

## CHAPTER VI

### REPAYMENT OF CREDIT

The evidences in literature reveal that the recovery of formal loans is quite poor while that of informal credit is quite impressive (Binswanger et al 1985, Ghate, 1992). However, the evidences are inconclusive with regards to pattern of overdues in formal credit based on the type of agency, size class or regions. Generally recovery/default rates are measured at the supply side (from the lenders' side) in two important ways, i.e., on the basis of 'demand' as well as on the basis of 'outstandings'. The first method, i.e., Demand, Collection and Balance (DCB) method is being popularly followed by formal agencies. Under this method, the amount of principal or part of the principal along with interest falls due in a specified period of time i.e., quarter, half year or year based on the repayment schedule is taken as "demand". The "collection" of amounts with respect to this demand during the specified period is taken as recovery. The balance is considered as "overdue". Thus the demand and collections are flow concepts, as the amounts are cumulative over a period of time. However, the balance/overdue is the stock concept. The recovery and overdue percentages are arrived with respect to demand. In the second method, the default/overdue percentages are directly estimated with respect to outstanding at a point of time.

However, in the present study, it is attempted to examine the repayment performances at the demand side (from the borrowers' side). The repayment performances of sample

households with respect to both formal and informal credit in the study area, during 1991-92 are estimated.<sup>1</sup> The data is analysed with respect to proportion of fully repaid loans out of total number of loans availed during the reference year (1991-92) as well as the proportion of repaid loan amount out of total loan amount.<sup>2</sup>

$$\begin{aligned} \text{Repayment performance} & & \text{Number of fully repaid loans} \\ \text{in terms of number of} & = & \text{at the time of survey} \\ \text{Loans} & & \text{-----} \times 100 \\ & & \text{Total number of loans transacted} \\ & & \text{during reference period (1991-92)} \end{aligned}$$

$$\begin{aligned} \text{Repayment performance} & & \text{Amount of credit repaid at} \\ \text{in terms of amount} & = & \text{the time of survey} \\ & & \text{-----} \times 100 \\ & & \text{Total amount of credit} \\ & & \text{transacted during the} \\ & & \text{reference period (1991-92)} \end{aligned}$$

Since most of the credit transactions are short term loans and repaid within the reference year or before period of survey, this method is followed. However, if the period of repayment of loans (such as agricultural investment loans) is more than 1 year duration, the repayment performance for them may be underestimated by adopting this method.

**Repayment Position of formal and Informal Credit in the Selected Villages**

A perusal of Table-6.1 reveals that the repayment of informal credit is impressive ranging between 60 to 85% in all the three villages in terms of both the number of loans

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1. Repaid upto June '92, since most of loans are less than 1 year duration.
  2. Since the period of repayment of loans for agricultural investment purposes are more than 1 year duration, the repayment performance for them may be underestimated by adopting this method.

as well as amount involved. On the other hand the repayment position of formal credit is less than 50 per cent. Among the villages, the recovery of informal credit is the lowest in the backward village, while it is the highest in commercialised village. Further, it is interesting to note that the trader lenders could recover almost all of their lendings fully, the farmer lenders could not recover the same in an effective manner. Therefore, the analysis exposed significant differences in repayment position of a) formal credit and informal credit b) farmer lenders and trader lenders and also c) the inter-village differences in the repayment of informal credit.

**Table 6.1**

**Repayment position of formal and informal credit by lender types in the selected villages**

**(Figures in percentages)**

S.No. Particulars	Developed village		Commercialised village		Backward village	
	Proportion of fully repaid loans out of total loans	Proportion of repaid loan amount out of total loan amount	Proportion of fully repaid loans out of total loans	Proportion of repaid loan amount out of total loan amount	Proportion of fully repaid loans out of total loans	Proportion of repaid loan amount out of total loan amount
I. Formal credit agencies	46.51	49.10	42.85	40.81	40.90	46.07
a. Cooperatives	42.85	47.90	44.44	40.40	-	-
b. Commercial banks	52.38	50.91	50.00	41.18	40.90	46.07
c. Regional Rural Banks	0.00	0.00	-	-	-	-
II. Informal credit agencies	86.62	71.79	85.71	80.43	74.34	60.28
a. Farmer-lenders	69.70	59.78	80.00	57.60	67.69	46.28
b. Trader-lenders	97.30	96.41	100.00	100.00	96.67	99.42
c. Other lenders	84.62	69.30	62.50	55.75	61.11	38.37
III. Total credit agencies	72.09	64.27	76.53	71.64	68.89	58.34

Source: Field data

Though the explanations are available in the literature regarding the differences in repayment of formal and informal credit, it is to be examined why there are significant

differences in between the informal lenders and in between the villages. In order to get an explanation to the above, we may have to study in detail the repayment pattern of informal credit linked with various factor and product markets, involved by various lenders discussed above.

### **Repayment of Linked and Non-linked Credit**

The repayment is higher in case of linked credit than that of non-linked credit in all the villages. Though there is no considerable difference in repayment performance of linked credit across the villages which ranged from 85 to 90 per cent, a clear pattern can be observed in case of repayment performance of nonlinked credit (Table 6.2). It is the highest (52.48 per cent) in developed village, followed by commercialised village (33.85 per cent) and it is

**Table 6.2**  
**Repayment Performance of Nonlinked and Linked Credit under Various Types of linkages**

Sl. No.	Repayment particulars	Developed village		Commercialised village			Backward village	
		No.	Amount	No.	Amount	No.	Amount	
	Credit linked with							
	i) Land market	85.71	95.60	0.00	0 .00	80.00	70.80	
	ii) Labour market	61.54	37.21	89.29	71 .40	80.00	66.80	
	iii) Input market	100.00	100.00	100.00	100 .00	100.00	100.00	
	iv) Output market	90.91	84.31	100.00	100 .00	91.67	99.15	
	v) Input-Output market	100.00	100.00	100.00	100 .00	100.00	100.00	
	vi) Other linkages	100.00	100.00	100.00	100 .00	100.00	100.00	
	I Total linked credit	91.03	85.69	93.65	90 .10	91.78	85.14	
	II Total nonlinked credit	64.71	52.48	50.00	33 .85	42.50	23.80	
	III Total informal credit	80.62	71.79	85.71	80 .43	74.34	60.28	

Note: 1. No. denotes percentage of repaid loans out of total credit transactions.

2. Amount denotes the percentage of amount repaid out of total loan amount

Source: Field data

the lowest in backward village (23.80 per cent).<sup>3</sup> The foregoing analysis reveals that the risk of default which is higher in case of non-linked credit is reduced by entering into interlinkages of credit with other markets. Therefore it shows that the interlinkages have been utilised as risk reducing mechanism, as they are an enforcement device in honouring the credit contracts.

Among the different types of linkages, the repayment performance of credit linked with land and labour markets is comparatively lower than other types of linkages. In all other types, there is completely no default and almost 100 per cent repayment is observed. Thus, we have come across an interesting observation that the repayment performance of credit linked with labour market is the lowest of all other types of linkages. To understand the reasons for the above, it is to be noted here that most of the loans linked with labour market in the study villages constitute credit links with Annual Farm Servant (AFS) system and loans involving labour migration through labour contractors. There is an incentive both for employers of AFS and labour contractors for keeping a part of loan unpaid so as to enable them to perpetuate the debt and hence the continuity of labour contract. It may be the main reason for the lower probability of repayment of loans linked with labour market.

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3. However, it has to be kept mind that the non-linked loans include medium term loans for agricultural investment purposes, which are not repayable fully during the reference year. We already observed earlier that these agricultural term loans are higher in backward village. To that extent, the repayment performance is underestimated.

Repayment Performance of Linked and Non-linked Credit among Lender Classes

The data presented in Table 6.3 clearly reveals that there is significant difference in repayment performance between linked and non-linked credit advanced by different lenders. The farmer lenders recovered 70 to 80 per cent of linked credit amount in all the villages. Similar pattern is observed in case of 'other lenders' also. On the other hand, the farmer-lenders could recover only about 20% to 40% of non-linked credit in the selected villages. Same is the case with 'other lenders' also regarding non-linked credit (except in developed villages). However, the trader-lenders recovered almost all of their credit without any overdues

**Table 6.3**  
**Repayment Performance of Linked and Nonlinked Credit by Lender Classes**

Type of lender	Developed Village			Commercial Village			Backward Village		
	Linked	Nonlinked	Total	Linked	Nonlinked	Total	Linked	Nonlinked	Total
1. Farmer lenders									
a. Proportion of repaid loan transactions	86.11	50.00	69.70	90.00	50.00	80.00	86.84	40	67.69
b. Proportion of repaid loan amount	80.26	41.82	59.78	70.63	32.84	57.60	71.00	19	46.28
2. Trader lenders									
a. Proportion of repaid loan transactions	97.30		97.30	100.00	-	100.0	96.67	-	96.67
b. Proportion of repaid loan amount	96.41		96.41	100.00	-	100.0	99.42	-	99.42
3. Other lenders									
a. Proportion of repaid loan transactions	80.00	85	84.62	75.00	50.00	62.50	100.00	46	61.11
b. Proportion of repaid loan amount	48.57	76	69.30	74.14	36.36	55.75	100.00	33	38.37
4. All informal lenders									
a. Proportion of repaid loan transactions	91.02	64	80.62	93.65	50.00	85.71	91.78	42	74.34
b. Proportion of repaid loan amount	85.69	52	71.79	90.10	33.85	80.43	85.14	23	60.28

Source: Field data.

since all of their credit is linked only (Table 6.3). The farmer lenders and other lenders suffered with slightly lower recoveries, since they are mainly involved with consumption credit linked with land and labour markets whose repayment performance is comparatively lower than other type& of linkages (Table 6.4).

**Table 6.4**

**Repayment Performance of Linked Credit under Various Types of Linkages by Lender Claim**

Sl No.	Credit linkages with	Developed village				Commercialised Village				Backward Village			
		Farmer lenders	Trader lenders	Other lender	Other lender	Farmer lenders	Trader lenders	other lender	All lender	Farmer lenders	Trader lender	Other lender	Other lenders
1.	Land market	95.60	-	-	95.60	0.00	-	-	0.00	70.80	-	-	70.80
2.	Labour market	33.33	-	43.75	37.21	70.74	-	74.14	71.40	64.95	-	100.00	66.80
3.	Input market	-	100.00	-	100.00	-	100.00	-	100.00	-	100.0	-	100.00
4.	Output market	-	84.31	-	84.31	-	100.00	-	100.00	100.00	99.07	-	99.15
5.	Input/Output market	-	100.00	-	100.00	-	100.00	-	100.00	-	100.00	-	100.00
6.	market	100.00	-	100.00	100.00	100.00	-	-	100.00	100.00	-	-	100.00
7.	Other linked credit	80.26	96.41	48.57	85.69	70.63	100.00	74.14	90.10	71.00	99.42	100.00	85.14

Note: Figures denote percentage of repaid loan amount out of the total loan amount.

Source: Field Data

The repayment performance of credit advanced for crop production purposes is about 90 per cent in all the villages. However, the credit given for agricultural investment and consumption purposes is not encouraging with regards to repayment. While only less than half of consumption credit is repaid in the selected villages (except in commercialised village where recovery is about 60 per cent), more than three-fourths to 100 per cent of credit given for agricultural investment is overdue in all the villages.<sup>4</sup>

4. Since the loans for agricultural investment are of longer repayment period, the repayment performance by above procedure may be underestimated.

However repayment performance of credit given for other purposes is quite good especially in developed and backward villages (Table 6.5).

**Table 6.5**  
**Repayment Performance of Informal Credit under**  
**Various Purposes of Borrowing**

(Figures in percentages)

SI No	Purpose of borrowing	Developed village		Commercialised village		Backward village	
		No.	Amount	No	Amount	No.	Amount
1.	Crop production	94.25	91.25	97.50	99.70	79.22	88.59
2.	Agricultural investment*	25.00	17.86	0.00	0.00	27.78	23.77
3.	Consumption	52.78	43.51	77.42	50.00	60.00	47.11
4.	Other purposes	100.00	100.00	60.00	53.33	100.00	100.00
5.	All purposes	80.62	71.79	85.71	80.43	74.34	60.28

Note: 1. No. denotes percentage of fully repaid loans out of total linked transactions.

2. Amount denotes the percentages of repaid loan amount out of total loan amount.

\* As the loans for agricultural investment are having repayment period of more than one year, the procedure followed may underestimate its repayment performance.

Source: Field data

**Pattern of repayment of linked and non-linked credit by the occupation groups:**

The repayment performance both in terms of number of loans fully repaid out of total loans as well as the amount repaid out of total credit borrowed is higher in case of linked loans than that of nonlinked loans across the occupation groups of agricultural labourers and cultivators. And also the repayment performance of informal loans both in terms of number of loans and amount involved is better in case of cultivators than that of agricultural labourers (Table 6.6). On the other hand, in case of the formal

credit, the repayment performance of agricultural labourers<sup>5</sup> is better than that of cultivators in all the villages. A comparison of repayment rates of formal credit and non-linked informal credit are does not give clear indications. However, the repayment performance in terms of number of loans fully repaid is better in case of non-linked credit than that of formal credit. At the same time repayment performance in terms of amount repaid is better for formal credit than that of non-linked credit in two of the villages.

The agricultural labourers fully repaid more than 80 per cent of linked loans involving more than 70 per cent of amount of linked credit in all the three villages. However, their repayment performance of nonlinked loans is quite poor. The defaulted amount of nonlinked credit is as high as about 80 per cent in backward village, about 75 -per cent in developed village and about 64 per cent in commercialised village.

The repayment performance of linked loans by the cultivators is also quite good, since the repaid loans and repaid amount constituted more than 90 per cent in developed and backward villages and even 100 per cent in commercialised village. On the other hand, the cultivators repaid only about one-fourth of nonlinked credit in backward village and about one-third in commercialised village. However, in developed village they repaid about two-thirds of nonlinked credit also. Further, it can be noticed that while the repayment performance of cultivators is better than that of

5. However observations are less than 5.

**Table 6.6**  
**Repayment performance of linked and non-linked credit borrowed**  
**by occupation groups**

(Figures in percentages)

Village/ occupation group	INFORMAL CREDIT				FORMAL	
	Linked	credit	Non-linked credit		No. of loans repaid fully out of total loan	Amount repaid out of total amount borrowed
	No. of loans repaid fully out of total loans	Amount repaid out of total amount borrowed	No. of loans repaid fully out of total loans	Amount repaid out of total amount borrowed		
<u>Developed village</u>						
Agricultural labourers	82.14	71.62	56.25	25.96	60.00*	70.18*
Cultivators	96.00	96.19	68.57	63.76	44.74	47.86
All households	91.03	85.69	64.71	52.48	46.51	49.10
<u>Commercialised village</u>						
Agricultural labourers	86.67	71.95	37.50	36.08	57.14*	61.86*
Cultivators	100.00	100.00	66.67	31.58	35.71	37.04
All households	93.65	90.10	50.00	33.85	42.85	40.81
<u>Backward village</u>						
Agricultural labourers	89.19	74.21	40.00	18.99	40.00*	57.14*
Cultivators	94.44	94.37	44.00	25.44	41.18	49.42
All households	91.78	85.14	42.50	23.80	40.90	46.07

Note: \* denotes observations are less than 5 in the concerned cell

Source: Field data.

agricultural labourers in case of informal credit, the repayment performance of cultivators is lower than that of agricultural labourers in case of formal credit.

The considerable differences in repayment of linked credit between non-linked credit reveals effect of interlinkages of credit in enforcing the borrowers to honour the credit contract by repaying it promptly. The higher repayment by cultivators than that of agricultural labourers especially in case of linked credit may be explained on the basis of enforcement capacity of various types of linkages, the two occupation groups entered into.

To distinguish the repayment performance of informal loans under various types of linkages, the conditional probabilities of repayment are estimated and presented in Table 6.7. A perusal of Table reveals the lower probability of repayment of informal loans under labour market linkages, while in case of input-output linkages, the probability is very close to one (1.000). Earlier we have already observed the higher extent of association of agricultural labourers with credit under labour linkages, while that of cultivators with credit under input-output linkages. Therefore the repayment performance of cultivators is higher than that of agricultural labourers. Further the estimated probability of repayment of informal loans by various types of lender classes (Table 6.8) shows that the probability of repayment of loans given by trader lenders is almost close to one while that of farmer lenders is lower. This also may be another reason for lower repayment performance of agricultural labourers than that of cultivators because of the higher

**Table 6.7****Estimated probabilities of repayment of informal loan under various types of linkages by occupation class in study villages**

Village/ occupation group	Land market	Labour market	Input/out markets	Other linkages	Total linked loans	Non- linked loans	All informal loans
<u>Developed village</u>							
Agricultural labourers	0.833	0.667	1.000	1.000	0.821	0.563	0.727
Cultivators	1.000	0.000	0.970	1.000	0.960	0.686	0.847
All households	0.857	0.615	0.973	1.000	0.782	0.647	0.806
<u>Commercialised village</u>							
Agricultural labourers	0.000	0.870	1.000	1.000	0.867	0.375	0.763
Cultivators	-	1.000	1.000	1.000	1.000	0.667	0.949
All households	0.000	0.893	1.000	1.000	0.937	0.667	0.857
<u>Backward village</u>							
Agricultural labourers	-	0.765	1.000	1.000	0.892	0.400	0.750
Cultivators	0.800	1.000	0.950	1.000	0.944	0.440	0.738
All households	0.800	0.800	0.968	1.000	0.918	0.425	0.743

Note: 1. The total probability is 1.000 for each cell separately

2. Only number of loans is considered.

**Table 6.8****Estimated probabilities of repayment of informal loan given by various lender types by occupation groups in study villages**

Village/ Occupation group	Farmer lenders	Trader lenders	Other lenders	All lenders
<u>Developed village</u>				
Agricultural labourers	0.655	1.000	0.818	0.727
Cultivators	0.730	0.970	0.867	0.847
All households	0.697	0.973	0.846	0.806
<u>Commercialised village</u>				
Agricultural labourers	0.778	1.000	0.571	0.763
Cultivators	0.846	1.000	1.000	0.949
All households	0.800	1.000	0.625	0.857
<u>Backward village</u>				
Agricultural labourers	0.706	1.000	0.571	0.750
Cultivators	0.645	0.950	0.600	0.738
All households	0.677	0.968	0.588	0.743

Note: 1. The total probability is 1.000 separately for each cell

2. Only number of loans is considered.

association of agricultural labourers with farmer lenders for their credit requirements than that of cultivators.

To examine the differences if any in the repayment behaviour of informal loans availed by occupation groups on the basis of purpose of loan for which they borrowed, the repayment probabilities are estimated and furnished in Table 6.9. It can be seen that the probability of repayment of loans availed for agricultural investment and consumption purposes is lower than that of crop production and other purposes.<sup>6</sup> Since most of the loans given for consumption purposes have gone to agricultural labourers only, whose 'collateral' is tied labour with lower repayment probability, the repayment performance of loans under consumption is also lower. The reverse is the case with that of crop production loans.

#### **Binary Logit Model for repayment of informal loans**

To identify various factors on which the probability of an household repaying the loan depends, we have employed Binary Logit model. The informal loans are classified into fully repaid loans (1) and otherwise. Hence dependent variable is '1', if a loan is repaid fully and '0' otherwise. The variables included in the analysis are as follows.

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6. However, long term repayment period of agricultural investment loans, and the strategy of informal lenders to keep a part of loan unpaid under labour linkages may also be the reasons.

**Table 6.9**  
**Estimated probabilities of repayment of informal loan by**  
**occupation groups by purpose in study village**

Village/ Occupation group	Crop produ- ction	Agricul- tural invest- ment	Consum- ption	Other pur- poses	All pur- poses
<u>Developed village</u>					
Agricultural labourers	1.000	—	0.560	1.000	0,7 27
Cultivators	0.930	0.333	0.455	-	0.847
All households	0.943	0.250	0.528	1.000	0.806
<u>Commercialised village</u>					
Agricultural labourers	0.875	—	0.760	0.600	0.763
Cultivators	1 .000	-	0.833	-	0.949
All households	0.975	-	0.774	0.600	0.857
<u>Backward village</u>					
Agricultural village	0.923	0.250	0.667	1.000	0.750
Cultivators	0.902	0.300	0.500	-	0.738
All households	0.910	0.278	0.600	1.000	0.743

Note: 1. The total probability is 1.000 separately for each cell  
2. Only number of loans is considered.

### Specification of Explanatory Variables

- i) Linkage: 1, if the loan is a linked transaction and 0, otherwise.
- ii) Occupation class: 1, if the household is a cultivator and 0, if the household is an agricultural labourer.
- iii) Source of loan1 1, if the lender is trader-lender, 0, if the lender is farmer-lender.
- iv) Source of loan2 1, if the lender is other lender, 0, if the lender is farmer lender
- v) Purpose of loan: 1, if the loan is for crop production and agricultural investment purposes and '0' otherwise.
- vi) Village 1 1, if the loan is transacted in commercialised village, and 0, if it is in backward village.
- vii) Village 2 1, if the loan is transacted in developed village and 0 if it is in backward village.

We expect a positive relation for the independent variable 'linkage' with that of dependent variable, since we have already observed that the repayment performance is higher in case of linked loans than of non-linked loans. We also expect positive sign for occupation class because the probability of repayment is higher for cultivators than agricultural labourers as per our earlier analysis. Further, we presumed positive signs both types of sources i.e., trader-lender (1) and other lenders (2), as we have already seen that probability of repayment is lower for farmer-lenders (0) than that of trader lenders and other lenders. Finally, we expect positive signs both for village 1 (commercialised village) and village 2 (developed village), since we observed slightly lower repayment performance in backward village (0) than that of other two villages.

**Table 6.10**  
**Binary Logit relationship: Repayment**  
**(Dummy dependent variable 1, If the Informal loan Is fully repaid**  
**and '0' otherwise)**

Explanatory Variables		Coefficient	T Ratio
1 . Linkage:	1, if the loan is linked one 0, otherwise	1.5249*	3.0456
2. Occupation class:	1, if the loan is availed by a cultivator and 0, if agricultural labourer	0.3619	0.7768
3. Source of loan - trader-lender	1, if the loan is lent by trader lender and 0, if it is by farmer- lender	1.7424**	2.0394
4. Source of loan - other-lender	2, if the loan is lent by other lender and 0, if it is by farmer- lender	0.5164	0.9895
5. Purpose of loan	1, if the loan is for crop production and agricultural investment purposes and '0' if it is otherwise	1.0022**	1.9966
6. Village -	1, if the loan is transacted in commercialised village and 0, if it is of backward village	0.8421	1.2882
7. Village - Developed village	2, if the loan pertains to developed village and 0, if it is in backward village	0.5828	1.2031
Constant:		-2.2650	
Log-Likelihood function:		-67.63	
No. of observations:		130	
Degrees of freedom:		7	
Percentage of rightpredictions:		75.35%	

\* : Significant at 1% level

\*\* : Significant at 5% level

The results of the estimates by the Binary Logit model (Table 6.10) shows that the signs of all the coefficients are in the expected direction. The relationship of the coefficients - Linkage, source of loan-trader lenders, purpose of loan are statistically significant. It reveals from the analysis that the probability of an informal loan being repaid fully, increases significantly a) when the loan is a linked one, b) if the lender involved is a trader lender and c) if the loan is for production purpose. Though the probability of repayment of a loan increases if the borrowers is a cultivator, it is not statistically significant.

The foregoing analysis reveals that the interlinkage is acting as risk reducing mechanism for informal credit. However, there are no such mechanisms for risk reduction in case of formal credit. Therefore, the risk of default is very much higher for formal credit than that of informal credit in the study area. Moreover, the risk of default of formal credit is more in case of cultivators than that of agricultural labourers, while it is vice-versa in case of informal credit. Wilful default is the main reason for the same mainly due to lack of punitive action on the formal loan defaulters. On the other hand, while there is a disincentive for defaulters of informal loans through various means of controls in informal credit market, there is an incentive for defaulters of formal credit, if the recent write off of defaulted loans by Government of India under Rural Debt Relief Scheme 1990, is any indication.