two problems: firstly, the lump sum interest charges at times forced the borrower to take out informal loans to repay it which was repaid using the new loan taken from Grameen Bank. Todd in her excellent ethnographic review of Grameen Bank operations reports:

"Only about a third of these sums come from cash savings. Most borrowed to make the interest payment and it was easy to borrow because people knew that it would be quickly repaid and so most of these informal loans were without interest. Some members, like the widow Noorjahan, who had poor relations with their kin group were forced to borrow from moneylenders" (Todd, H., :136).

The second problem is that the bank worker might not record the payment of the interest charges at the time when it is paid and the branch manager cannot spot a delay in recording this payment. Todd reports an interesting incident where the bank worker's desire to maintain regular repayment records gave rise to a 'private arrangement' which backfired:

"...a member had left the centre to take a job in Chittagong. She had paid the principal amount of her loan but the interest payment was still outstanding. She had sent the interest payment to her brother who gave it to another centre member to be handed over to the bank worker during the weekly

centre meeting. Three members were short on their repayment that week, so the interest charges was used to cover their shortfall and was not recorded as interest paid by the bank worker. Those members who were helped in this way did eventually repay, most from their new loans. This seemed to be a neat solution. There was the 'clean' record of the centre to be maintained. This was important to keep the centre eligible for special types of loan like housing loans. It was also important in the promotion prospects of the bank worker. But the practice got out of hand. Loans were being delayed for several members because their interest had been paid but not recorded." (Todd.H., 1996 : 123-24).

On loans disbursed after Oct. 1995, the weekly instalment has been revised to include both principal interest. The weekly instalment on a tk. 1000 loan for instance now is tk. 22 as against tk. 20 before. This constitutes tk. 20 of principal and tk. 2 of interest. This is expected to combat both the problems discussed above.

According to the pristine model, all Grameen Bank loans are backed by joint liability which is defined as a form of collective responsibility where failure to repay by one member results in sanctioning by the bank. In this model, this sanction takes the form of denying further credit to all members of the collective forum.

In case of the Grameen Bank model, however, there are two intertwined collective forum: the group and the centre. My field investigations suggests that the sanction is directed at the centre rather than at the level of the small group for the simple reason that peer pressure from a larger peer group is deemed to be more effective than that from a smaller peer group (see Montgomery, R., 1995 for a similar point).

Moreover, the sanction by the bank seldom takes the form of denial of future credit to other members. This however does not imply that joint liability is not being enforced in other forms⁸. In-depth interview with bank workers, group and centre members suggest that the bank's sanction does not take the form of denying access to future credit to other members: the bank worker when faced with a weekly instalment default or irregularity takes steps that increase the transaction cost of other centre members. Such actions include, for example,

8. Jain (1996) for example concludes from the observation that no member is denied credit due to another members' default or irregularity that joint liability is not enforced.

making all centre members wait for longer periods in the centre meeting until a solution is reached, not accepting other members' instalments until the due is cleared, delaying sanctioning new loans of other members, reducing or not increasing the loan size of other centre members, not disbursing loans like housing loan, group fund loan in that centre etc. As will be discussed below, the effectiveness of all these strategies are very sensitive and are likely to be ineffective as more borrowers start becoming irregular in repaying weekly instalment.

3. Madhupur: The Data Set

Grameen Bank has been in operation in Madhupur area since 1981. Four villages were surveyed in this area in which there was a total of 14 Grameen Bank centres. The population of current members in these centres was 430 during the survey.

Besides Grameen Bank, Madhupur has a very intensive presence of credit and other service providing NGOs. All the major NGOs in Bangladesh (ASA, BRAC, Proshika, Caritas, BRDB, CARE, ADRA etc.) have operations in Madhupur. Moreover, there are many local (some Tangail district level, like Buro Tangail, SDS, SSS and many thana level) NGOs working in the area. My survey identified as many as 34 such interventions.

If we categorise households on the basis of their current NGO participation, we can think of four groups:

Group	Description	Description
Group A	Grameen Bank Households	Households having at least one Grameen Bank participant. Grameen Bank is the oldest NGO in the area (operating since 1981) and all the households having Grameen Bank and some other NGO participation was found to have joined the other NGO after Grameen Bank. Thus, in case a household has some other NGO membership besides Grameen, we treated them as Grameen Bank households.
Group B	Other NGO Households	Households having some other NGO participation but not Grameen Bank participation.
Group C	Eligible Non-Participating Households	Households that had less than or equal to 50 decimal owned land but had no NGO participation at the time of survey. As most NGOs use this as a common targetting criterion, we use this to define eligible non-participating households.
Group D	Non-eligible Non-participating Households	Households that had more than 50 decimal owned land and had no NGO participation at the time of survey.

Group A and Group B based on the NGO eligibility criterion be further divided into

eligible and non-eligible groups. We call these sub groups as A1, A2 and B1 and B2 respectively.

Group	Number of HHs in Madhupur area	% of Total in Madhupur area*
Group A	354	14%
Group A1	264	75% ^a
Group A2	90	25% ^a
Group B	762	30%
Group B1	643	84% ^a
Group B2	114	16% ^a
Group C	1064	42%
Group D	386	15%
Total	2566	

* Percentages of total do not add up to 100 because of rounding.

^a Percentages of subgroup population to total population of the relevant group.

The household level data used in this study is a comprehensive data set collected by Martin Greeley over 1994-95 under the project titled, "Poverty and Well-being in Bangladesh". All the households in the four villages were included in the sample. The data on 1994-95 loan repayment of Grameen Bank borrowers in the study villages was collected by the author.

4. Rupture of Joint Liability: The Unzipping in Madhupur

All the centres in the study area were having repayment problems during the survey. Repayment problems in Madhupur study area seem to have worsened in 1995. This is illustrated by a comparison of repayment performance of loans in 1994 and in 1995. Two records prepared by Grameen Bank branch is used for this purpose. These are Centre wise Shal Tamami (end of year statement) 1994 and 1995. They record information on all bank loans outstanding by the end of a year.

Repayment rates for overdue loans are straightforward as the interest charges due on the loan is recorded. According to Grameen Bank repayment schedule, this is due after the 50th week of the loan by which principal falls due. Thus, the repayment rate for loans that are overdue in 31.12.95 is : $\text{amount paid}/(\text{principal}+\text{interest}) \times 100$.

The repayment rate calculation of loans that are not due by the end of a year is not fully precise. This is because Shal Tamami does not include information on the numbers of weeks passed which is essential to calculate the repayment rate of such a loan. Short of

this information, I used the date of loan disbursement of such loans recorded in the Shal Tamami to calculate the approximate numbers of weeks passed for a loan that is not due by the end of a year. Thus repayment rate for loans that are not due in 31.12.95 is:

$$(\text{amount paid/amount due}) \times 100$$

$$\text{where amount due} = (\text{loan size}/50) \times (\text{months passed} \times 4)$$

As we shall see below, ignoring the repayment rate of loans not due in any given time could give rise to a misleading picture of actual repayment performance.

Loans have been categorised into three types where:

Type I Loans that are in overdue by the end of the year. For these types of loans, even the principal has not been fully repaid.

Type II Loans that are overdue by the end of the year. For these loans, the principal has been cleared but the interest remains due.

Type III Loans that are not due by the end of the year.

All the general and seasonal loans recorded in the 1994 and 1995 Shal Tamami have been included in the following analysis.

Loan Type	1994 Shal Tamami		1995 Shal Tamami	
	Number	Rep Rate (%)	Number	Rep Rate (%)
Type I	82	64	324	41
Type II	15	93	12	90
Type III	558	83	324	53
Overall	655	81	660	47
Ignoring Type III	97	79	336	66

As is clear from the above table, overall repayment has worsened in 1995. A large number of loans in 1995 remained overdue. While in 1994, only 17% of outstanding loans were overdue, the corresponding figure in 1995 is about 50%. More worryingly, while the repayment rate of the not due loans in 1994 was 83%, in 1995, it is only 53%. This is the reason why ignoring not due loans in calculating repayment rate at any point in time can give misleading results as can be seen from the table above: while the overall repayment rate in 1995, including the repayment performance of not due loans is 47% the figure increases to 66% if the not due loans are excluded. This is specially a problem if the repayment performance of not due loans is 'bad'. Comparing the mean repayment rate of type I and type III loans in 1995 show that in fact, the mean repayment rate of these two types of loans are not significantly different. This gives us some idea about the magnitude

and deteriorating trend in the repayment performance in our study centres.

We followed up the repayment performance of our study centres up until July 1996. We could obtain figures only for 343 loans in July 1996⁹. Out of these we found about 67% (corresponding figures in 1994 and 1995 was 17% and 53% respectively) loans to be of type I. It was not possible to calculate the repayment rate of these loans as we did not have information on interest charges on these loans. Instead, for these loans we constructed a variable (RMK) which takes the value:

- 0 if total payment made on the loan as of July 1996 is equal to the corresponding figure as of 31.12.95, i.e. if nothing has been paid on the loan since 31.12.95.
- 1 if the difference above is positive, i.e. if some payments have been made on the loan since 31.12.95.

We found that of 230 type I loans in July 1996, an astounding 83% of them took the value of RMK=0, that is no additional contribution has been made on the loan in 1996. There seemed to be no sign of improvement in the repayment performance in 1996.

The problem of trying to establish a relationship between default and borrowing household characteristics using cross-section data from an area where default becomes the 'norm' is that there is a lot of underlying demonstration effect. This makes the distinguishing characteristics between households very noisy. On the other hand, in a 'typical' Grameen Bank area, there are very few irregularities and almost no overdue. There may be an opposite demonstration effect in operation in such areas which makes repayment the 'norm'. Such bimodal distribution of loan repayment behaviour across areas and periods is evident in my survey. For example, in the 1993 Shal Tamami statements, we find only a few cases of overdue loans and all these loans are 'bad debts' in the sense that they have been disbursed more than 2 years ago. Similar pattern is found in Chandina, the other study area. In 'ideal' centres, any repayment problem is dealt with immediately and in extreme cases, the defaulting borrower is barred from further access to credit. The bank worker and centre members together devise strategies to 'solve' any repayment irregularities. Centre members in a Grameen Bank centre in Chandina area reported such an incident:

"One of our members left the village for work in Chittagong. Her father managed her instalments for some time as he was using the credit and it was because of his guarantee that we

9. We collected the loan information of July 1996 from the weekly collection sheet of bank workers of the relevant centres.

took her in the centre. She returned after a few months but did not repay her instalments for a few more weeks. We visited her house, but she refused to listen. Then, we told the bank worker to come with us and tell her that if she cleared her dues, a new larger loan will be given to her. Of course, this was just a trick to make her repay. She cleared her dues and her loan proposal was not sanctioned. We told the bank worker to tell her that the loan was not sanctioned from the area office. She 'voluntarily' cancelled her membership after a few weeks"

(personal interview by the author)

Such swings in repayment behaviour is not uncommon in group credit programmes Grameen Bank. Todd reports:

"Our education into the workings of the Grameen Bank centres began with a strike. All 30 women in the Rotnogram centre simultaneously stopped repayment on all their loans. In the same week, the male centre in the same village also came out on strike in support of the women's action. The catalyst was the bank worker's refusal to process a member's loan proposal on the grounds that interest on some other member of the centre was due. When members protested, the bank worker threatened to stop all seasonal loan of the centre. The men's centre, which also had loan proposals delayed decided to join them. In a few days, the branch manager arrived in the village and met with the centres. The loan and some other delayed loans were sanctioned. The centre members resumed repayment" (ibid: 122).

Gibbons, the founder of the first Grameen replication in Malaysia found in his detailed case study of default problems in Projek Ikhtiar that,

"Despite their (group and centre members) pledge to

take collective responsibility, a pattern had become apparent with defaulters: if they were of short duration, say one or two weeks, fellow group and centre members would pay on behalf of the defaulting member. But if the default continued for say 4 to 5 weeks, other group or centre members became unwilling to continue their support, regardless of the reason for the default. Just when we needed the continued support of other group and centre members, it collapsed. There seemed to be a norm in Malay villages that one shouldn't intervene in a neighbour's business, even if others would lose privileges subsequently because of default" (Gibbons, D. and S. Kasim, 1994).

In an interesting paper, Yaqub (1995) argues that the repayment success of group credit programmes is driven substantially by the borrowers' lack of alternative sources of credit and social powerlessness. As these conditions change through 'individual empowerment' and/or 'social transformation', repayment might be undermined.

In-depth interviews with centre members in the area suggest that the repayment problem in Madhupur area is due to the following reasons:

- Large loans to borrowers who had no ability to bear the debt burden.
- Special favour to more recent borrowers who were better-off, more favoured by the bank staff as they could absorb large loans. These borrowers got large loans despite being 'new' members, which according to old borrowers is 'unfair'.
- Large loans made the whole system very fragile as the capacity of other centre members to support irregularities when forced by the bank worker became increasingly difficult. Quarrels and acrimony between centre members increased.
- When centre members with relatively smaller loans were asked to pay for the irregularities of those with much larger debt, it was seen as unfair.
- The changes in the group fund access rules exacerbated the problems as the bank workers made promises that raised expectations. They could not keep their promises. For instance, the centre members were told by the bank workers that members who were more than 10 years old would get back their group fund contributions. Nothing was mentioned regarding the requirement that all outstanding arrears need to be cleared before the arrangement.

When this was clarified, borrowers demanded that their outstanding arrears and/or

overdue be cleared with their group fund contributions. The problem, seemed to be that for many borrowers this could not be done with their savings in the group fund. The bank was also reluctant in doing this as a general practice. There were rumours that the bank was using other group members' contributions in the group fund to clear the arrears of those whose individual contribution in the fund was not enough to clear their debt. Moreover, the time required to calculate individual members' group fund contributions was not taken into account while making verbal promises to centre members. In most cases, the time within which the borrowers were expecting to get a lump sum cash remained illusive.

The bank workers, however, had good reasons to perk up the hope of the borrowers: as most of the centres had repayment irregularities, the bank workers assumed that the news of more 'lenient' group fund access would attract irregular borrowers back to track. The strategy however backfired: the regular borrowers started to become irregular as well.

5. The Default Model

This section will look into the borrower characteristics and explore their relationship with repayment behaviour discussed in the section above.

We collected household and individual level information on 246 current Grameen Bank borrowers in our study area who had an outstanding loan according to the 1995 Shal Tamami.

Based on the information obtained from the 1995 Shal Tamami, we categorised borrowers into two groups: borrowers who had overdue loan in 31.12.95 (DEFDUM=1) and those who did not (DEFDUM=0) have any overdue loan in 31.12.95.¹⁰ This was used as the dependent variable in the logistic regression.

The mean repayment rate of DEFDUM=1 borrowers was about 41% against 66% for borrowers with DEFDUM=0. The mean difference is statistically significant ($t=8.37$).

A simpler way of modelling the repayment problem could be using the repayment rate as the dependent with OLS. This was not used as the calculation of repayment rate for loans that are not due, as mentioned above is not fully accurate. Moreover, as Grameen Bank loans are one-year loans, using repayment rate as the repayment performance for not matured loans is too strict a criterion. Lastly, as default in the area under study seemed

10. This however does not imply that these 'not overdue' loans were not in arrears. The mean repayment rate of such loans were 66%.

to be very widespread, repayment rates would be very sensitive to the underlying demonstration effect.

We excluded borrowers who did not have any outstanding loan in 1995. Given that the waiting period between repayment of a loan and getting a new loan is not more than a month and that there are at least two loans that a borrower can get (general and seasonal), it seems very unlikely that a borrower will not have an outstanding loan at any point in time. We identified 46 such cases.

Interviews with some of these borrowers, the bank and relevant centre members suggest that these borrowers had been very irregular in their loan repayment in the past. As the bank was very strict with such irregularities then, it created problems for other on-time borrowers. In most of the cases, the outstanding loans were long overdue and was settled by the bank using the borrower's group fund contributions. They are in effect 'drop-outs' and their names remain on records as they have not withdrawn their personal savings from the bank. The centre members made it clear that these borrowers will not be given any further loan.

The above explanation is strengthened by using our data to compare the depth of membership between these borrowers (inactive) and those that had an outstanding loan (active) in 1995. The variable depth of membership is computed by dividing the cumulative loan amount ever taken from Grameen Bank by the membership period. Both was calculated using the branch records.¹¹ While the depth was tk. 1558 for the inactive members, it was tk. 6839 for the active members. The difference between the mean yielded a very high *t* value of 9.03.

11. 5% of every loan disbursed by Grameen Bank is deduced and deposited in a common group fund called the Group Fund and this contribution, is called Group Tax1. Grameen branches which are more than 10 years old have recently (since October 1995) been instructed to calculate the individual member's group tax1 contributions as it has now been decided (after a protest by Grameen Bank borrowers demanding access to their group fund contributions) that each member's all group fund contributions will be returned to an individual account should the borrower decide to stay on as a member after 10 years. This contribution will be returned to the borrower in case she decides to cancel her membership, irrespective of her membership period. It must be noted that, until this rule came into force, members were not allowed to withdraw their individual group tax contributions upon membership cancellation. They could only withdraw their personal savings (tk1/week) contributions. Before this rule, it was virtually impossible to calculate the total loan amount ever taken from Grameen Bank by a borrower. Multiplying the individual group tax1 figure (available now in branches more than 10 years old) by 20 gives the total loan amount ever borrowed from Grameen.

The regressors used were:

Variable	Description
EDDUM	Education Dummy 1 if borrower and/or household head had any education 0 otherwise
HL	Housing loan Dummy 1 if borrower had a housing loan 0 otherwise
MPDGB	Membership period of the borrower in Grameen Bank measured in years. A square of this variable was used to account for possible non-linearity
OP-LAND	Area of the operated land in decimal. A square term is used to account for possible non-linearity
TNGO	A NGO Participation dummy 1 if borrower household has other NGO membership 0 if borrower household has no other NGO membership
V5	Village Dummies with the village that is most inaccessible used as the base village
V6	Same
V7	Same

Other regressors of interest like total income, sex of the borrower, current loan size were used but were not found to effect the dependent variable in any significant way. This is contrary to much of the findings on repayment performance of rural credit interventions which finds a significant positive relationship between borrowing household's asset/income position and its loan default status. The fact that current loan size does not affect the dependent variable is apparently surprising as one would expect default status on the current loan to be positively associated with its size. This suggests a very strong demonstration effect where borrowers having relatively small loan sizes behave in the same way as those who have larger loans. The sign of the coefficient (not reported) is however, as expected positive but not significant at 10% level. Total adjusted per capita income and sex were both positively associated with default but had very small Wald statistics (less than 1). Female borrowers have been found many studies to be better repayers than their male counterparts, but my results do not suggest such a relationship.

The comparison of means and other descriptive statistics between the two groups are given below:

Total	239 borrowers	
Borrowers not having overdue loan		81 cases
Borrowers having overdue loan 1		58 cases
Education Dummy		
No	164 cases	
Yes	74 cases	
Housing loan		
No	122 cases	
Yes	117 cases	
Total NGO membership in Household Dummy		
Not more than one	178 cases	
More than one	61 cases	
Membership Length		
mean length for the whole sample		8.92 years
mean length for not overdue loan group		7.9 years
mean length for overdue loan group		9.45 years
Operating Land		
mean size for the whole sample		124.23 decimals
mean size for not overdue loan group		169.47 decimals
mean size for overdue loan group		101.04 decimals

Comparison of Mean
(base group is borrowers having no overdue loans)

Variable	t value	significance
Education Dummy	2.97	.003
Housing Loan Dummy	-4.13	.000
Total NGO Participation Dummy	-2.75	.006
Membership Length	-2.41	.016
Operating Land	2.97	.003

The result of the logistic regression is given below:

Variable	Coefficient	Wald	Significance
Education Dummy	.77	5.07	.02
Housing Loan Dummy	1.01	7.17	.007
Membership Length	.52	4.18	.04
Squared Membership Length	-.025	3.81	.05
Operated Land	-.008	9.98	.001
Squared Operated Land	$9.95 \cdot 10^{-6}$	5.99	.014
Total NGO Dummy	1.24	7.56	.006
V5	.45	.75	.386
V6	-.69	1.24	.26
V7	-.63	1.10	.29
Constant	-1.17	1	.316
Percent Predicted Correctly	72%		
Mc Fadden's R squared	.24		

If we compare a base case (where all the dummy variables above take the value of 0 and the continuous variables take their average values), with cases adding each of the dummies subsequently, we can compute the impact effect of each dummy on the probability of default.

Case	Probability of Default	Differential
Base (no dummy)	.55	
Including Education	.36	- .19
Including Housing Loan	.77	+ .22
Including Total NGO Dummy	.80	+ .25

The marginal effects of the continuous variables at the sample mean are

Variable	Marginal Effect
Membership Length	+ .07
Operated Land	- .006

The education variable has been defined as a binary where it is 1 if household and/or the borrower has had any schooling. The impact effect computed above suggests that the probability of default by an 'educated' borrowing households is on average 17.4% lower than an 'uneducated' borrowing household. This effect remains almost unchanged (14% reduction) after the income position of the household measured by adjusted per capita income is controlled for (not shown here). This suggests that the education status of the household has strong negative effect on default status irrespective of the household's income position.

The total operated landholding of the household is the other variable negatively associated with default status of the borrowing household but is positively associated with default after a certain level. This threshold level in the data set turns out to be very high, about 400 decimal. As there are very few (18 borrowing households) having such a operated land size, the marginal effect at the sample mean turns out to be suggesting a small negative relationship with operated land. This quadratic relationship between operated land holding and default status is consistent with other studies on default in rural finance (Lipton, M., 1976).

Housing loan as discussed above is a long term loan of large value given to members

who are 'ideal'. The eligibility criterion of this loan has many dimensions including 'need' but the most clear dimension is membership period. Borrowers have to have more than 5 years of membership with 'proven' improvement in their economic status with loan use and in 'need' for housing. The centre is also expected to be 'proper' in attendance and loan repayment. The role that the borrowers take in solving repayment problems in the centre and the cooperation they provide to the bank worker is also taken into account by the bank in defining housing loan eligibility. One would expect that the positive relationship between the bank and the borrowers who have had a housing loan would act as a negative force in the default decision of the household. This however does not seem to be the case. My results suggest that having a housing loan increases default probability by about 22%. This could either reflect the increased debt burden that such a loan imposes on the borrower or could be due to 'default-empowerment' nexus proposed in Yaqub (1995).

The next important variable positively affecting default probability is membership period. It is interesting to note that membership period has a quadratic relationship with default probability reaching its maximum at membership period 9.75 years. As the average membership period of borrowers in the sample is less than the critical level, on average an one year increase in membership period increases probability of default by about 7%. This finding is consistent with earlier studies on default in group credit programmes (Hossain, 1984; Yaqub, 1995) where membership period is shown to be positively associated with default. However, the finding that the relationship is non-linear suggests the existence of some critical membership length which is required to build the 'optimum' level of trust between the borrowers and the bank. Another reason that could possibly explain the non-linearity in the variable is the recent changes in the Grameen Bank rules regarding access to group fund where borrowers who have been members for 10 years or more will be allowed to withdraw all their group fund contributions.

The last variable that positively affects default probability is the NGO participation intensity of the borrowing household. This is a measure of household's ability to access other sources of 'cheap' finance as measured by the total credit NGO participation of the household. A value 0 implies that the borrowing household has only Grameen Bank membership while a value 1 implies that the borrowing household has other credit NGO membership.

In Madhupur area, where this part of the data set is taken from, there is a heavy presence of credit NGO interventions. Moreover, the level of coordination and cross-checking of membership overlap among NGOs is ill developed. There seems to be a consensus that as long as the same household member does not have multiple NGO

membership, multiple NGO membership at the household level is acceptable. This means that it is relatively easy for borrowing households to have membership in several credit NGOs.

Interviews with such borrowing households revealed that newer NGOs often actively encourage Grameen Bank borrowers and other members from the household to join their organisation as these members are more likely to act as motivating agents for others who might shy away from joining a relatively new NGO. Moreover, these borrowers would be more likely to understand and motivate other borrowers in the formation of effective group and centres. From the Grameen Bank borrower's perspective, it makes more sense for some other member of the household to join some other NGO rather than Grameen Bank because information sharing within Grameen Bank is strong. This means that two Grameen Bank members from the same household (which is against the official regulation) might be held responsible for each other even if they do not belong to the same group or the centre. Thus, the household, given the option, would prefer to have membership in several credit NGOs.

This however has negative consequences for Grameen Bank loans, specially when default problem becomes widespread. As our results suggest, having multiple NGO membership at the household level increases probability of default by more than 23%.

This finding lends strong support to Yaqub's 'default-empowerment' argument where he suggests that having alternative sources of finance could impair the repayment performance of borrowers (Yaqub, 1995 : 5-13). Another study (Zeller, M. and M. Sharma, 1996) finds a significant positive relationship between default and the number of self help groups in the village. In general, they find that default seems to be negatively related with local economic buoyancy. Due to placement bias, one might expect credit NGO intervention intensity to be positively associated with local economic buoyancy which in turn may adversely affect repayment performance of older NGOs in the area.

6. Conclusion

The greatest success of group credit contract pioneered by Grameen Bank is its ability to develop a template that can use local level information to offset the imperfect information constraints. The efficiency of this template, however, appears to be sensitive in a dynamic context as the underlying state-of-affairs like loan size, membership period, access to other sources of finance change.

This study suggests that NGO competition be managed and monitored in ways that do not impair each other's repayment performance. The products offered by all credit

NGOs in Bangladesh is remarkably similar (Rutherford, 1996). Intensive competition in very similar products would not only make the borrowing households indifferent between them but could also lead to the strengthening of NGO preferences for certain types of households. This calls for more product differentiation in the services offered.

Another important point that emerges from the in-depth interviews is the importance of finding alternative and complimentary ways to support larger loans disbursed. The group collateral approach seem to be most effective when loan sizes are relatively small. As the centre grows in age, some members will inevitably demonstrate greater potential for credit. Moreover, there would be expected turn over in the centre as some old members leave and new members join. The present practice of making all centre members collectively responsible for each other's loan and basing the loan size decision almost exclusively on membership period would create tensions in the centre which could snowball into a situation of 'normalised default'. As membership period is a rough measure of borrower credibility, completely abandoning the relationship between loan size and membership period might be seen to be 'unfair' to the borrowers. In view of this, a minimum ceiling on loan size based on membership may be considered while larger loans may be considered on a more sound project appraisal basis.

Group credit programmes have been remarkably successful in providing access to micro-credit to a large number of formal credit-by-passed poor. The contract and other design features that make this possible, however, can have its limitations as the underlying factors change. It seems, based on the analysis above that as programmes and their clients mature, mere reliance on peer based mechanisms might be inadequate.

References

- Armendariz de Aghion, Beatriz, "On the Design of a Credit Arrangement with Peer Monitoring", Paper Presented at the Reading Conference on *Finance Against Poverty*, March 1995, Reading, U.K.
- Besley, Timothy and Stephen Coate, "Group Lending, Repayment Incentives and Social Collateral", *Woodrow Wilson School of Public and International Affairs*, 1991, Working Paper No. 152, Princeton University, Princeton, N.J.
- Gibbons, David and Shukor Kasim, *Banking on the Rural Poor*, Grameen Bank, Mirpur Two, Dhaka, Bangladesh, 1994.
- Hossain, Mahbub, "Credit for Alleviation of Rural Poverty: The Grameen Bank in Bangladesh", *IFPRI Research Report*, No. 65, 1988.
- Lipton, Michael, "Agricultural Finance and Rural Credit in Poor Countries", *World Development*, Vol. 4, No. 7, 1976, pp. 543-553.
- Montgomery, Richard, "Disciplining or Protecting the Poor ? Avoiding the social costs of peer pressure in solidarity group micro-credit schemes", Paper presented at the Reading Conference on *Finance Against Poverty*, March 1995, Reading, U.K.
- Rutherford, Stuart, "Executive Summary : Bank Poor '96", Summary of Conference titled *BankPoor '96*, December 1996, Dhaka, Bangladesh.
- Stiglitz, Joseph, "Peer Monitoring and Credit Markets", *The World Bank Economic Review* Vol. 4, No. 3, 1990, pp. 351-366.
- Todd, Helen, *Women At the Centre : Grameen Bank Borrowers after One Decade*, Westview Press, Colorado, U.S.A., 1996.
- Varian, Hal, "Monitoring Agents with Other Agents", *Journal of Institutional and Theoretical Economics*, 1990, CXLVI, pp. 153-174.
- Wenner, Mark, "Group Credit : A Means to Improve Information Transfer and Loan Repayment Performance", *Journal of Development Studies*, Vol. 32, No. 2, 1995, pp. 263-281.
- Wright, Graham and Stuart Rutherford, "Flexible Financial Services for the Poor (and not just the implementing organisation)", Paper presented at the *International Workshop on poverty and Finance in Bangladesh: Reviewing Two Decades of Experience*, August 1996, Dhaka, Bangladesh.
- Yaqub, Shahin, "Empowered to Default ? Evidence from BRAC's micro-credit programmes", *Small Enterprise Development*, Vol. 6, No. 4, 1995, pp. 4-13.
- Zeller, Manfred and Manohor Sharma, "Determinants of Repayment Performance in Innovative Group-based Credit
-

Systems for the Poor : The Cases of BRAC, ASA and RDRS in Bangladesh", *FCND* Discussion Paper no. XX, 1996, IFPRI.

Madhupur Branch, Grameen Bank Documents Used:

- Circular Letter No. 17/95, subject "Rules and Regulations Regarding Accumulated Money in the Group Fund" dated 26.08.95 issued by Grameen Bank Head Office, Mirpur Two, Dhaka, Bangladesh.
- Centre-wise Annual Statement for year ending December 1994 and December 1995.
- Weekly Centre Statement for 1995.
- Weekly Centre Collection Sheet of June-July 1996.

Abstract

This paper looks at the question of loan default under group credit arrangements based on data collected during 1994-95 in four Grameen Bank villages in Madhupur area in Bangladesh. Besides using a formal econometric model to delineate the factors associated with loan repayment behaviour of borrowers, the paper uses in-depth interviews to emphasise the ways in which the template of group credit contract might be vulnerable. More specifically, the paper draws attention to the need for information sharing among credit institutions operating in an area, the need to diversify the services offered and finally the need to find ways of financing 'joint-liability graduate' borrowers beyond the conventional group collateral approach.

LA PERFORMANCE DE REMBOURSEMENT DES EMPRUNTEURS CHEZ LES GRAMEEN BANKS**Sommaire**

Cet article considère la question de non-repaiement de dettes dans le cadre d'arrangements de crédit de groupe. Cette étude est basée sur des données collectées dans la période 1994-1995 dans quatre villages de la région de Madhupur au Bangladesh, où la Grameen Bank est présente. En plus d'un modèle économétrique servant à déterminer les facteurs associés au comportement de repaiement de leurs dettes par les emprunteurs, cette étude utilise des entretiens approfondis pour souligner de quelle manière un modèle préétabli de contrat de crédit de groupe peut être poser problème. Plus spécifiquement, cet article fait remarquer la nécessité de partage d'information par les institutions de crédit opérant dans cette région, l'importance d'une diversification des services offerts, et enfin le besoin de trouver un moyen de financer les emprunts fonctionnant sous un système de responsabilité de groupe, au-delà du nantissement de groupe.

Books received

Maxwell FRY, *Emancipating the Banking System and Developing Markets for Government Debt*. Routledge, London 1997, pages XVIII + 280. Hb: £. 45.00, ISBN 0 415 15640 8; Pb: £. 14.99, ISBN 0 415 15641 6.

Contents: Part I: Introduction and Debt-Deficit Dynamics, 1. Why Develop Markets for Government Debt? Overview and Summary, 2. Debts, Deficits, Inflation and Growth, Part II: Captive and Foreign Markets, 3. The Central Bank and Inflationary Finance, 4. Financial Repression, 5. Foreign Debt Accumulation, Part III: Developing Voluntary Domestic Markets, 6. Prerequisites, Persuasion and Pitfalls, 7. The Players and the Markets, 8. Roles for the Central Bank.

Meine Pieter van DIJK, Roberta RABELLOTTI, *Enterprise Clusters and Networks in Developing Countries*.

Frank Cass, London 1997, 304 pages, Pb: £. 22.50 ISBN 0 7146 4333 5. EADI-book series: 20.

Contents: 1. Clusters and Networks as Sources of Co-operation and Technology Diffusion for Small Enterprises in Developing Countries, Part I: Clusters, External Economies and Co-operation, 2. Clusters of Enterprises Within Systems of Production and Distribution: Collective Efficiency and Transaction Costs, 3. Footwear Industrial Districts in Italy and Mexico, 4. The Significance of Spatial Clustering: External Economies in the Peruvian Small-Scale Clothing Industry, Part II: Flexible Specialisation, Networks or Ghettos? 5. Opportunities for Women in Ouagadougou's Informal Sector: An Analysis Based on the Flexible Specialisation Concept, 6. Industrial District or Garment Ghetto? Nairobi's Mini-Manufacturers, 7. Small Enterprise Associations and Networks: Evidence from Accra, Part. III: Examples: Technology, Credit and Internationalisation, 8. Trust Building in Tanzania's Informal Credit Transactions, 9. Enterprise Networks and Technological Change: Aspects of Light Engineering and Metal Working in Accra, 10. From SMEs to Industrial Districts in the Process of internationalisation: Theory and Practice.



Cariplo, per tutte le esigenze bancarie

*una rete di oltre 600 sportelli
in Italia e nel mondo*

Sede Centrale - Milano Via Monte di Pietà, 8



CARIPLO

CASSA DI RISPARMIO DELLE PROVINCE LOMBARDE S.p.A.



CARIPO IN THE WORLD

Cariplo and Cariplo Group: a large and diversified organisation of companies, experiences and resources to operate in all banking and near banking sectors (merchant banking, leasing, factoring, insurance, etc.). With more than 600 branches in Italy and in the most important financial markets, Cariplo provides a full range of top banking services all over the world.

INTERNATIONAL NETWORK

Branches:

LONDON

6 Lombard Street - London EC3V 9AA

MADRID

Calle Alcalá 44 - 28014 Madrid

NEW YORK

650 Fifth Avenue - 25th floor - New York N.Y. 10019

GRAND CAYMAN

c/o New York Branch - 650 Fifth Avenue
New York N.Y. 10019

HONG KONG

Bank of America Tower - 18th floor
12 Harcourt Road - Central Hong Kong

Shareholdings:

- **BANKHAUS LÖBBECKE & CO.**
Fasanenstrasse 5 - 1000 Berlin 12
(2 city branches in Berlin, and branches
in Frankfurt, Braunschweig, Magdeburg).
- **CARIPO BANK INTERNATIONAL S.A.**
12 Rue Goethe - 1637 Luxembourg
- **COMPAGNIE INTERNATIONALE DE BANQUE**
42 Rue la Boétie - 75008 Paris (branch in Lyon)
- **EUROPÄI KERESKEDELMI BANK Rt. EKB**
7/13 U. Hegyalja - 1016 Budapest

• Controlling interest

Representative offices:

ATHENS

13, Panepistimiou Str. - 105 64 Athens

BEIJING

811 Scite Tower - 22 Jianguomenwai Da Jie
100004 Beijing

BRUSSELS

Avenue Louise 250 - B.te 63 - 1050 Brussels

CHICAGO

190 South La Salle Street, Suite 2890
Chicago, IL 60603

FRANKFURT/MAIN

Gutleutstrasse 32 - 6000 Frankfurt/Main 1

MOSCOW

Pereulok Bolshoy Gnezdnikovsky 7
4th floor - 103009 Moscow

PARIS

10 Rue de la Paix - 75002 Paris

SEOUL

Oriental Chemical Building - 3rd floor
50 Sokong-Dong Chung-Ku - 100070 Seoul

TOKYO

Enokizaka Building - 3rd floor
12-12 Akasaka 1 - Chome - Minato-Ku, Tokyo 107



CARIPO

CASSA DI RISPARMIO DELLE PROVINCE LOMBARDE S.p.A.

HEAD OFFICE: 8, VIA MONTE DI PIETA' - 20121 MILAN - ITALY

CARIDATA *company*

*CARIDATA is the Information Technology company
of CARIPLO Group: born in 1989 as a point-stock from*

*CARIPLO bank (60% share holder)
and Olivetti Information Services (40%).*



Line of business:

- *Intervention analysis -*
- *Business organization analysis and organizing advice -*
- *Development, production and sale of software -*
- *Distribution of packages -*
- *Training and advisory services in information processing -*
- *Operation of data processing facilities -*



Head and main office: Via Pirelli 16/B - 20124 Milan - ph. 0039-2-675081 - fax 0039-2-66985594

CARIDATA

CARIDATA SPA - TECNOLOGIE INFORMATICHE

GRUPPO CARIPLO

Management by Professionals

Fondigest is the asset management company of the Cariplo Group. Over the past ten year, **Fondigest** has achieved a leading position on the Italian investment management market, with over 8000 billion lire in assets under management and 17 mutual funds investing on the principal financial markets all over the world.

The reasons of such a success

Our qualified management team.

Thanks to an extensive network of relationship with international analysts and locally based investment specialists, our portfolio managers get hold of the most up-to-date information to act quickly in response to rapid movements in the financial world.

To seize the opportunities offered by Italian bonds and equities and maximize the potential return from investments we have the experience and the knowledge you are looking for.

Our commitment to customer's service.

We provide our customers with a broad and complete family of mutual funds to suit their needs and offer them flexibility to switch investments as their needs change.

FONDIGEST

Società per Azioni per la gestione
di fondi comuni d'investimento mobiliare

⊗ GRUPPO CARIPLO

For further information contact **Fondigest SpA** - Foro Buonaparte, 35 - 20121 Milano - Italy - Tel. (2) 721481

The Best Partners All Over The World



nashuatec  **Rex-Rotary**
Gestetner

Copiers - Fax - Multifunctional Products
CopyPrinters - PC Printers

*Nrg Group is leader in office automation with its
wide range of innovative products and technologies.
We can assure Productivity, Cost Saving and Assistance
to solve every need: in 130 Countries, all over the World*

NRG ITALIA

Via Caviglia 11 - 20139 Milano - Phone (02) 53561 - Fax (02) 5356.555 - ISDN (02) 5820.7042

The authors:

Dr. Monica S. Fong is the Coordinator on Women in Development for the Europe, Middle East and North Africa region in the World Bank. Her long standing interest in the provision of financial services for poor rural women stems from her analysis and evaluation of development projects and programmes directed to the rural poor with the International Fund for Agricultural Development and the Food and Agriculture Organization of the United Nations. She has also written extensively on women in the agricultural labour force in the developing world.

Dr. Heli Perrett is an independent consultant, specializing in social aspects of development planning and implementation. She is the author of numerous books and reports on communication, education and behavioural considerations in rural development planning. In addition to her extensive writing, she has continued to pursue a career as educator and has taught at the Catholic University of Peru in Lima, and the American University in Washington, D.C. among others.

163 pp.

Lit. 25.000

ISBN 88-85955-02-9

Summary

Rural women have been one of the most consistently neglected groups in development planning and programming, and, paradoxically, one of the groups with the greatest unrealized potential. Direct access to credit, accompanied by savings, can become a catalyst for change that brings benefits to rural women, as well as to their families and communities. The book will address this issue as follows:

— In the introductory chapter, the reasons for direct, lending to rural women in developing countries are highlighted and women's creditworthiness is reviewed.

— A review of women's informal practices of borrowing and saving, their advantages and disadvantages is given in Chapter 2.

— This is followed by an overview of women's limited use of formal financial markets for borrowing and savings, and existing constraints on the supply of credit to women in Chapter 3.

— Chapter 4 discusses women's demand for credit, its assessment and promotion, with reference to both institutional credit and to savings.

— Chapter 5 provides an overview of institutional strategies for providing financial services to rural women, either separately or together with men, with extensive case illustrations; the variety of operational linkages that are being tried between credit and savings.

— The role, development and functioning of grassroots credit and savings groups, and the factors that determine its effectiveness in practice are discussed in Chapter 6.

— The concluding chapter summarizes what we have learned about the planning of appropriate financial services for women and the related policy implications.

ORDER FORM:

Please send me _____ copy (ies) of the above mentioned volume.

Name _____

Address _____

City _____ Country _____

Date _____

Signature _____

Please, make cheques payable to:

WOMEN AND CREDIT

The Experience of Providing Financial Services
to Rural Women in Developing Countries

"GIORDANO DELL'AMORE" FOUNDATION
Via San Vigilio, 10
20142 MILAN - Italy
Tel. 8135341, telex 313223, Fax 8137481

RIVISTA INTERNAZIONALE DI SCIENZE ECONOMICHE E COMMERCIALI

RISEC

INTERNATIONAL REVIEW OF ECONOMICS AND BUSINESS

No. 3, September 1997, Vol. 44

MAURICE ALLAIS: The Liberalization of Trade and the European Community's Experience - DAVIDE CANTARELLI, TOMMASO DI FONZO, and ALMAS HESHMATI: Testing an Inhomogeneous VES Production Function by Means of Panel Data - BRUNO GIACOMELLO: Returns to Scale and Elasticity of Substitution for Functions of Implicitly Defined Production: An Application to the 2CMC Model - GIANNIS KARAGIANNIS and GARY G. STOREY: Alternative Hedging Decisions of a Two-Product Competitive Firm under Output Price Uncertainty - HSING-TING CHAN and YEUNG-NAN SHIEH: The Effect of Sales Taxes on the Location Decision of the Firm - M.S. MARZOUK: The Evaluation of War Damage Costs: A Historical Overview and Implications to the Gulf War - PAOLO MATTANA: Evaluating Old and New Growth Theories. An Inquiry into Italy's Growth Process by Means of Time Series Informative Sets - YU HSING and WEN-JEN HSIEH: Testing the Augmented Solow Growth Model: The Case of Taiwan

ASPECTS OF JAPANESE ECONOMY AND SOCIETY

ALI M. EL-AGRAA: A Bird's Eye View of Japanese FDI - GIOVANNI CAPANNELLI: Buyer-Supplier Relations and Technology Transfer: Japanese Consumer Electronics - DARWIN WASSINK and ROBERT CARBAUGH: Trade Policy and Long-term Macroeconomic Stability: The Case of Japan - JALEEL AHMAD: Is Japan Different? Reading Sakakibara - ILHAN MERIC, GEORGE C. ROMEO, RICHARD MARMON, and GULSER MERIC: A Comparison of the Financial Characteristics of U.S. and Japanese Machinery and Equipment Manufacturing Firms

A quarterly journal. Annual subscription rate: Lire 200.000 (Italy); Lire 300.000 (abroad). - Bound back volumes available at special prices - Subscriptions to: CEDAM Spa - Via Jappelli 5 - 35121 Padova (Italy) - Tel. +39-49-656677. Fax: +39-49-8752900 - Postalgiro account: No. 205351 - Editorial Office: Via Teulié 1 - 20136 Milano (Italy) - Tel. & Fax: +39-2-58317434.

While not implying acceptance, payment of fees, responsibility for loss or return, the Editor encourages the submission of manuscripts concerning money, financial intermediaries, financial techniques, and experiments in savings mobilization in developing countries. Manuscripts submitted for publication (two copies) should be in English or French, 4,000 - 10,000 words in length with a 200-400 word summary, typed on one side only of the sheet and double-spaced. Footnotes should be indicated by consecutive numbers throughout the paper. References in the text should be quoted by the author's last name and year of publication, e.g. Shaw (1973) or (Shaw, 1973). The title should be as compact as possible. Submission of the paper implies that it is an unpublished work, not yet submitted for publication elsewhere. Sections and subsections of the paper should be indicated in cardinal numbers (e.g. 1.; 1.1.; 1.2.; etc.). Mathematical formulas should be numbered consecutively as [1], [2] etc. Figures should be limited in number and submitted in a form ready for the printer. References at the end should be listed alphabetically and quoted as follows:

- for articles: Galbis Vicente, "Monetary and Related Policies in Ministates", *Savings and Development* Vol. VIII, No. 4, 1984, pp. 291-350;
- for books: McKinnon Ronald, *Money and Capital in Economic Development*, The Brookings Institution, Washington D.C., 1973. All communications should be sent to the Editor.

"GIORDANO DELL'AMORE" FOUNDATION

Via S. Vigilio, 10 - 20142 MILANO (Italy) - Tel. 8135341 - Telex 313223 - Fax 8137481

Signed articles do not necessarily reflect the opinion of Savings and Development or of its Editor and no responsibility is accepted for them.

Bien que cela ne signifie pas l'acceptation ou le paiement de frais, et que toute responsabilité soit déclinée pour la perte ou la restitution, la Rédaction souhaite l'envoi de manuscrits concernant la monnaie, l'intermédiation et les techniques financières, et les essais pour la mobilisation de l'épargne dans les pays en voie de développement. Les articles (deux copies) devraient être rédigés en Français ou en Anglais, d'une longueur de 4.000 à 10.000 mots avec un résumé de 200 - 400 mots. Toute communication devra être adressée à la Rédaction:

FONDAZIONE "GIORDANO DELL'AMORE"

Via S. Vigilio, 10 - 20142 MILANO (Italie) - Tel. 8135341 - Telex 313223 - Fax 8137481

Les articles portant signature ne reflètent pas nécessairement l'opinion de Savings and Development ou bien de la Rédaction et toute responsabilité est déclinée par ceux-ci.

RASSEGNA TRIMESTRALE

REGISTRATA PRESSO IL TRIBUNALE DI MILANO AL N. 102 DEL 27.3.1974

DIREZIONE, REDAZIONE, AMMINISTRAZIONE

FONDAZIONE "GIORDANO DELL'AMORE" - CARIPLO - VIA S. VIGILIO, 10 - 20142 MILANO

TEL. 8135341 - TELEX 313223 - FAX 8137481

Direttore Responsabile

FELICE TAMBUSSI

Fotocomposizione

La Compone - San Giuliano Milanese (MI)

Stampa

Typolitho FIVE - Borghetto Lodigiano (LO)

Stampata su carta R 600 MATT SATIN delle Cartiere BURGO

E-mail: fond.gda@mail.carbusiness.it

INDIAN JOURNAL OF APPLIED ECONOMICS

INTERNATIONAL ECONOMIC QUARTERLY

IJAE's articles address all areas of applied economics and econometrics including their applications to social behaviour

Chief Editor: **K. Puttaswamaiah**

Founder Patron: Late Jan Tinbergen, Nobel Laureate

EDITORIAL ADVISORY BOARD

NOBEL LAUREATES

Paul A. Samuelson, MIT, Cambridge, Wassily Leontief, New York Univ., U.S.A.,

Franco Modigliani, MIT, Cambridge, U.S.A., **Robert M. Solow**, MIT, Cambridge,

Professors and Economists

M.S. Swaminathan, Agricultural Scientist, India; **Michael Lipton**, Sussex Univ., U.K.; **Ashok Mathur**, J.N. Univ., India; **M.P. Todaro**, Population Council, U.S.A.; **G.C. Harcourt**, Cambridge Univ., Cambridge; **Rati Ram**, Illinois State Univ., U.S.A.; **S. Devarajan**, The World Bank, U.S.A.; **Yash Mehra**, Federal Reserve Bank of Richmond, Virginia; **Padma Desai**, Columbia Univ., U.S.A.; **Keith Griffin**, California Univ., U.S.A.; **Bala Batavia**, Depaul Univ., U.S.A.; **Harold O. Fried**, Union College, New York; **James W. Dean**, Western Washington University, U.S.A.; **M.I. Ansari**, Athabasca Univ., Canada; **J.W. Neville** and **B.B. Rao**, NSW Univ., Australia; **Jocelyn Horne**, Macquarie Univ., Australia; **W.P. Hogan**, Sydney Univ., Australia; **Kiyoshi Nakamura**, Waseda Univ. of Tokyo, Japan; **Claude Menard**, Acomand Université de Paris I, France; **Arnaldo Mauri**, Università de Milano, Italy.

CONTENTS

Vol. 6	No. 3	July-September 1997
<p>W. P. Hogan, Some Issues in Corporate Governance John Lodewijks, Old and New Keynesians R. S. Dhananjayan and N. Sasikala Devi, Exports and Economic Growth: A Study of Select Nations in Asia and Europe during 1980-81 to 1993-94 George Manzano, A Note on Emerging Market Returns and The Neo-Classical Growth Model Ismail Shariff, Investment in Human Capital and Economic Growth: An Inherent Relationship Victor O. Asekunowo, Real Balance Effect: Is it Real? Dipendra Sinha, Behaviour of Import Demand in India: A Cointegration Approach Satya R. Chakravarty and Diganta Mukherjee, On a Measure of Mobility K. R. Shanmugam, Value of Life and Injury: Estimating using Flexible Functional Form</p>		
Vol. 6	No. 4	October-December 1997
<p>John Lodewijks, Looking Thru The Rostovian Crystal Ball Animesh Ghoshal, The Realignment of International Trade in Central Europe Ismail Shariff, The International Economic Repercussions and Limitations of Pollution Control Anita Gill and U. C. Singh, Financial Sector Reforms, Rate of Interest and The Rural Credit Markets: The Role of Informal Lenders in Punjab P. C. Sarkar and K. Seeta Pralbu, Economic Growth and Human Development: A Study of South and East Asian Economies Victor O. Asekunowo, Post-Rachiff Effect: A case for Regressive Taxation P. S. Mohana Kumar, The Measurement of Productive Efficiency: Frontier Production Function: A Brief Survey Surajit Sinha, Marshall Revisited G. Mythili, Subsidy-in-kind Stigma Effect R. Duraiswamy and K. V. Govinda Raju, Silk Worm Seed Production in Andhra Pradesh in the Context of Privatization</p>		

Due to rising cost of printing and other expenses including postage by airmail, we are forced to revise the subscription rate effective from January 1998 as mentioned below:

Contributors are requested to co-operate.

Annual Subscription Rates

	India	U.S.A.	U.K.	Other Countries
Institutions	Rs. 500/-	\$ 120	£ 80	Equivalent of U.S. \$
Individuals	Rs. 450/-	\$ 90	£ 65	

This Journal is being listed and abstracted in the Journal of Economic Literature of the American Economic Association and is being covered in online.

Special Issue on Jan Tinbergen was published in 1996.

Similarly, special Issues on Cost-Benefit Analysis and Sir John Hicks are scheduled for 1998.

Listed and abstracted in JEL and covered on line.

Also abstracted in the International Development Abstracts, Elsevier.

All Correspondence regarding subscriptions,

advertisements and other business matters may be made

to the **Chief Editor or Publisher** of the Journal

Payments may be made to **Indian Journal of**

Applied Economics

by crossed Demand Draft only



335, 3rd Cross, 2nd Block, 3rd Stage, Basaveswaramagar,

Bangalore-560 079, India. Tel: 091-080-3307198/3350484.

Fax: 091-080-3303239

E-mail: ijae.kps@access.net.in

ISSN 0971-8281

No. R.N. 086110/91





ISSN 0393 - 4551