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ABSTRACT

Study revealed that loan supervision and collection were the most important variables explaining agricultural loan repayment behavior by small farmers in Nepal. Most studies categorize repayment factors into ability and willingness of farmers to repay. Willingness to collect and other institutional problems may be more important in many credit programs.

BIOGRAPHICAL DATA

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INTRODUCTION

Agricultural credit programs are in serious difficulties in many developing countries because of heavy loan delinquency and default. The World Bank conducted one of the few comparative analyses of the subject. Data on the arrears rate (defined as 100 minus the repayment rate) were reported for 38 agricultural credit programs in Africa, Asia and Latin America. The arrears rate varied from two to 95 percent. Only 6 programs reported a rate of 10 percent or less. One-half of the programs had rates exceeding 40 percent, and eight reported rates greater than 60 percent. Although these data are somewhat misleading because of variations in definition and data quality, they clearly show serious problems for many programs.

What explains loan repayment performance by farmers? Boakye-Dankwa recently reviewed the literature and concluded that the reasons can be divided into factors related to ability to repay and willingness to repay. Several studies have been conducted to determine which factors are most important in specific programs. This paper reports on loan repayment by small farmers in Nepal, a country which fairly recently expanded agricultural credit. Historically, Nepal has not had serious repayment problems, but the data available from the Agricultural Development Bank (ADB) and the farm survey results reported in this paper suggest an emerging problem. Furthermore, these results suggest that loan supervision and collection procedures are the most serious factors affecting repayment. It appears that Nepal is following an all too familiar pattern of expanding

agricultural lending with insufficient attention to collections. It is hard to see how the agricultural lenders, in this case largely the ADB, can survive with such high delinquency and probable default unless the government and foreign donors continue to pump in fresh funds. We think this same type of situation underlies many of the problems found in credit programs in other countries.

A FARM SURVEY OF REPAYMENT

Institutional credit is available from three principal sources in Nepal: the ADB, commercial banks, cooperative societies and Sajha institutions which are like cooperatives, but are smaller scale. Little published data on repayment exist except for the ADB, and even in this case it is reported in such a way that it is difficult to clearly understand the degree of delinquency or default.. It appears that a large proportion of the expansion in the ADB portfolio has been due to an inflow of outside funds rather than relending repaid loans.

To clarify debt repayment generally and analyze factors associated with repayment, the senior author conducted a survey of 150 farmers located in the Terai area of southern Nepal.[1/] This is one of the most productive areas of the country. Paddy, wheat, tobacco, sugarcane, jute seeds and vegetables are the primary crops. The area is easily accessible and has a relatively good road system. The sample farmers were randomly selected from a list of borrowers compiled from the local

cooperatives and ADB branch. Interviewing was conducted in the end of 1979 and the survey period covered the previous year. Farmers were asked to report all loans, repayment schedules, amount of principal and interest paid, and information on the year's farming operation.

Table 1 reports outstanding principal and interest due at the beginning of the year, principal and interest due on loans made during the year, and amount repaid by the end of the year as reported by the farmers. It was assumed that farm size and proportion of production marketed would affect repayment so the sample farms were divided into three groups. Von Pischke argued that measurement problems in analyzing loan repayment have been ignored. We show in another paper how choice of measure can sharply change the reported status of a lender's portfolio and why repayment rate, defined as the proportion paid of total interest and principal due, is a preferred measure. That is the definition used in this study.

Overall, the sampled farmers had a repayment rate of only about 28 percent for the year. MED farmers with over 4 bigha of land (one bigha equals 0.6825 hectares) repaid only 26 percent. SFL farmers with less than 4 bigha and 40 or more percent of farm production marketed repaid 43 percent, while SFS farmers also with less than 4 bigha and less than 40 percent marketed repaid about 24 percent. Thus, repayment rates were very low. There was no clear pattern of the larger farms having a lower repayment rate than smaller farms as found in some other studies.

TABLE 1: Repayment Requirement and Repayment Performance of Sample Farms by Farm Type

Items	Average Amount per Farm[a]			
	Total Sample	MED Farms	SFL Farms	SFS Farms
		(Nepalese rupees)		
Outstanding Loans[b]	7,376	19,361	3,455	1,327
Outstanding Interest[c]	1,340	3,335	697	326
Current Borrowings[d]	2,487	7,568	495	170
Current Interest[e]	1,222	3,334	459	210
Total Amount Due	12,425	33,598	5,105	2,034
Amount Repaid	3,507	8,838	2,204	487
Repayment Rate (%)	28.2	26.3	43.2[f]	23.9[f]

a/ MED have 4 bigha or more of land. SFL farms have less than 4 bigha and 40 percent or more of marketed surplus. SFS farms also have less than 4 bigha, but market less than 40 percent of total production. One bigha equals 0.6825 hectares.

b/ The portion of debt outstanding at the beginning of the survey year which is due on or before the last day of the survey year.

c/ The outstanding interest due at the beginning of the survey year.

d/ Borrowings made during the survey year which fall due within the survey year.

e/ Total interest that is due on or before the last day of the survey year.

f/ The repayment rate for these two groups averaged together was 37.6 percent.

Surprisingly, only about five percent of the total principal and interest due was owed to noninstitutional sources including landlords, moneylenders, friends, etc. The repayment rate on these noninstitutional loans considered separately was somewhat better at 38 percent, but still much lower than expected.

The farmers were asked to identify the factors that affected their loan repayment performance. Thirty-eight percent of the responses concerned causes beyond their control including poor weather conditions, failure of dug wells and other natural calamities. These factors can be associated with ability to repay. Another twenty-seven percent of the responses were associated with lender policies and procedures. Other factors included unfavorable market conditions and high social expenditures. Nine percent of the responses were associated with political factors such as the rumor that some loans were going to be forgiven.

A MODEL OF REPAYMENT

An OLS regression model was estimated using some of the major variables identified in the literature as important in explaining loan repayment. The results are reported in Table 2 for the overall sample as well as the three subgroups. The R^2 was reasonable for this type of study, and many coefficients were significant with signs as expected from the literature.

TABLE 2: Ordinary Least Squares Model Results

Independent Variables	Total Farms	MED Farms	SFL Farms	SFS Farms
Sample size	150	45	45	60
Intercept	-17.4784	-24.990	-26.4314	2.0876
Farm Size in Bigha (X_1)	-0.8052 ***(-2.393)[a/]	-0.390 (-0.826)	0.9721 (0.335)	1.6150 (0.391)
Gross Receipts per Bigha (X_2)	0.0033 ***(2.502)	0.002 (0.515)	0.0050 **(2.480)	0.0039 *(1.451)
Proportion of Production Marketed in Percent (X_3)	0.2975 ***(2.370)	0.427 *(1.581)	0.0308 (0.104)	0.3136 (0.771)
Ratio of Household Cash Expenses to Total Income (X_4)	-10.061 *(-1.585)	-7.179 (-0.463)	0.3532 (0.049)	7.2267 *(1.476)
Preloan Supervision (D_1)	22.7094 ***(4.318)	25.047 **(2.392)	34.7926 ***(3.661)	5.4727 **(1.776)
Postloan Supervision (D_2)	8.5623 *(1.448)	3.290 (0.287)	14.2987 (1.375)	6.5910 (0.674)
Reminder Letters (D_3)	14.5414 ***(3.262)	5.942 (0.695)	11.8864 **(2.528)	6.4164 **(1.876)
Collection Visits (D_4)	18.6992 ***(4.314)	19.191 **(1.982)	15.7839 **(2.547)	1.8910 **(2.546)
R^2	0.427	0.367	0.714	0.346
F-Ratio	13.127	2.608	11.215	3.376

a/ The absolute values of t-statistics are shown in parentheses.

* Significant at 10 percent level.
** Significant at 5 percent level.
*** Significant at 1 percent level.

Farm size was significant and had the expected negative sign for the entire sample, but, as expected, that significance disappeared when the sample was subdivided. Thus, farm size is a significant factor across the wide range of farm sizes found in the sample, but not for the narrower range found within each group. Higher income should lead to better repayment as the farmer has more resources to meet cash requirements. That result was borne out by the positive sign for the gross receipts variable in three out of four models.

The higher the proportion of production marketed the greater should be repayment potential for two reasons. First, it is expected that basic family consumption needs will have been largely met so the household has a surplus to market. Second, the greater the marketings the greater the income for use in paying cash requirements. That relationship was also confirmed in two of the four cases. On the other hand, cash expenditures for other purposes would be expected to be negatively related to loan repayment. That was true in the overall model, but a positive sign was found for the SFS model.

The most interesting results were obtained from the four dummy variables introduced to capture various aspects of loan management and collection. The first of these (D_1) was given a 1 if the lender made at least one preloan supervision visit to the farm. The second (D_2) was given the value of 1 if at least one post loan supervision visit was made. D_3 was given

the value of 1 if the lender sent a formal letter requesting repayment. D_4 was given the value of 1 if the lender made formal collection visits to the farm.

The coefficients for all four of these variables in all models were positive. The preloan (D_1) and collection visit (D_4) variables were significant in all models, while the post-loan (D_2) variable was significant in one model, and reminder letters (D_3) in three out of four cases.

Since a number of observations have a dependent variable with zero values, the regressions were rerun using Tobit procedures to test for truncation bias. The signs for all the coefficients were the same as in the OLS models and the significance level was somewhat higher for some variables. Thus, we believe the results are quite reliable.

IMPLICATIONS

These results imply that variables associated with loan supervision and collection are very important in loan repayment in Nepal. Usually these types of variables have been analyzed in other studies under the heading of the borrower's willingness to repay. We feel the emphasis is misplaced. Rather, these variables should be defined as willingness of the lender to collect and the Nepal case suggests a broader, overlooked issue in much research. When lenders demonstrate clear concern that loans funds should be carefully used and repaid, farmers respond by improved loan repayment. However, when lenders

demonstrate a casual or even indifferent attitude, farmers correctly perceive that repayment is not so essential either for the lender or for their own future borrowing prospects. It is not surprising that farmers respond this way, but it is surprising that lenders all too frequently fail to adopt these standard loan management and collection procedures.

Why? Obviously, supervision and collection represent costs which must be compared to expected benefits, and the benefits may not be clearly anticipated in the early stages of a credit program. We suspect the real answer is likely to be even more fundamental, however. Nepalese policy during the past several years emphasized an expansion in credit supplies and the ADB has been charged with the primary responsibility of achieving this objective. Donor agencies have provided large amounts of external resources to the ADB. Although the ADB has some of the best talent found in Nepal, it is clearly overextended. It is logical that it has spent relatively more effort in meeting lending targets, many associated with donor programs, than in monitoring loan repayment. Willingness and ability to collect have been limited. Simply improving loan collection procedures will not resolve all the Nepalese loan repayment problems, but it would likely lead to an improvement.

This problem is symptomatic of many agricultural credit programs. The emphasis in the early stages of a program is on lending. Accounting procedures concerning loan repayment are

neglected. Decision makers frequently do not identify repayment problems early in the life of the program and the continued inflow of new funds permits an expansion in total loan portfolio. Once these funds are lent out, however, the total portfolio begins to decline as new loans can only be made by recycling repayments of old loans. The program eventually withers and may even die. The lucky farmers with unpaid loans end up receiving nice income transfers, but the unlucky ones that received loans and repaid or received no loans must wait for a new or reincarnated credit program. Paradoxically, honest farmers are penalized and dishonest ones rewarded. We hope this is not the scenario that will emerge in Nepal, but the current repayment situation must be quickly and seriously addressed if it is to be avoided.

FOOTNOTES

*The authors appreciate the suggestions given by an anonymous reviewer.

1/ Complete results of the study are found in Maharjan.

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