RURAL CREDIT MARKETS IN OPERATION
A STUDY OF SOME SELECTED VILLAGES IN WEST BENGAL

THESIS SUBMITTED TO THE VIDYASAGAR UNIVERSITY IN FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY

ABDUR RAHIM

DEPARTMENT OF ECONOMICS WITH RURAL DEVELOPMENT
VIDYASAGAR UNIVERSITY
MIDNAPORE
1998

Certificate

Certified that the thesis entitled "**Rural Credit Markets in Operation : A Study of Some Selected Villages in West Bengal**" submitted by Abdur Rahim for the degree of Doctor of Philosophy is a *bona fide* work to the best of my knowledge and may be placed before the examiners for their consideration.

Signature Removed

(Sankar Kumar Bhaumik)

Supervisor

Signature Removed

(Purnendu Sekhar Das)

Head, Department of Economics with Rural Development,

Vidyasagar University, Midnapore.

CONTENTS

List of Tables

ACKNOWLEDGEMENTS

I am deeply indebted to my respected teacher Dr. Sankar Kumar Bhaumik, Reader, Department of Economics, Calcutta University under whose very valuable supervision I prepared this thesis.

I am grateful to the teachers of the Department of Economics with Rural Development, Vidyasagar University, Midnapore for their valuable suggestions and help at various stages of this work.

I am also grateful to the University Grants Commission for awarding me a teacher fellowship for one year.

I sincerely express my gratefulness to the officials of the concerned Gram Panchayats for their help and co-operation at various stages of field surveys.

I wish to express my gratitude to my family members for their inspiration and all kinds of co-operation.

Dhritiman Datta of Jaks Byte, Subhasgram, 24 Prgs. (S), deserves special appreciation for providing computer services and typing the thesis with great sincerity.

Signature Removed

(Abdur Rahim)

CHAPTER I

INTRODUCTION

During past thirty years or so there have been tremendous expansion of rural banking in India (Gadgil, 1986). The expansion in rural banking network has been phenomenal during the post-nationalisation period. The available evidence shows that while there were only 17.6 per cent of the total bank branches in rural areas in December 1969, the corresponding figure for March 1991 and March 1997 stood at 58.1 and 52.0 per cent respectively (Economic and Political Weekly, 1997). Such a spectacular growth in bank branches in rural areas notwithstanding, the informal credit has been loosing ground, if at all, to the institutional sources only at an extremely slow pace. Not only that the flow of institutional credit has been inadequate to meet the credit needs of the rural households, its distribution has been highly unequal. It has been argued by some scholars that under the power structure prevailing over rural India, the institutional credit, which is almost always subsidised, flows more to the rich who, in turn, use this to exploit the poor even further (see Rao, 1970, 1975). This, in effect, amounts to income transfer to the rich and aggravates further the inequality of assets and income in rural areas (Lipton, 1976; Lele, 1981).

Over the past few years, several scholars have attempted to understand the working of the credit markets particularly, in the context of backward agrarian economies. The major issues which attracted the attention of researchers are the nature of participation of various categories of households in rural credit

markets, the access of various categories of households to the formal credit institutions, the credit gap (deficiency) of the farmers, the actual cost of borrowing of formal credit, the roles and types of collateral securities in the informal credit transactions, the incidence and types of interlinked credit contracts, the characteristics of the households participating in interlinked credit transactions, the determination of rate of interest in the case of non-institutional borrowings and so on. Some important studies examining one or more of these issues are those by Adams and Nehman (1979), Ahmed (1989), Banik (1993), Bardhan (1983), Bardhan and Rudra (1978), Basu (1984), Bell (1990), Bhaduri (1977, 1983), Braverman and Srinivasan (1981), Braverman and Guasch (1986), Bottomley (1963, 1975), Chaudhuri and Gupta (1996), Gupta (1991), Gangopadhyay and Sengupta (1987), Iqbal (1988), Kurup (1976), Reddy (1992), Platteau and Abraham (1987), Sarap (1987, 1990, 1991), Stiglitz and Weiss (1990), Swaminathan (1991, 1993) and so on.

A good number of the above studies are largely theoretical and there is clear dearth of empirical studies unravelling the actual nature of working of credit markets under rural settings. The limited number of empirical studies conducted so far have neither been adequate to resolve the controversies emerging out of theoretical literature on the subject nor are they helpful to formulate a generalised opinion on the actual nature and functioning of credit markets in rural areas. Thus the present study may be viewed as another attempt towards understanding, at the empirical level, the workings of rural credit markets. In this study, apart from reviewing the major issues emanating from the debate over the nature and functioning of the rural credit markets in

other areas, we also put to empirical scrutiny some of these issues with the help of primary data collected from some villages in West Bengal.

Specific Objective of the Study

The specific objectives of the present study are : (1) To understand the structure and functioning of credit markets in rural West Bengal; (2) To find the characteristics of the households which participate in formal and informal segments of rural credit markets and the underlying purposes for which the credit is obtained from different sources; (3) To estimate the credit needs of the farmers and to measure the credit gap (deficiency) for different categories of farmers; (4) To examine the terms and conditions associated with informal credit contracts; (5) To examine the extent and types of interlinked credit contracts and to find the characteristics of households participating in interlinked credit transactions; and (6) To explore the factors which account for variation in the rate of interest under informal loans.

Data Base and Methodology

The present study is almost fully based on primary data collected from some sample villages in West Bengal. For the collection of primary data, two districts namely, Hooghly and Bankura have been purposively chosen. Among the two districts, Hooghly is known to be an agriculturally advanced district while Bankura is far backward in this respect (see Chapter III below). The data collected from these districts are likely to provide some comparative idea about the nature and functioning of the agricultural credit institutions (both formal and informal) in the two contrasting agroclimatic zones. In the present

study, we covered four villages in each district, thus covering eight villages in all. While selecting four villages in each district, we decided that three of them would represent the overall characteristics of the district. Thus three out of the four villages chosen for Hooghly are advanced villages while the fourth one is relatively backward.[1] In the same way, three of our chosen villages in Bankura are backward while the remaining one is relatively advanced. We clump four advanced villages together to represent the 'advanced region' while the four backward villages have been clumped to represent the 'backward region'.

For the collection of primary data, a complete village listing has been prepared for each sampled village and the households were categorised as per their operated land area. The principal categories were : (i) agricultural labourers (AGL); (ii) marginal farmers (MRF); (iii) small farmers (SMF); (iv) medium farmers (MDF) and (v) large farmers (LF). From each village, we took a sample of 50 to 55 households covering all these categories with probability proportional to the size of their respective stratum. Altogether we have a sample of 420 households covering the categories of agricultural labourers (operating no land)[2], marginal farmers (operating land less than 2.50 acres), small farmers (2.50 - 4.99 acres), medium farmers (5.00 - 7.49 acres) and large farmers (7.50 acres and above). For the actual collection of field data, a comprehensive questionnaire was prepared. The questionnaire has been designed to make queries regarding aspects such as the participation of households in credit market, purposewise and sourcewise distribution of

---

[1] The names of these villages and some of their characteristics are presented in Appendix Table A 1 1.

[2] In this study, agricultural labourers actually represent the category of purely landless agricultural labourers.

formal and informal loans, the nature of credit transactions with or without collateral, the access of the farmers to formal credit, estimation of transaction cost in case of formal loans, estimation of credit requirements and credit gaps of different categories of farmers, the incidence and types of interlinkages between different markets, the determination of rate of interest in informal credit markets and so on. The field work has been conducted in two stages. The first stage of survey continued between December 1991 and February 1992 covering the Kharif season (July 1991 to December 1991) while the final visit ranged between June 1992 and July 1992 covering the Rabi/ Boro season (January 1992 to June 1992). The reference period for this study is the agricultural year July 1991 to June 1992.

For the sake of analysis of data, we generally concentrated on their tabular representation. However, usual econometric tools have also been utilised for more rigorous analysis and interpretation of data wherever necessary.[3]

PLAN OF THE STUDY

The present study runs into seven chapters. Chapter II presents a review of major issues emerging in the context of discussions on rural credit markets in backward agrarian economies. Chapter III provides some brief idea about the features of our sampled areas. Chapter IV discusses the structure and functioning of rural credit markets (formal and informal) in the context of our sampled villages. While Chapter V concentrates on interlinked credit transactions, Chapter VI seeks to identify the determinants of the rate of

---

[3] The details about these tools have been given at relevant places below.

interest for informal credit in our sampled villages The final Chapter VII summarizes the main findings and provides the conclusion of the study.

CHAPTER II

REVIEW OF LITERATURE

The credit systems in the Third World's rural communities are highly complex ; loan often takes multifarious forms and, at best, debt is an "elusive concept" (Hill, 1986). There is an increasing awareness in development economics of the key role played by the availability of credit in agricultural development. Credit is regarded as a crucial determinant of agricultural growth and technological innovation. Accordingly, governments in most of the developing countries have expanded formal credit institutions in rural areas and attempted to help the rural poor by supplying cheap credit. In India, institutional credit has increased rapidly both in terms of coverage and quantum. This has happened particularly during the post-bank nationalisation period.

As is well-known, institutional credit is given mostly for production purposes. It is normally provided to meet working capital requirements of the households. It is thus to be utilised for purchasing items such as bullocks and various implements, digging wells, purchasing agricultural inputs and also for land improvement. It is often observed that in rural areas, the well-to-do households have easy access to formal credit institutions, while the households whose need for credit is very acute have less access. In this later category included are marginal and small farmers. These households seek to obtain credit from formal institutions in order to meet for their working capital requirements. With the availability of credit, they can enhance their use of HYV seeds, fertilisers, pesticides, irrigation etc. which would then raise their

production and income levels. It is, however, a pity that inspite of the government efforts to help the poor farmers by providing them the subsidised credit, this advantage of the institutional credit has accrued mostly to the large farmers (Gonzalez Vega, 1981; Lipton, 1976; Rao, 1970, 1975; Braverman and Guasch, 1986). This has happened due to the asset-based lending policy pursued by the credit institutions. Consequently, "the more (security) one has the more (credit) he may be given" (Tendulkar, 1983) under the prevailing system. Thus at the same rate of interest and within a given geographical area of the institutional credit market, the well-to-do borrowers get more credit than the poor farmers. In any case, the poor farmers are not benefitted much by the formal credit institutions. As regards the behaviour of formal credit institutions, it also needs to be mentioned that since they could not increase rate of interest by wishes, they often engage in 'implicit price setting'. This implicit price setting procedure enables the lenders to exclude or ration the unwanted clients. This screening mechanism then leads to increased transaction costs for both the borrowers and lenders. The formal credit agencies become reluctant to provide credit to the small borrowers to reduce their transaction costs. What is more, concessionary rate of interest on loan discourages formal lenders from lending to the rural poor since in that case they have to incur higher transaction costs (Gonzalez Vega, 1976). On the other hand, excessive total cost of borrowing from formal institutions due to high borrowers' transaction cost discourage many rural borrowers from using formal credit (Shahjahan, 1968; Nehman, 1973; Alam, 1981; Ahmed, 1982; Adams and Nehman, 1979). Borrowers' transaction costs result chiefly from the rationing mechanism employed by formal lenders (Ladman, 1984).

Owing to the complicated formalities involved behind the sanction of loans by the institutional agencies, the borrowers often fail to make timely use of the loans. A delay in the sanction of loan increases the transaction costs besides constraining the borrowers to use funds for the purpose for which they are borrowed (Sarap, 1991). It has been also observed that the borrowers' transaction costs are higher in the formal market than in the informal market (Ahmed, 1989; Banik, 1993). Between different types of borrowers, the large borrowers are found to be affected less by the burden of transaction costs as compared to the small borrowers. The small borrowers then prefer the relatively less expensive informal credit, while the large borrowers try to obtain the cheaper formal credit (Ahmed, 1989).

In the market for informal credit, the lenders and borrowers come from different castes and classes of the society. They have quite different motivation in getting involved in credit transactions. If the lenders are professional moneylenders, they seek to earn regular income from lending at a profitable rate of interest. The households who cannot obtain loans from other sources, depend solely on the professional moneylenders even though their terms and conditions are very stringent. These borrowers attempt to fulfill the contract made with the lenders since the cases of default would reduce their trustworthiness in the local credit market (Jodhka, 1995; Platteau and Abraham, 1987; Binswanger and Rosenzweig, 1986; Bardhan, 1979).

Apart from the professional moneylenders, the big cultivators are found to advance loans to the borrowers in the informal credit market. This they do often against the supply of future labour services. They get involved in such

credit transactions in order to have assured supply of labour services during the peak farming season and also to reduce the wage bill (Binswanger and Rosenzweig, 1984; Bardhan and Rudra, 1978; Desai, 1984). In case of labour-linked loans, the lenders are invariably the large farmers with deficit in their own stock of labour (Bardhan, 1979, 1983). The agricultural labourers get involved in this type of credit transaction to smooth their consumption throughout the year since the employment for labour is not available throughout the year. It has been argued that, if the demand for labour in peak season of farming is greater than the supply of labour, there will be a higher tendency on the part of the lender to tie the labour (Bardhan, 1979, 1983).

In the informal credit market, the traders and businessmen too are found to advance loans to the borrowers against the sale of future crops to them. The borrowers here are generally poor farmers who fall mostly in the category of marginal and small farmers. The lenders come mostly from the class of grain traders and fertiliser dealers (Sarap, 1991). Neighbours, friends and relatives are the other suppliers of informal credit in the rural areas (Christensen, 1993). As expected, the terms and conditions of this later type of loans are lenient. Usually, loans of this type are available among the group of the well-to-do households (Platteau and Abraham, 1987).

In the rural credit market, the lenders almost always are confronted with the problem of 'adverse selection' of borrowers. Besides, there is always the uncertainty as regards the recovery of the loan amount and the interest. The lenders then try to avoid capital loss by scrutinising the potential borrowers and attaching a variety of provisions to the contracts (Bell, 1990). For

example, they demand collaterals from the borrowers for the loans. The issue of collateral thus becomes important in the context of informal loans. As land is the source of livelihood of the rural population, it is used as security only when the borrowers have no other collaterals. The well-to-do households are found to use gold as security for obtaining loans, especially from the professional moneylenders. The use of gold as security may increase with the rise in the status of the households. The households who cannot offer valuable collaterals like gold offer less-quality assets such as silver, brass utensils, bicycles and so on. In case of these assets being offered as collaterals, the borrowers can manage only smaller amounts of loan. The terms and conditions on such loans are also likely to be unfavourable to the borrowers. The households who cannot offer even such assets may, however, offer inferior collaterals such as future sale of labour services or standing crops (Binswanger and Rosenzweig, 1986; Sarap, 1991).

It has been noted that there are cases where the lenders sought witness or a third party guarantee for advancing loans in the informal credit market. Although it has no legal value, this could in practice be used to put social pressure on the borrower through the community. If the lender belongs to a powerful class (economic or social), he may also impose severe penalty on the borrower for loan default (Roth, 1983).

Another important issue that has been a subject of considerable controversy in recent years is that relating to 'interlinked credit transactions' (Bhaduri, 1973, 1977, 1983; Bardhan, 1984; Bharadwaj, 1985; Desai, 1984; Platteau and Abraham, 1987; Sarap, 1991; Reddy, 1992; Banik, 1993). An interlinked

transaction is one in which two parties trade in at least two markets on the condition that the terms of such trades are jointly determined (Bell, 1988). An important example of interlinked credit transaction in most rural areas is the one where the poor agricultural labourers and marginal and small farmers borrow from the well-to-do farmers as against the sale of labour services to them in the future. As the landless agricultural labourers have only subsistence levels of income, whenever there is an additional expenditure owing to social festivals, renovation of houses, medical treatment and so on, they borrow in cash or kind (generally paddy) from the big farmers against the commitment of future sale of labour services particularly, during peak seasons of farming. Besides this, as the employment in agriculture is not available throughout the year, landless agricultural labourers borrow from the big farmers for meeting their lean season consumption requirements. The marginal and small farmers who have excess labour but lack in terms of necessary funds for meeting working expenses for agricultural production and also their consumption requirements may take loans from big farmers against the future sale of labour services. Since cultivation with High Yielding Varieties (HYVs) is of short duration and agricultural operations have to be completed within a short period to avoid any loss of yield, the big farmer with less working family members may be eager to give credit to the labourers. The greater is the shortfall of labour supply relative to the demand for labour during peak season, the higher is likely to be the tendency for tying on the part of the employer (Bardhan, 1979, 1983). The big farmer while getting involved in such interlinked credit-labour contracts also economize the costs of work monitoring (Platteau and Abraham, 1987). As the borrower and lender often reside within

the same geographical area, monitoring of the borrower becomes easy and less costly (Stiglitz and Weiss, 1990). It is in fact a barter transaction in which credit changes hands at the point where the two parties also arrive at labour contracts subsequently (Bardhan, 1984).

There are other examples of interlinked contracts in the agrarian credit markets into which the poor farmers are found to have involved themselves. For example, they may take loans from the grain traders and input sellers against the sale of future crops to them. Thus the lenders here are mostly grain traders and/or input dealers (Sarap, 1991). Generally, the input dealers supply the input (fertilisers) at a higher price and purchase the crops at a price lower than that prevailing in the market. The same is the case with the traders who supply the credit to the poorer farmers but would undervalue the crops sold to them as part of interlinked contracts.

In recent years, several empirical studies have been conducted on the issue of extent and nature of interlinked transactions in rural areas. It has been observed that the incidence of interlinked credit transactions are generally higher in the developed villages as compared to the backward villages (Bell and Srinivasan, 1989). It is also noted that among various groups of households, the incidence of interlinkage has been much higher for the landless households and this goes down with the increase in the size of land holdings (Sarap, 1991).

There have been controversies as regards the consequences of interlinkages. One group of economists argued that interlinkages served as a mechanism to

exploit the weaker households in rural areas by the stronger ones and thereby extract surplus out of the former (Bhaduri, 1973). Interlinkages which enhance the exploitative power of the stronger sections may extend to many markets as well (Bhaduri, 1973, 1983; Bharadwaj, 1985; Wharton, 1961). In this type of interlinked contracts, the dominant party dictates the terms and conditions of exchange while the weaker party is obliged to accept it (Rao, 1980). If the borrowing household is very poor, his need for credit is so acute that the lender is able to dictate the terms of credit and extract large surpluses from the borrower.

As opposed to the above approach, the other group of economists interpreted interlinkage as the device employed by the lenders to improve upon the allocative efficiency of the borrowers (Bardhan, 1979, 1980, 1983; Braverman and Srinivasan, 1981; Basu, 1983; Mitra, 1983; Gangopadhyay and Sengupta, 1986). This is the case when the borrower is also the tenant of the landowner-cum-lender. In other cases, the lenders use contracts also for reduction of transaction costs (Bardhan, 1980). Owing to the asymmetrical information about the capacity of the borrowers to repay the loan, the interlinkages between different markets economize the cost of work monitoring (Platteau and Abraham, 1987) and reduce transaction costs and the risk premium (Banik, 1993). All these explanations thus treat interlinkage not being always so harmful. The borrowers may be benefitted through interlinked contracts and it may increase the welfare of both the landowner-creditors and poor working households.

Another important issue that has been a subject of considerable debate in recent years is the determination of interest rate in the case of non-institutional loans in rural areas (Bottomley, 1963, 1975; Chandravarkar, 1965; Bhaduri, 1977, 1983; Basu, 1984; Platteau, 1985; Swaminathan, 1991; Sarap, 1991). Not only the rate of interest is high for the non-institutional loans but also they take a wide range of values even within the same region (Platteau, 1985; Sarap, 1990). Broadly speaking, there are two different explanations regarding such variation in interest rate in the rural areas. The early explanation has been provided in terms of what is known as the "Lender's Risk Hypothesis" (Bottomley, 1963, 1975). According to this hypothesis, as the risk of loan default is high in rural areas, the moneylenders charge higher rate of interest on loans. Since the extent of defaulted amount of loan is likely to vary from borrower to borrower, the rate of interest charged too differs. Bottomley (1975) also argued that the opportunity cost, administration cost and a premium to cover the risk of default together determine the rate of interest in the case of an informal loan. This hypothesis has been supported empirically in a recent study by Gupta (1991). He views that the probability of the loan default is inversely related to the size of land holding of the borrower and the proportion of irrigated land to total land. On the basis of regression results, he shows that higher the possibility of loan default, the higher will be the rate of interest which confirms the validity of the "Lender's Risk Hypothesis".

The view that the rate of interest is comprised by opportunity cost, administrative cost and the risk premium is correct if the credit market is competitive. However, if it is not competitive, an additional cost namely,

monopoly surcharge may be included for the determination of interest rate (Iqbal, 1988). The degree of monopoly power of the lender then becomes an important determinant of interest rate. Chandravarkar (1965), argued that the degree of monopoly power as enjoyed by the lender is the most important determinant of interest rate for informal loans.

As opposed to the above hypothesis, some scholars tried to explain high rate of interest in the case of informal loans in terms of very personalised nature of loan transactions and also the unequal social and economic relation that exists between the borrowers and lenders. Bhaduri (1977,1983) constructed a model of formation of interest rates in backward agriculture along this line. He shows that if the quality of collateral offered for loan is low, it will not be acceptable to the formal credit agencies. In that event, the monopoly power enjoyed by the moneylenders along with the inelastic demand for loan enable the moneylenders to determine interest rate freely. In case of loan default, the lenders recover the defaulted amount in the form of asset transfer from the borrower to the lender. This creates the possibility of under-pricing of the collateral offered. Under-pricing of collateral means a high rate of interest on loan. Bhaduri argues that the lender raises the interest rate to encourage default of loan. Bhaduri's model provoked some theoretical model building exercises during the 1980s. For example, Borooah (1980) modified Bhaduri's model by arguing that the lender may reduce rate of interest and induce default by encouraging borrower to take larger amount of loan. Basu (1984), extends the model of Bhaduri by assuming that the borrower's demand for loan depends both upon the rate of interest charged and the price of collateral.

Both Bhaduri and Basu assume that only the defaulted amount is collected through the transfer of collateral from the borrower. However, Gangopadhyay and Sengupta (1987) argue that the lender will collect the whole of defaulted amount, i.e., principal and interest. The higher price of collateral obviously implies the higher rate of interest.

The issue of quality of collateral has also been discussed in the context of determination of interest rates for informal loans in rural areas. It has been hypothesised that the rates of interest charged are higher on the loans obtained by providing securities which are less marketable. Thus both quantity as well as quality of collaterals offered are important for the determination of interest rates for informal loans. In a recent empirical study, Swaminathan (1993) finds, by using data from Tamil Nadu, that the borrower's economic status including his holding of assets and land affect the rate of interest for the informal loan. A well-to-do borrower has more bargaining strength and can obtain loans at a lower rate of interest in the informal market. The ownership of wealth determines the quality of collateral which, in turn, affects the interest rate charged (Sarap, 1991; Swaminathan, 1991).

Although a lot of discussion has taken place on the issue of collateral (both its quantity and quality) as a determinant of interest rate for informal loans, it would be wrong to assume that all informal loans are collateral-based. In fact, in good number of cases, the rural borrowers do obtain loans in the informal market without offering any collateral which are marketable. Since nothing can be gained by the lenders by encouraging default in such cases, the lenders are likely to set interest rates at the level where it is repayable (Sarap, 1990).

It has also been maintained that the rate of interest is likely to be higher for the credit transactions which are linked with other contracts (Sarap, 1991; Reddy, 1992). However, even for the linked credit transactions, the rate of interest may differ according as the purposes for which the loans are obtained (Sarap, 1991).

Apart from the economic factors, the rate of interest may also depend on the sociological factors, such as caste status and education levels of the borrowers. The households belonging to lower castes are found to pay higher interest than the households belonging to higher castes (Swaminathan, 1991,1993). Similarly, the borrowers having higher formal education may obtain loans at lower rates of interest as they have outside connections in the society.

In rural communities, the households very frequently depend on the 'neighbouring help'. This type of help which is reciprocal in nature is generally interest-free (Abraham, 1985; Rahaman, 1979; Bardhan and Rudra, 1978). Thus majority of the interest-free loans are supplied by the friends and relatives (Islam and Rahaman, 1985) of the borrowing households. Nevertheless, utmost care needs to be taken while interpreting these interest-free loans as part of reciprocal relationship that exists between the neighbouring households in rural areas. This is because in many cases the loans on the surface are interest-free but there is heavy interest which remains hidden behind the formal contract (Kurup, 1976).

CHAPTER III

SALIENT FEATURES OF STUDY AREAS

The main purpose of this chapter is to obtain some broad idea about the areas (regions) which are chosen for conducting field investigations for this study. Our purpose here is also to obtain some broad idea about the socio-economic conditions of the households in our sampled areas. The discussion here is carried out in two sections. While the first section describes the characteristics of the districts chosen for our study, the second section contains discussion on the features of the sampled villages and also of the households residing there.

3.1 The Sampled Districts

The two sampled districts chosen for this study namely, Hooghly and Bankura display contrasting socio-economic conditions prevailing in them. They differ quite sharply not only in terms of broad social indicators but also in terms of the indicators representing the levels of agricultural development. For example, the extent of urbanisation has been quite high in Hooghly while Bankura has been a predominantly rural district. The 1991 Census data show that the percentages of rural population to total population have been nearly 69 and 92 in the two districts respectively (Table 3.1). This apart, Hooghly is reported to have much higher literacy rate (both for males and females) as compared to Bankura. Another noteworthy aspect about Hooghly has been its much higher incidence of rural non-agricultural employment as compared to the same in Bankura.

Table 3.1 : Some Social Indicators in the Sampled Districts (1991 Census).

Item 1	Hooghly 2	Bankura 3	West Bengal 4
Percentage of rural population	68 81	91 71	72 52
Literacy rate			
Males	75 77	66 75	67 81
Females	56 90	36 55	46 56
Percentage of SC/ST population	34 72	43 16	34 87
Percentage of workers engaged in			
Agriculture	66 82	80 64	73 52
Non-agriculture	33 18	19 36	26 48

Source : Government of West Bengal, Economic Review, Various Years.

Table 3.1 shows that while in Hooghly, 33.18 per cent of rural workers were engaged in non-agricultural activities (in 1991), the same for Bankura turns out to be only 19.36 per cent. When we compare these indicators for the two districts with the situation prevailing for the state of West Bengal as a whole, it clearly emerges that on all above aspects, Hooghly occupies a position higher than the state average while Bankura is clearly placed below the same. On the whole, while Hooghly may be designated as an advanced district of the state, Bankura is clearly a backward district.

Our above observation gets further strengthened when we compare the two districts in terms of their agricultural performances. We may specifically compare their cropping patterns, cropping intensities, yield rates for important crops and the levels of adoption of modern agricultural technology. As regards cropping pattern, it appears from Table 3.2 that it is much more diversified in Hooghly as compared to Bankura. During the period 1990-93, while 85.39 per cent of cropped area in Bankura was devoted to rice, the corresponding percentage was 67.24 only in Hooghly. Again, between different varieties of

rice, the percentage of Boro rice was much higher in Hooghly (15.71 per cent) as compared to Bankura (7.71 per cent). This is contrary to the case with Aman rice which dominates the cropping pattern in Bankura. The commercial crops such jute and potato are also cultivated on a far greater scale in Hooghly. Consequently, the percentage of non-foodgrain crops was much higher in Hooghly (32.24 per cent) as compared to Bankura (11.70 per cent). Since the cropping pattern is much more diversified with various types of food and non-food crops being cultivated in Hooghly, the cropping intensity for this district also has turned out to be very high at 1.76 during 1990-93. This is contrary to the case in Bankura where the cropping intensity is only 1.31 during the same period. For the state as a whole, the value of cropping intensity is found to be 1.57 during 1990-93.

Table 3.2 : Cropping Pattern and Cropping Intensities in the Sampled Districts during 1990-93.

Proportion of cropped area under 1	Hooghly 2	Bankura 3	West Bengal 4
Rice (Aus)	3 31	7.72	7.24
Rice (Aman)	48.22	69.96	55.28
Rice (Boro)	15.71	7.71	11.58
Rice (total)	67.24	85.39	74.10
Wheat	0.35	1.66	3.40
Other cereals	0.01	0.58	1.10
Cereals (total)	67.60	87.63	78.60
Pulses (total)	0.16	0.67	3.70
Foodgrains (total)	67.76	88.30	82 30
Oilseeds (total)	8.72	7.65	6.92
Jute	7.35	0.08	6.74
Other Fibres (total)	0.02	0.24	0.17
Spices	0 15	0.20	0.75
Sugarcane	0.02	0.04	0 19
Tobacco	-	0.02	0.16
Potato	15.98	3.47	2.77
Non-foodgrains (total)	32 24	11.70	17.70
Total	100.00	100.00	100.00
Cropping Intensity	1 76	1.31	1.57

Source : Government of West Bengal, Statistical abstract : West Bengal, 1994-95; Economic Review, West Bengal, 1996-97.

Apart from having much higher cropping intensity and superior cropping pattern, the yield rates for the crops also appear to be higher in Hooghly as compared to Bankura. This becomes clear from Table 3.3 where we consider yield rates of some selected crops for these districts during 1990-93. It is interesting to note that for all crops (except sugarcane) considered in Table 3.3, yield levels are clearly higher in Hooghly.

Table 3.3 : Yield Rates of Some Selected Crops in the Sampled Districts during 1990-93.

(Kg. per hectare)

Crop 1	Hooghly 2	Bankura 3	West Bengal 4
Rice	2350	2110	1960
Wheat	2260	1850	2120
Pulses	590	520	660
Oilseeds	980	790	820
Jute	2732	2732	1978
Sugarcane	5290	5650	6090
Potato	25290	25130	22040

Source : Government of West Bengal, Statistical abstract : West Bengal, 1994-95; Economic Review, West Bengal, 1996-97.

We have also presented in Table 3.4 some data on the adoption levels of modern agricultural technology in the two districts. On all aspects, Hooghly clearly occupies a superior position. During 1988-91, the percentage of gross cropped area irrigated was 73 in Hooghly while the corresponding figure for Bankura is found to be 53.3 per cent. The utilisation of chemical fertilisers during 1990-93 appears to be almost three times higher in Hooghly as compared to Bankura. Similarly, the percentage of area under high-yielding varieties of seeds (considered for rice and wheat) in 1992-93 also appears to be almost three times higher in Hooghly (76 per cent) in comparison to

Table 3.4 : Some Indicators of Agricultural Technology in the Sampled Districts.

Item 1	Hooghly 2	Bankura 3	West Bengal 4
Percentage of gross cropped area irrigated during 1988-91	73.00	53.50	54.20 *
Fertiliser use per hectare of gross cropped area (Kgs.) in 1990-93	188.17	69 31	95.12
Percentage of area under HYVs of Rice and Wheat in 1992-93	76.37	25.85	61.96
Per thousand net cropped hectare number (in 1989) of			
Pumpsets+	157.17	44 76	71.62
Power-tillers	11 97	0 12	1.30
Tractors	2.54	0.67	1 01
Percentage of villages electrified upto March 1994	100.00	65 00	75 99

Notes : * relates to the period 1992-95.
+ includes both diesel engine pumpsets and electric pumpsets.

Sources : Government of West Bengal, Statistical Abstract; West Bengal 1994-95; Economic Review, Various Years; G.S. Bhalla and Gurmail Singh, "Recent Developments in Indian Agriculture: A State Level Analysis", Economic and Political Weekly, Vol.32, No.13, March 29, 1997.

Bankura (26 per cent). All these indicators show much higher use of modern bio-chemical inputs in agriculture in the district of Hooghly.

Hooghly continues to display its superiority even in the matter of adoption of mechanical inputs in the agricultural sector. The data presented in Table 3.4 show that on aspects such as utilisation of irrigation pumpsets, power-tillers and tractors, Hooghly enjoys a far superior position as compared to Bankura. It needs to be mentioned that Hooghly's superiority as regards adoption of mechanical inputs can also be established even through its comparison with the average position for the state.

While comparing the two districts, we may also take a brief note of the performance of commercial banks in them. We have data on average population served by the commercial banks and also their credit-deposit ratios at different points of time. Such data are presented in Table 3.5.

Table 3.5 : Performance of Commercial Banks in the Sampled Districts.

Item		Hooghly	Bankura	West Bengal
1		2	3	4
Average population per commercial bank office as at the end of				
	June 1971	68,000	127,000	60,000
	June 1991	18,000	17,000	16,000
	June 1993	19,000	18,000	17,000
	June 1995	19,000	18,000	17,000
Credit-deposit ratio by the commercial banks in rural areas as on last Friday of				
	June 1981	31 71	39.62	30.53 *
	March 1990	37.04	43 30	44 10
	June 1993	37 29	39.73	45.38
	June 1995	33 90	34.80	39.59

Note : * refers to data available for March 1991.
Source : Government of West Bengal, Economic Review, Various years.

It clearly emerges that the expansion of commercial banking networks in both the districts have been quite remarkable. This becomes clear when we look at the data on average population per commercial bank office at different points of time. While in June 1971, average population served by each commercial bank in Hooghly was 68,000, the corresponding figure in June 1995 stands at 19,000 only. Similarly, in Bankura, average population served by each commercial bank in June 1971 was 1,27,000 which reduced to 18,000 in June 1995.

Although in terms of expansion of banking networks the performance in both the districts appears to be encouraging, in terms of credit-deposit ratios the picture has not been satisfactory. In rural Hooghly, the credit-deposit ratio stood at 31.71 as on the last Friday of June 1981 which improved marginally to 33.90 on the same day in 1995. The situation has worsened in rural Bankura which recorded credit-deposit ratio at 39.62 as on the last Friday of June 1981 which declined to 34.80 on the same day in 1995. It is also to be noted that while in 1981, the credit-deposit ratios for these districts were above the average credit-deposit ratio computed for the state, in recent years, the credit-deposit ratios in both the districts have become lower than the average credit-deposit ratio for the state. The implication of this is that the commercial banks have not expanded their credit base in accordance with the expansion of deposits mobilisation by them in the rural areas. The prevailing situation thus seems to be ideal for the informal lenders to expand their networks in the rural areas of these districts.

3.2 The Sampled Villages

In this section, we take note of the characteristics of our sampled villages as also the households residing in them. As pointed out in Chapter I, we have surveyed four villages from each of our sampled districts. To reiterate, among the villages chosen for Hooghly, three are agriculturally advanced while the remaining one is relatively backward. Again three of the villages chosen from Bankura are backward while the remaining one is advanced. Having chosen our villages in this manner, we have put together four advanced villages to represent an agriculturally advanced situation while the backward villages are clumped together to represent the backward agricultural system.

We have data on several indicators (both social as well as economic) to show the differences between these two sets of villages and also their households. Some of these are reported below :

Caste Distribution : The backward villages clearly have greater concentration of lower castes and tribals. Table 3.6 shows that 53 per cent of the households in backward villages are drawn from the category of lower castes and tribals while the corresponding percentage in the advanced villages is found to be 23.64 only. It is also to be noted that the percentage of lower castes and tribals has not been the same all along the farm size continuum. In all types of villages, the percentage of lower castes and tribals has been extremely high (nearly 93 per cent) among the agricultural labourers. Among various categories of farmers, the percentage of lower caste and tribals has

also been higher for those belonging to the lower categories (marginal and small farmers).

Table 3.6 : Caste Distribution of the Households in Surveyed Villages.

Category of Households	Number of Households	Percentage of			
		Brahmin	Caste Hindu	Lower castes and tribals	Others
1	2	3	4	5	6
		ADVANCED VILLAGES			
AGL	29	—	3 45	93 10	3 45
MRF	85	3 53	52 94	20.00	23 53
SMF	63	6 35	74 60	11 11	7 94
MDF & LF	43	—	97 67	2.33	—
ALL	220	3 18	61 36	23 64	11 82
		BACKWARD VILLAGES			
AGL	33	3 03	3.03	93 94	—
MRF	103	9 71	29 13	61.16	—
SMF	33	18.18	57.58	24 24	—
MDF & LF	31	12.90	74.20	12 90	—
ALL	200	10 50	36.50	53.00	—
		ALL VILLAGES			
AGL	62	1 61	3.23	93 55	1.61
MRF	188	6.92	39.89	42 55	10 64
SMF	96	10.42	68 75	15.63	5 20
MDF & LF	74	5 40	87.84	6 76	—
ALL	420	6 67	49.52	37.62	6.19

Source : Field survey.

Educational Levels : The two sets of villages also differ in respect of the levels of education attained by their households (Table 3.7). The rate of illiteracy has been distinctly lower in the advanced villages (22.3 per cent) as compared to the backward villages (49.0 per cent). Among various categories of households in all types of villages, illiteracy has been extremely high among the class of agricultural labourers (nearly 87 per cent). However, illiteracy rate has been considerably lower among the farming community. If we compare

illiteracy rates for different categories of farmers between two sets of villages, the same, however, appears to be clearly high in the backward villages. It is also to be noted that the benefits of upper-level education have been enjoyed relatively more by the farming households in the advanced villages as compared to the backward villages.

Table 3.7 : Educational Levels of the Households in Surveyed Villages.

Category of Household	Number of Household	Percentage of			
		Illiterate	Upto Primary	Above Primary and below Matric	Matric and above
1	2	3	4	5	6
		ADVANCED VILLAGES			
AGL	29	86 21	10.34	3 45	—
MRF	85	15.29	24.71	42.35	17 65
SMF	63	12.70	12.70	50 79	23 81
MDF & LF	43	6.98	23.25	44 19	25.58
ALL	220	22 27	19 09	40 00	18 64
		BACKWARD VILLAGES			
AGL	33	87 88	3 03	9 09	—
MRF	103	54 37	15.53	19.42	10.68
SMF	33	24.24	9.09	51 52	15 15
MDF & LF	31	16.13	25.81	41 93	16 13
ALL	200	49.00	14.00	26 50	10.50
		ALL VILLAGES			
AGL	62	87.10	6 45	6.45	—
MRF	188	36.70	19.68	29.79	13.83
SMF	96	16.67	11.46	51.04	20.83
MDF & LF	74	10 81	24 33	43 24	21.62
ALL	420	35.00	16 67	33 57	14.76

Source : Field survey.

Land Distribution : In order to obtain some idea about land distribution patterns in two sets of villages, we have considered the distributions of operated area in these villages. Table 3.8 shows that between two sets of villages, average area under operation is lower in the backward villages as

Table 3.8 : Distribution of Operated Area in Surveyed Villages.

Category of Households	Kharif season			Rabi / Boro season		
	Percentage of		Average operated area	Percentage of		Average operated area
	Households	Operated area		Households	Operated area	
1	2	3	4	5	6	7
ADVANCED VILLAGES						
MRF	44.50	17.99	1.36	44 50	19 67	1.44
SMF	32.99	34.59	3.52	32.99	34 23	3.38
MDF & LF	22.51	47.42	7.06	22.51	46.10	6.68
ALL	100.00	100.00	3.35	100.00	100.00	3.26
	(191)	(640.26)		(191)	(622.82)	
BACKWARD VILLAGES						
MRF	61.68	20.63	0.97	61.21	21.63	0.92
SMF	19.76	23.80	3.48	20.00	23.24	3.01
MDF & LF	18.56	55.57	8.65	18.79	55.13	7.61
ALL	100.00	100.00	2.89	100.00	100.00	2.59
	(167)	(482.29)		(165)	(427.73)	
ALL VILLAGES						
MRF	52.51	19.12	1.14	52 25	20.47	1.16
SMF	26.82	29.96	3.50	26.97	29 76	3.26
MDF & LF	20.67	50.92	7.72	20 78	49.77	7.07
ALL	100.00	100.00	3.14	100 00	100.00	2.95
	(358)	(1122.55)		(356)	(1050.55)	

Note : Figures in the parentheses are total number of households/total area operated.

Source : Field survey.

compared to the advanced ones, both during the Kharif and Rabi/Boro seasons. This implies that the farming households in the backward villages are relatively more constrained by the availability of land area for cultivation. It is also evident from Table 3.8 that during the Kharif season, the backward villages have relatively more concentration of marginal and small farmers (nearly 82 per cent) as compared to the advanced villages (nearly 77 per cent). The same pattern also continues during the Rabi/Boro season. This is indicative of inferior economic conditions of the households belonging to the backward villages.

Extent of Tenancy : Table 3.9 presents data on the extent and types of tenancy in our surveyed villages. It is observed that the spread of tenancy has been quite substantial in our study areas. Considering all villages together, nearly 37 per cent of the households are reported to have entered into tenancy arrangements during the Kharif season while the same for the Rabi/Boro season is found to be 34 per cent. In terms of the percentage of leased-in area to operated area, the figures for the Kharif and Rabi/Boro seasons appear to be nearly 20 per cent and 12 per cent respectively. It is also to be noted that while the incidence of tenancy has been higher in the backward villages during the Kharif season, the same in the advanced villages has been higher during the Rabi/Boro season. This implies that greater percentage of households have entered into seasonal tenancy contracts during the Rabi/Boro season in the advanced villages. This is perhaps prompted by better agricultural conditions prevailing in these villages (in particular, in terms of availability of better irrigation facility).

Table 3.9 : Extent of Tenancy in the Surveyed Villages.

Category of Households	Percentage of tenant households		Percentage of leased-in area to operated area	
	Kharif season	Rabi / Boro season	Kharif season	Rabi / Boro season
1	2	3	4	5
		ADVANCED VILLAGES		
MRF	40.00	47 06	37 07	26 84
SMF	49 21	47 62	21 18	17 18
MDF & LF	32 56	27 91	10 28	6 44
ALL	35.91	37 27	17.23	14 15
		BACKWARD VILLAGES		
MRF	38.83	37 86	29.95	19 48
SMF	57.58	45 45	27 88	13 16
MDF & LF	51.61	25 81	18.25	4 67
ALL	37.50	31 00	22.95	9 85
		ALL VILLAGES		
MRF	39.36	42 02	28.92	23 67
SMF	52.08	46 87	23.45	15.90
MDF & LF	40 54	27 03	14 01	5 65
ALL	36.67	34 29	19.69	12.39

Source : Field survey.

Cropping Pattern : The cropping pattern for the two groups of villages also differ significantly. In the advanced villages, agriculture seems to be more diversified. This is because much higher percentages of cropped area are devoted to Boro paddy and potato in the advanced villages as compared to the backward villages (Table 3.10). If we compare the cropping patterns for various categories of households, it clearly emerges that cropping pattern for the households belonging to smaller farm size groups are more diversified as compared to the higher ones. This is true both for the advanced and backward villages. In all areas, the households in smaller farm size groups devote higher

Table 3.10 : Cropping Pattern and Cropping Intensity in Surveyed Villages.

Category of Households	Area (in percentage) under						Cropping Intensity
	Aman paddy	Boro paddy	Potato	Oilseed	Jute	Total	
1	2	3	4	5	6	7	8
			ADVANCED VILLAGES				
MRF	45.95	16.01	31.27	4.03	2.74	100 00 (250.68)	2.18
SMF	51.68	13.91	27.83	4.85	1.73	100.00 (428.56)	1 93
MDF & LF	58.94	9.82	22.77	7.07	1.40	100.00 (515 10)	1 70
ALL	53.61	12.59	26.37	5.63	1.80	100.00 (1194 34)	1.87
			BACKWARD VILLAGES				
MRF	63.25	6.54	24.06	6.15	—	100.00 (157.32)	1.58
SMF	67.61	10.68	15.33	6.38	—	100.00 (169.78)	1 48
MDF & LF	76.03	7.82	7.18	8.97	—	100 00 (352 47)	1 32
ALL	70.97	8 24	13.12	7.67	—	100 00 (679 57)	1.41
			ALL VILLAGES				
MRF	52.62	12 36	28.49	4.84	1.69	100 00 (408 00)	1 90
SMF	56 20	12 99	24 28	5 29	1 24	100 00 (598 34)	1 78
MDF & LF	65.88	9 01	16 44	7 84	0 83	100 00 (867 57)	1 52
ALL	59 90	11.01	21 57	6.37	1 15	100 00 (1873 91)	1.67

Note : Figures in the parentheses indicate gross cropped area (in acres).
Source : Field survey.

proportion of areas for the cultivation of commercial crops such as potato and Boro paddy.

Cropping Intensity : Table 3.10 also shows that, as expected, cropping intensity is much higher in the advanced villages (1.87) as compared to the backward villages (1.41). Again, between different groups of households, it is much higher for those belonging to lower farm size groups. An inverse relationship between farm size and cropping intensity is clearly visible in all areas of our study.

Farm Asset Endowment : We have collected data on endowment of farm assets by the households in our surveyed villages. These data are presented in Table 3.11. We provide data separately on the values of implements and machineries and draught animals. The data on implements and machineries are further given separately for 'traditional' and 'improved' items. Table 3.11 shows that while the value of traditional implements is higher in the backward villages, the value of improved implements is much higher in the advanced villages. In the same way, the value of draught animals is also higher in the advanced villages. Consequently, the total value of farm assets (per farm / per acre) appear to be significantly higher in the advanced villages as compared to the backward ones. If we look at the farm asset endowments of our sampled households, it clearly emerges that all categories of households in the advanced villages enjoy higher values of all types of farm assets as compared to their counterparts in the backward villages. Table 3.11 also shows that while per farm value of farm assets is higher for the households in higher farm

Table 3.11 : Endowment of Farm Assets by the Households in Surveyed Villages.

Category of Households	Implements and machinery (In Rs.)				Draught animals (In Rs.)		Total farm assets (In Rs.)	
	Traditional		Improved					
	Per farm	Per acre	Per farm	Per acre	Per farm	Per acre	Per farm	Per acre
1	2	3	4	5	6	7	8	9
ADVANCED VILLAGES								
AGL	66	—	—	—	—	—	66	—
MRF	857	290	3536	1198	1776	602	6168	2091
SMF	1764	259	12525	1842	4094	603	18383	2703
MDF & LF	2730	226	11383	943	7448	620	21562	1786
ALL	1379	253	7178	1318	3314	617	11871	2179
BACKWARD VILLAGES								
AGL	7	—	—	—	—	—	7	—
MRF	518	341	430	282	967	635	1914	1258
SMF	2050	399	823	160	2769	538	5643	1097
MDF & LF	2818	250	2434	216	5524	490	10776	956
ALL	1043	309	734	216	1811	536	3588	1062
ALL VILLAGES								
AGL	35	—	—	—	—	—	35	—
MRF	671	310	1834	846	1332	615	3838	1771
SMF	1863	299	8503	1365	3639	584	14004	2248
MDF & LF	2767	236	7634	650	6642	566	17043	1452
ALL	1219	273	4109	921	2598	582	7927	1776

Note : Improved implements include irrigation equipments, sprayers, threshers, power tillers and so on while traditional implements include such items as ploughs, harrows, yokes and seythes and such other implements.

Source : Field survey.

size groups, on the basis of per cropped acre value of farm assets the households in lower farm size groups enjoy the superior position.

Adoption of Modern Inputs : We have gathered data on some indicators which reflect the rate of adoption of modern agricultural inputs (HYV seeds, fertilisers and irrigation) in our sampled villages. Such data are presented in Table 3.12. It appears that, as expected, per acre utilisation of inputs such as HYV seeds, irrigation and fertilisers are much higher in the advanced villages as compared to the backward ones. While nearly 46 per cent of cropped area in the advanced villages are reported to have been cultivated with HYV seeds, the same for the backward villages is found to be 29 per cent. Further, while per acre value of fertilisers used in the advanced villages is calculated to be Rs.1607.00 only, the same in the backward villages is found to be Rs.1108.00 only. Similarly, the percentage of cropped area under irrigation is found to be as high as 84 per cent in the advanced villages which stood at nearly 59 per cent in the backward villages. All these indicate much superior agricultural conditions prevailing over the advanced villages of our study as compared to the backward ones.

If we look at the rates of adoption of these modern inputs by various categories of households, the superiority of those in lower farm size groups could easily be established both in the advanced as well as backward villages. The relationships between farm size and per acre utilisation of inputs such as HYV seeds, fertilisers and irrigation are negative in the villages surveyed by us.

Table 3.12 : Some Indicators of Adoption of Modern Inputs in Surveyed Villages.

Category of Households	Gross Cropped area (in acres)	Percentage of area under HYV	Fertiliser consumption per acre of gross cropped area (in Rs.)	Percentage of gross cropped area irrigated	Percentage of area irrigated under			
					STW / Pumpset	DTW / RLI	Canal	Total
1	2	3	4	5	6	7	8	9
				ADVANCED VILLAGES				
MRF	250.68	54.05	2023	85.00	84.24	15.76	0.00	100 00
SMF	428.56	48.32	1524	84.66	94 53	5 47	0.00	100.00
MDF & LF	515.10	41.06	1473	83.91	92.85	7.15	0.00	100.00
ALL	1194 34	46.39	1607	84.40	91.63	8.37	0.00	100 00
				BACKWARD VILLAGES				
MRF	157.32	36.75	2015	77.07	89 81	1 80	10 56	100.00
SMF	169.78	32.39	1290	68.03	76 48	0 00	23 52	100 00
MDF & LF	352.47	23.97	616	46.22	85 59	0 00	14 41	100 00
ALL	679.57	29.03	1108	58.81	84 24	0.45	15 31	100 00
				ALL VILLAGES				
MRF	408.00	47.38	2020	81.94	86 26	10.58	3.16	100 00
SMF	598.34	43.80	1458	79.94	90.17	4.15	5.68	100.00
MDF & LF	867.57	34.12	1125	68.60	90.86	5 19	3 95	100 00
ALL	1873.91	40.10	1426	75.12	89 53	6 12	4 35	100 00

Source : Field survey.

CHAPTER IV

STRUCTURE AND OPERATION OF RURAL CREDIT MARKETS

The main purpose of this chapter is to obtain some understanding of the structure and functioning of rural credit markets in West Bengal. In this context, we start by discussing the nature of participation of various categories of households in the two segments of rural credit markets namely, formal and informal. We then discuss the distribution pattern of formal and informal loans between different categories of households and also the purposes for which these loans are taken by them. In order to understand the operation of informal credit system, we specifically try to identify the informal lenders and see who borrows from whom in the informal credit market. The terms and conditions of credit is sought to be understood by examining aspects such as duration of loans and collaterals offered. We also discuss the factors which determine the rural households' access to formal loan. This is followed by our computation of the transaction and other costs incurred by various categories of rural households for obtaining formal loans. We also provide in this very chapter our estimates of the 'credit gap' for different groups of households. The discussion closes by providing a summary of main findings emerging from this chapter.

4.1 PARTICIPATION IN CREDIT MARKETS:

In our study areas comprising eight villages from the districts of Hooghly and Bankura, the rural households depend both on the formal and informal

sources in order to meet their credit requirements. As in other areas, the formal sources of credit include the credit supplied by the commercial banks, the 'gramin' banks and the credit co-operative societies. On the other hand, the informal sources mostly include the village moneylenders, traders, inputs sellers, friends and relatives and big cultivators in our study areas.

The nature and rate of participation of various groups of households in rural credit markets in our study areas could be understood in terms of data presented in Table 4.1. The first important point to emerge from this table is that the vast majority of rural households have depended on rural credit system in both the advanced and backward villages. This becomes clear from the fact that more than 90 per cent of all households have appeared as the borrowing households in these villages. This is indicative of the necessity of credit support to a large section of rural households. It is, however, to be noted that all sections of rural households have not been served equally by the rural credit agencies. For example, the class of agricultural labourers have been relatively less fortunate to obtain loans and hence they have lower percentage of borrowing households as compared to the other (farming) households. The categories of marginal, small, medium and large farmers do not differ much in terms of the percentage of borrowing households when all villages are considered together, although the category of small farmers seems to have a slightly higher percentage of borrowing households as compared to marginal and medium and large farmers.

Table 4.1 : Participation of Households in Credit Markets in Surveyed Villages.

Category of Households	No. of Households	Percentage of Households		Percentage distribution of borrowing Households under		
		Borrowing	Not borrowing	Formal only	Informal only	Both
1	2	3	4	5	6	7
			ADVANCED VILLAGES			
AGL	29	79.31	20.69	0 00	86 96	13 04
MRF	85	90.59	9.41	11 69	50.65	37.66
SMF	63	95.24	4.76	3.33	56 67	40 00
MDF & LF	43	90.69	9.31	7 69	61 54	30 77
ALL	220	90.45	9.55	7.04	58 79	34 17
			BACKWARD VILLAGES			
AGL	33	84.85	15.15	3.57	92.86	3.57
MRF	103	94.17	5.83	6.19	64.95	28.86
SMF	33	93.94	6.06	12.90	35.49	51 61
MDF & LF	31	96.77	3.28	3.33	53.34	43.33
ALL	200	93.00	7.00	6.45	62 37	31 18
			ALL VILLAGES			
AGL	62	82 26	17.74	1.96	90.20	7 84
MRF	188	92.55	7.45	8.62	58 62	32 76
SMF	96	94.79	5.21	6.59	49 45	43 96
MDF & LF	74	93.24	6.74	5.80	57.96	36.24
ALL	420	91.67	8.33	6 75	60 52	32 73

Source : Field survey.

4.2 Source of Loan:

As already pointed out, in our surveyed areas, the two broad sources of credit are the formal and informal sources. In order to understand the dependence of rural households on these sources of credit, we have presented in Table 4.1 data on the percentage distribution of borrowing households under these sources of borrowing. It is observed that the category of agricultural labourers have depended very significantly on informal credit sources in order to meet their credit requirements in our study villages. In the advanced villages, cent per cent of borrowing households in the category of agricultural labourers reported to have taken loans from the informal sources while the corresponding percentage for backward villages is nearly 96 per cent. On the other hand, the percentage of borrowers among the agricultural labourers who depended on the formal sources is found to be very low. For agricultural labourers, in the advanced villages, only 13 per cent of the borrowing households are found to have taken loans from formal sources while the corresponding figure for backward villages is nearly 7 per cent. A much higher percentage of borrowing households among the farmers are found to have taken loans from the formal sources. Among various categories of farmers, the 'marginal' ones are reported to have the highest percentage of households borrowing from the formal sources in the advanced villages while in the backward villages, the households in 'small' category reported the highest percentage of borrowers from formal sources. Although the households in the category of medium and large farmers do not lag far behind other categories of farmers in this regard, there seems to be a tendency of small farmers being

served better by the formal credit agencies in our study villages. This becomes particularly clear when we consider the percentage distribution of borrowing households for different categories of farmers for all villages together.

4.3 Distribution of Formal and Informal Loans:

We have noted above that the class of small farmers are being served relatively better by the formal credit agencies. This fact gets further corroborated if we consider the percentage of formal loan to total loan for various categories of farmers. Another way of confirming this observation would be to consider the percentage distribution of formal loans across various groups of households. On both these counts, the small farmers seem to reflect their superior position (Table 4.2). However, when we consider amount of loan per borrowing household, it clearly emerges that the households in higher categories enjoy a superior position. The data presented in Table 4.2 on amount of formal loan per borrowing household in the advanced villages show that there exists a positive relationship between the amount of loan per borrowing household and the size of land holdings. The same conclusion can be drawn for the backward villages if we exclude the case of agricultural labourers from our comparison. As regards the distribution of informal loans, it is found that in both the advanced and backward villages, the amount of informal loans per borrowing household goes up as we move to the higher farm size categories. Thus the conclusion that emerges is that although a greater proportion of small farmers is being served by formal credit agencies, in terms of per household amount of borrowing, they lag behind the

Table 4.2 : Proportion of Borrowing and Amount of Borrowing from Different Sources in Surveyed Villages.

Category of Households	Percentage of formal loan to total loan	Percentage of informal loan to total loan	Percentage of formal loan borrowed by the group to total loan	Percentage of informal loan borrowed by the group to total loan	Amount of loan per borrowing Household (in Rs.)	
					Formal	Informal
1	2	3	4	5	6	7
			ADVANCED VILLAGES			
AGL	25.98	74.02	2.18	3.17	4167	1548
MRF	32.71	67.29	30.99	32 55	4669	5369
SMF	36.33	63.67	39.24	35.11	8644	6791
MDF & LF	32.57	67.43	27.59	29.17	10533	9087
ALL	33.80	66.20	100.00	100 00	6984	6063
			(5.73)	(11.20)		
			BACKWARD VILLAGES			
AGL	32.61	67.39	3.07	2 94	4750	727
MRF	26.37	73.63	40.78	52.84	3718	3878
SMF	42.76	57.24	21.88	13.59	3390	3361
MDF & LF	34.18	65.82	34.27	30.63	7588	7054
ALL	31.70	68.30	100.00	100.00	4428	3838
			(3.09)	(6.68)		
			ALL VILLAGES			
AGL	28.48	71.52	2.49	3.09	4400	1105
MRF	29.74	70.26	34.42	40.12	4220	4515
SMF	37.64	62.36	33.15	27.08	6359	5702
MDF & LF	33.20	66.80	29.94	29.71	9111	8180
ALL	33.03	66.97	100.00	100.00	5807	4985
			(8.82)	(17.88)		

Note : Figures in the brackets indicate total amount of loan (in lakhs).

Source : Field survey.

category of medium and large farmers. The same conclusion holds as regards the distribution of informal credit in our study villages.

4.4 Purpose of Loan:

We now discuss purposewise and sourcewise distribution of formal and informal loans in our study villages The relevant data on this aspect are presented in Tables 4.3, 4.4 and 4.5. It is observed from these tables that the loans taken from formal sources are meant for their use for production purposes in a large number of cases. In the advanced villages, of the loans taken from formal sources in about 87 per cent cases, they have been used for production purposes. The corresponding percentage in relatively backward villages is found to be nearly 89 per cent. In our study villages, rural households also obtained informal loans in order to meet their requirements for agricultural production in a majority of such cases. It is noted that in the advanced villages, in 71 per cent cases, the informal loans are taken for the purpose of production while the same percentage in the backward villages is 53 per cent. This implies the role played by the informal sector, besides the formal sector, in meeting requirements for production credit for the farmers. It is, however, to be mentioned that since the formal agencies do not provide credit for the purpose of consumption, in the event of such a need, the households have to depend on informal credit sources. This fact is reflected through our data which show that in the advanced villages, in about 26 per cent cases, the loans taken from informal sources have been utilised for the

Table 4.3 : Purposewise and Sourcewise Distribution of Formal and Informal Loans in Surveyed Villages
Advanced Villages.

(Percentage of loan cases)

Purpose of loan	Source of Loan	Category of Households				
		AGL	MRF	SMF	MDF & LF	ALL
1	2	3	4	5	6	7
Aman Cultivation	Formal	—	10 42	6 45	17 65	10 10
	Informal	—	11.20	8 85	22 89	12 39
Rabi/Boro Cultivation	Formal	—	72 91	70 97	64 71	68 67
	Informal	—	56 80	71.68	59 04	57 93
Purchase of agricultural equipments	Formal	—	4 17	16 13	5 88	8 09
	Informal	—	0.80	1.77	1 21	1 15
Production	Formal	—	87.50	93 55	88 24	86 86
	Informal	—	68 80	82 30	83 14	71 47
Construction and repair of houses	Formal	—	—	—	—	—
	Informal	7.69	9 60	3 54	6 02	6 63
Consumption and health care	Formal	—	2 08	—	5 88	2 02
	Informal	88 46	11 20	5 31	3 61	13 26
Social purposes	Formal	—	4 17	—	—	2 02
	Informal	—	8 00	7 96	2 41	6 05
Generalised Consumption	Formal	—	6 25	—	5 88	4 04
	Informal	96 15	28 80	16 81	12 04	25 94
Others	Formal	100 00	6 25	6 45	5 88	9 10
	Informal	3 85	2 40	0 89	4 82	2 59
Total	Formal	100 00	100 00	100 00	100 00	100 00
		(3)	(48)	(31)	(17)	(99)
	Informal	100 00	100 00	100 00	100 00	100 00
		(26)	(125)	(113)	(83)	(347)

Note : Figures in the parentheses indicate total number of loan cases.

Source : Field survey.

Table 4.4 : Purposewise and Sourcewise Distribution of Formal and Informal Loans in Surveyed Villages Backward Villages.

(Percenatge of loan cases)

Purpose of loan	Source of Loan	Category of Households				
		AGL	MRF	SMF	MDF & LF	ALL
1	2	3	4	5	6	7
Aman Cultivation	Formal	—	30 77	26 09	31 58	28 92
	Informal	—	8 96	26 67	24 14	13 98
Rabi/Boro Cultivation	Formal	—	58 98	65 22	52 63	57 83
	Informal	—	35 17	53 33	60 35	39 43
Purchase of agricultural equipments	Formal	—	—	—	10 53	2 41
	Informal	—	—	—	—	—
Production	Formal	—	89 75	91 31	94 74	89 16
	Informal	—	44 13	80 00	84 49	53 41
Construction and repair of houses	Formal	—	—	—	—	—
	Informal	6 45	3 45	4 44	1 72	3 58
Consumption and health care	Formal	—	—	—	—	—
	Informal	87 10	42 07	15 56	8 62	35 84
Social purposes	Formal	—	—	—	—	—
	Informal	6 45	3 45	—	5 17	3 58
Generalised Consumption	Formal	—	—	—	—	—
	Informal	100.00	48 97	20 00	15 51	43 00
Others	Formal	100 00	10 25	8 69	5 26	10 84
	Informal	—	6 90	—	—	3 59
Total	Formal	100.00	100 00	100 00	100 00	100 00
		(2)	(39)	(23)	(19)	(83)
	Informal	100 00	100 00	100.00	100 00	100 00
		(31)	(145)	(45)	(58)	(279)

Note : Figures in the parentheses indicate total number of loan cases.

Source : Field survey.

Table 4.5 : Purposewise and Sourcewise Distribution of Formal and Informal Loans in Surveyed Villages
All Villages.

(Percentage of loan cases)

Purpose of loan	Source of Loan	Category of Households				
		AGL	MRF	SMF	MDF & LF	ALL
1	2	3	4	5	6	7
Aman Cultivation	Formal	—	19 54	14 82	25 00	18 68
	Informal	—	10 04	13 92	23 40	13 12
Rabi/Boro Cultivation	Formal	—	66 67	68 52	58 33	63 74
	Informal	—	45.35	66 45	59 57	49 76
Purchase of agricultural equipments	Formal	—	2 30	9 26	8 33	5 49
	Informal	—	0 37	1 27	0 71	0 64
Production	Formal	—	88 51	92 60	91 66	87 91
	Informal	—	55 76	81 64	83 68	63 52
Construction and repair of houses	Formal	—	—	—	—	—
	Informal	7 02	6.32	3 80	4 26	5 28
Consumption and health care	Formal	—	1 15	—	2.78	1 10
	Informal	87 72	27 88	8 23	5 67	23 36
Social purposes	Formal	—	2.30	—	—	1 10
	Informal	3 51	5.58	5 70	3 55	4 96
Generalised Consumption	Formal	—	3 45	—	2 78	2 20
	Informal	98 25	39 78	17 73	13 48	33 60
Others	Formal	100 00	8 04	7 40	5.56	9 89
	Informal	1 75	4 46	0 63	2 84	2 88
Total	Formal	100 00	100 00	100.00	100 00	100.00
		(5)	(87)	(54)	(36)	(182)
	Informal	100.00	100.00	100.00	100 00	100 00
		(57)	(270)	(158)	(141)	(626)

Note : Figures in the parentheses indicate total number of loan cases.
Source : Field survey.

purpose of 'generalised consumption'[1] In the backward villages, this percentage turns out to be as high as 43 per cent.

Another important aspect to be noted in this context is that the class of agricultural labourers have not received any loan from the formal agencies either for the purpose of agricultural production or generalised consumption. In a very limited number of cases, agricultural labour households are reported to have obtained formal loans under Integrated Rural Development Programme schemes only. The farming households have, however, depended very largely on formal credit sources to meet a part of their expenses on agricultural production. Such a dependence has been particularly greater during the Rabi/Boro season. In order to meet the requirements for generalised consumption, these households had to depend on the informal sources of credit. Among various categories of farmers, this dependence on informal credit gets lower as we move on to higher farm size groups. However, we must not overlook the fact that for all categories of farmers, in a significant number of cases, informal loans are taken for production purposes. This then indicates the inadequacy of formal loans even to meet the requirements of production credit of the farming households in the villages studied.

4.5 Who are the Informal Lenders ?

In the context of our discussion of rural credit markets in West Bengal, it would be necessary to know specifically who the rural informal lenders are and who borrows from whom in the market for informal credit. These become

---

[1] Under generalised consumption we include the loans taken for the purpose of construction and repair of houses, consumption and health care and social ceremonies.

important questions particularly when we observe the informal credit to have established a strong base in our study villages. Our Table 4.2 above revealed that of the total amount borrowed by the rural households in our study villages, the share of the informal sector alone has been nearly two-third which is indicative of much stronger base of informal credit as compared to the formal credit in the rural areas of West Bengal.

Addressing ourselves to the above question, we present in Table 4.6 data on distribution of informal loan cases by the borrower-lender types. It is observed that for all villages taken together, the most important source of informal loans is the 'inputs sellers', which is followed by the 'big cultivators', 'village moneylenders', 'friends and relatives' and 'traders'. Table 4.6 shows that of the total informal loan cases, in about 38 per cent cases, the loans have been obtained from the 'inputs sellers'. In these cases, the arrangement is such that the borrower would receive credit in kind (i.e. seeds, fertiliser etc.) which he would repay either in cash or product after harvesting his crop. Table 4.6 also shows that in about one-fifth cases, the informal loans have been obtained from the big cultivators. As would become clear in our later chapter, a good number of these are the interlinked loans. The big cultivators in their attempt to ensure labour supply during busy agricultural seasons, advance credit particularly to the class of agricultural labourers and marginal farmers who have greater number of family workers. These households, in turn, are supposed to repay the loans through providing labour services to the cultivator-lenders. The village moneylenders also occupy a dominant position

Table 4.6 : Distribution of Informal Loan Cases by Borrower-Lender Types in Surveyed Villages.

(Percentages)

Type of Borrower	Type of Lender							
	Village moneylenders	Traders	Inputs sellers	Friends & relatives	Big cultivators	Others	Total	
1	2	3	4	5	6	7	8	
				ADVANCED VILLAGES				
AGL	3.85	—	—	—	96.15	—	100.00	(26)
MRF	17.60	16.80	34.40	10.40	16.80	4.00	100.00	(125)
SMF	16.81	11.50	58.41	7.08	0.89	5.31	100.00	(113)
MDF & LF	10.84	3.62	73.49	10.84	—	1.21	100.00	(83)
ALL	14.70	10.66	48.99	8.65	13.54	3.46	100.00	(347)
				BACKWARD VILLAGES				
AGL	6.45	—	—	3.23	87.09	3.23	100 00	(31)
MRF	29.66	3.45	15.86	11.72	35.17	4.14	100.00	(145)
SMF	28.89	15.56	31.11	17.78	2.22	4.44	100.00	(45)
MDF & LF	18.97	6.90	51.72	18.97	1.72	1 72	100.00	(58)
ALL	24.73	5.74	24.01	13.27	28.67	3.58	100.00	(279)
				ALL VILLAGES				
AGL	5.27	—	—	1.75	91.23	1 75	100.00	(57)
MRF	24.07	9.63	24.45	11 11	26 67	4.07	100 00	(270)
SMF	20.25	12.66	50.63	10.13	1.27	5 06	100.00	(158)
MDF & LF	14.18	4.96	64.54	14.19	0.71	1.42	100.00	(141)
ALL	19.17	8.47	37.86	10.70	20.29	3.51	100.00	(626)

Note : Figures in the parentheses indicate total loan cases.

Source : Field survey.

in the informal credit market because in about 19 per cent cases, they are reported to have offered loans.

The above ranking of informal lenders in terms of the distribution of loan cases would change a bit if we consider the distribution of informal loan amount by borrower-lender types (Table 4.7). On this basis, the village moneylenders appear to be the most important source of informal loans. They are found to have advanced nearly 25 per cent of total loan amount in the informal credit market. The next to come are the 'friends and relatives' whose share in total informal loan amount is about 24 per cent. The 'inputs sellers' have a share of nearly 23 per cent while the share of the traders is found to be nearly 11 per cent. The big cultivators are now found to have supplied only 10 per cent of total informal loan amount in our study villages.

On the basis of above discussion, it appears that the most important sources of informal credit in our study villages are village moneylenders, inputs sellers, friends and relatives and big cultivators if we order them in terms of importance.

On the question of who borrows from whom in the market for informal credit, our observation is that in the advanced villages (Tables 4.8), for the class of agricultural labourers, the main source of borrowing has been the class of big cultivators. This is also true for the backward villages as well (Table 4.9). For the marginal and small farmers in the advanced villages, the most important sources of informal borrowing have been the 'inputs sellers', village moneylenders and traders (Table 4.8). For the medium and large farmers,

Table 4.7 : Distribution of Amount of Informal Loan by Borrower-Lender Types in Surveyed Villages.

(Percentages)

Type of Borrower	Type of Lender							
	Village moneylenders	Traders	Inputs sellers	Friends & relatives	Big cultivators	Others	Total	
1	2	3	4	5	6	7	8	
				ADVANCED VILLAGES				
AGL	1.12	—	—	—	98.88	—	100 00	(0 36)
MRF	25.46	19.26	10.81	26.28	17.83	0.36	100.00	(3.65)
SMF	28.08	18.75	27.92	23.03	0.32	1 90	100 00	(3.93)
MDF & LF	15.13	9.48	44.67	25.52	—	5 20	100 00	(3 26)
ALL	22.60	15.61	26.36	24.08	8 94	2 41	100 00	(11.20)
				BACKWARD VILLAGES				
AGL	4.07	—	—	1.53	93.89	0 51	100 00	(0.20)
MRF	30.02	1.22	5.11	21.16	11.60	30 89	100 00	(3.53)
SMF	40.33	9.03	19.45	24.57	0 45	6 17	100 00	(0 91)
MDF & LF	20.53	2.44	37.20	32.27	7 02	0 54	100 00	(2 04)
ALL	27.75	2.62	16.74	24 45	11 10	17 34	100 00	(6 68)
				ALL VILLAGES				
AGL	2.17	—	—	0.54	97 11	0 18	100 00	(0 56)
MRF	27.70	10.39	8.01	23.77	14 77	15 36	100.00	(7 18)
SMF	30.37	16.93	26.34	23.32	0.34	2 70	100 00	(4.84)
MDF & LF	17.21	6.77	41.80	28.12	2.70	3.40	100.00	(5 30)
ALL	24.52	10.76	22.77	24.22	9.75	7 98	100.00	(17.88)

Note : Figures in the parentheses indicate total amount of loan.

Source : Field survey.

Table 4.8 : Lender Types and Puposes for Informal Loans in Surveyed Villages
Advanced Villages.

(Percentages of loan cases)

Category of Households	Purpose of Loan	Type of Lender							
		Village moneylenders	Traders	Inputs sellers	Friends & relatives	Big cultivators	Others	Total	
1	2	3	4	5	6	7	8	9	
	Production	—	—	—	—	—	—	—	
AGL	Generalised Consumption	4 00	—	—	—	96 00	—	100 00	(25)
	Others	—	—	—	—	100 00	—	100 00	(1)
	Production	8 33	26 19	51.19	4 76	8 34	1 19	100 00	(84)
MRF	Generalised Consumption	36 11	—	—	19 44	38 89	5 56	100 00	(36)
	Others	40 00	—	—	40 00	—	20 00	100 00	(5)
	Production	9 78	13 04	71 74	2 17	1 09	2 18	100 00	(92)
SMF	Generalised Consumption	47 37	10 53	—	31 58	—	10 52	100 00	(19)
	Others	50 00	—	—	—	—	50 00	100 00	(2)
	Production	7 25	2 90	88 40	1 45	—	—	100 00	(69)
MDF & LF	Generalised Consumption	30 00	10 00	—	50 00	—	10 00	100 00	(10)
	Others	25.00	25 00	—	50 00	—	—	100 00	(4)
	Production	8 57	14 69	69 39	2 86	3 27	1 22	100 00	(245)
ALL	Generalised Consumption	28 89	3 33	—	20 00	42 22	5 56	100 00	(90)
	Others	33 33	8 33	—	33 34	8 33	16 67	100 00	(12)

Note : Figures in the parentheses indicate total number of loan cases.

Source : Field survey.

Table 4.9 : Lender Types and Puposes for Informal Loans in Surveyed Villages
Backward Villages.

(Percentages of loan cases)

Category of Households	Purpose of Loan	Type of Lender							
		Village moneylenders	Traders	Inputs sellers	Friends & relatives	Big cultivators	Others	Total	
1	2	3	4	5	6	7	8	9	
AGL	Production	—	—	—	—	—	—	—	
	Generalised Consumption	6.45	—	—	3 23	87.09	3 23	100 00	(31)
	Others	—	—	—	—	—	—	—	
MRF	Production	29 69	4.69	35 94	9 37	20 31	—	100 00	(64)
	Generalised Consumption	28 17	2 82	—	14 08	50 70	4 23	100 00	(71)
	Others	40 00	20 00	—	20 00	20 00	—	100 00	(10)
SMF	Production	30 55	13.89	38 89	13 89	2 78	—	100 00	(36)
	Generalised Consumption	22 22	22.22	—	33.34	—	22 22	100 00	(9)
	Others	—	—	—	—	—	—	—	
MDF & LF	Production	14 29	8 16	61 22	14 29	2 04	—	100 00	(49)
	Generalised Consumption	44 44	—	—	44 45	—	11 11	100 00	(9)
	Others	—	—	—	—	—	—	—	
ALL	Production	24.83	8.05	44.97	12 08	10.07	—	100 00	(149)
	Generalised Consumption	23 33	3 33	—	15 00	52 50	5 84	100 00	(120)
	Others	40.00	20 00	—	20 00	20 00	—	100 00	(10)

Note : Figures in the parentheses indicate total number of loan cases.

Source : Field survey.

apart from the 'inputs sellers', friends and relatives and villages moneylenders have been their other lenders In the backward villages, for the marginal farmers the important borrowing sources are big cultivators, village moneylenders, inputs sellers and friends and relatives according to the order of preference (Table 4.9). For the small farmers, the important lenders are found to be the 'inputs sellers', village moneylenders, friends and relatives and traders. For the medium and large farmers in the backward villages apart from 'inputs sellers', village moneylenders and friends and relatives are found to be other important lenders.

On the whole, it appears that among the various types of borrowers, the categories of marginal and small farmers have been preferred most by the village moneylenders. The traders while advancing loans have also targeted these categories in most cases. The inputs sellers displayed a tendency of serving all categories of farmers but their preference for better-off farmers is clearly established both in the backward as well as advanced villages. The incidence of better-off farmers obtaining loans from their friends and relatives has also been greater in our study villages. On the other hand, the big cultivators have mostly preferred the classes of agricultural labourers and marginal farmers for advancing loans.

In the context of our discussion on informal lending, we may also see if there is any relationship between the type of informal lenders and the purposes for which informal loans are obtained. Table 4.8 and 4.9 provide data on this aspect. It is observed that the loans obtained from the inputs sellers are used by all categories of farmers for the purpose of production. This is

understandable in so far as these loans are given in kind (seeds, fertiliser etc.) and hence cannot be used for purposes other than production. The loans obtained from traders are also used mostly for production purpose. However, the loans obtained from big cultivators and friends and relatives have been used more for the purpose of consumption. Although in some cases, the loans taken from village moneylenders are used for production, in a large number of these cases, they have been used for the purpose of consumption. It thus appears that in our study villages, the most important providers of informal loans for the purpose of production have been the 'inputs sellers' and traders while the most important informal lenders supplying consumption credit have been the big cultivators, village moneylenders and friends and relatives (Tables 4.8 and 4.9).

4.6 Terms and Conditions of Formal and Informal Loans:

We now discuss some broad aspects relating to the terms and conditions of formal and informal credit. Specifically, we discuss issues such as the duration of these loans, the types of collaterals accepted in the credit markets and so on.

4.6.1 Duration of Formal and Informal Loans:

We have noted above a very prominent tendency of all categories of farmers borrowing both from formal and informal sources for the purpose of production. As is well known, production loans are of short duration type (mostly for six months, but in some cases these may be obtained upto a period of one year also). Thus, if we look at the data presented in Table 4.10

Table 4.10 : Duration of Formal and Informal Loans in Surveyed Villages
All Villages.

(Percentage of loan cases)

Duration of loan (in months)	Source	Category of Households				
		AGL	MRF	SMF	MDF & LF	ALL
1	2	3	4	5	6	7
Up to 6	Formal	—	85.06	85.19	83.33	82.42
	Informal	77 19	51 11	62 03	60 99	58 47
7 — 12	Formal	—	1 14	—	—	0 55
	Informal	15.79	10.74	7.59	9.93	10 22
13 — 36	Formal	100.00	9.20	5.55	2 78	9.34
	Informal	—	—	—	—	—
Above 36	Formal	—	4.60	9.26	13.89	7 69
	Informal	—	—	—	—	—
Unspecified	Formal	—	—	—	—	—
	Informal	7.02	38.15	30.38	29 08	31 31
Total	Formal	100 00	100.00	100.00	100 00	100 00
		(5)	(87)	(54)	(36)	(182)
	Informal	100.00	100.00	100.00	100 00	100 00
		(57)	(270)	(158)	(141)	(626)

Note : Figures in the parentheses indicate total number of loan cases.

Source : Field survey.

on the duration of formal and informal loans, the predominance of the short duration loans is clearly established in our study areas. It is observed that of all formal loans, in about 82 per cent cases, these have been borrowed for a period of upto six months. The corresponding figure for loans borrowed from informal sources is nearly 58 per cent. It also appears from Table 4.10 that in our study areas, the institutional credit agencies have not supplied long term loans (i.e. investment loans) to any great extent. This becomes clear when we observe that in only 8 per cent cases, the loans offered by them are for a duration extending beyond three years. As regards the loans supplied by the informal agencies, a contrasting picture is observed. While a majority of them are for a period of six months or less, in a significant number of cases (nearly 31 per cent) the period of loan has remained unspecified. These are the cases where the informal lenders do not insist on quick repayment of the principal amount of loan but remain satisfied to obtain interest charges regularly which are obviously very high.[2]

4.6.2 Collaterals for Formal and Informal Loans:

In the market for formal credit, it is almost impossible to obtain loans without offering some collateral. The collateral-based lending policies pursued by the formal credit agencies have stood in the way of landless and land-poor people obtaining credit from them. In the context of our region, the households without any land or other asset which may be accepted as the collateral have obtained formal loans only under the Integrated Rural Development

---

[2] These are mostly the loans taken from village moneylenders as revealed by our enquiry on the informal borrowers.

Programme schemes. Under this scheme, possession of valid collaterals by the landless households is not necessary to obtain loans from the formal agencies. However, the landed households approaching for formal loans which are to be utilised for production / investment purposes must possess some collateral or the other. Consequently, as Table 4.11 shows, there have been very few cases where the class of farmers have obtained formal loans without offering some collateral. Considering all villages together, in about 94 per cent cases, formal loans have been obtained by offering some collateral. Among various types of collaterals, land is the most preferred one with the formal credit agencies. It is shown in Table 4.11 that in about 93 per cent cases, land has been offered as the collateral for obtaining formal loans.

The market for informal credit varies considerably as compared to the market for formal credit in terms of collateral securities accepted in them. While collateral security is almost a necessity for obtaining formal loans, it is not always quite so in the case of informal loans. Thus, as Table 4.12 shows, considering all villages together, only in about 39 per cent cases, informal loans have been taken by the rural households by offering some collateral. It is also to be noted that while collateral security is necessary for all categories of borrowers almost equally in the market for formal credit, such a requirement may be imposed more strongly upon the poorer households in the market for informal credit. Table 4.12 clearly shows that, in the informal credit market, collateral security is very essential for the class of agricultural labourers and this requirement gets softened as we move on to the higher farm size categories. Yet another difference between the formal and informal credit

Table 4.11 : Distribution of Loan Contracts with Collateral in case of Formal Loan.

(Percentage of loan cases)

Category of Households	Percentage of Loan Contracts		Percentage of Loan Contracts with Collateral as				
	Without collateral	With collateral	Land	Service	Others	Total	
1	2	3	4	5	6	7	
ADVANCED VILLAGES							
AGL	100.00	—	—	—	—	—	
MRF	4.17	95.83	93.48	6.52	—	100 00	(46)
SMF	—	100.00	90.32	3.23	6 45	100 00	(31)
MDF & LF	—	100.00	88.24	5 88	5 88	100.00	(17)
ALL	5.05	94.95	91.49	5.32	3.19	100 00	(94)
BACKWARD VILLAGES							
AGL	100.00	—	—	—	—	—	
MRF	2.56	97.44	94.74	5.26	—	100.00	(38)
SMF	8.70	91.30	95.24	4.76	—	100.00	(21)
MDF & LF	5.26	94.74	94.44	—	5 56	100.00	(18)
ALL	7.23	92.77	94.80	3.90	1 30	100 00	(77)
ALL VILLAGES							
AGL	100.00	—	—	—	—	—	
MRF	3.45	96.55	94.05	5.95	—	100 00	(84)
SMF	3 70	96.30	92 30	3.85	3.85	100 00	(52)
MDF & LF	2 78	97 22	91.42	2 86	5 72	100 00	(35)
ALL	6 04	93.96	92.98	4.68	2 34	100 00	(171)

Note : Figures in the brackets indicate total number of loan cases with Collateral.

Source : Field survey.

Table 4.12 : Relative Importance of Different Types of Collateral in Informal Credit Market.

Item	Advanced Villages Category of Households					Backward Villages Category of Households					All Villages Category of Households				
	AGL	MRF	SMF	MDF & LF	All	AGL	MRF	SMF	MDF & LF	All	AGL	MRF	SMF	MDF & LF	All
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total number of loan contracts	26	125	113	83	347	31	145	45	58	279	57	270	158	141	626
Percentage of loan contract with some form of collateral	96 15	42.40	22.12	13.25	32.85	90 32	48 97	35 56	22 41	52 69	92 98	45 53	25 95	17 02	38 66
Percentage of above with collateral as															
Land	—	13.21	—	—	6.14	—	—	—	7 69	0.78	—	5 64	—	4.17	3 31
Gold	—	13.21	20.00	36.36	14.03	3.57	14.09	25 00	23.08	14.06	1 89	13.71	21 95	29 17	14 05
Utensil	—	—	—	—	—	—	5.63	—	—	3.13	—	3 23	—	—	1 65
Labour	100.00	28.30	—	—	35.09	96.43	69.01	—	—	59 37	98 11	51.61	—	—	47 93
Product	—	45 28	80.00	63 64	44 74	—	11 27	75 00	69 23	22 66	—	25 81	78 05	66 67	33 06
Total	100.00	100.00	100 00	100.00	100.00	100.00	100.00	100.00	100 00	100.00	100 00	100.00	100.00	100.00	100 00
Percentage of loan contracts without collateral	3.85	57.60	77.88	86 75	67.15	9.68	51.03	64.44	77 59	47 31	7 02	54.07	74.05	82 98	61.34

Source : Field survey.

markets is regarding the types of collaterals accepted in them. While land is the most important collateral accepted in the formal credit market, collaterals offered in the informal credit market can be of various types. In fact, non-land collaterals are found to have assumed the dominant position in the informal credit markets of our study areas. Among those again, non-marketable collaterals such as labour and product have been the most important ones. Table 4.12 shows that for all villages considered together, among the collateral-based loans, in about 48 per cent cases, labour services have been offered as the collateral securities by the borrowers. It is also observed that in 33 per cent cases, product (or standing crops) served as the collateral. On the other hand, land is offered as collateral in only 3 per cent cases while gold / utensils served as collateral in about 16 per cent cases. Among various

categories of households, the incidence of non-marketable collaterals being offered for obtaining informal loans have been greater for the poorer households which mostly comprise the class of agricultural labourers and marginal farmers. On the other hand, marketable collaterals such as gold / utensils have been offered relatively more by the better-off farmers in our study areas. Such a tendency is observed both in the advanced and backward villages.

While discussing the collaterals for informal loans, it would be interesting to know which type of lender prefers which type of collateral. The data on the lenders' collateral preference are presented in Table 4.13. The first point to emerge from this table is that collateral security is very essential for the loans obtained from the traders and big cultivators both in advanced and backward

Table 4.13 : Type of Lender and Collateral Preference
All households combined.

Type of Lender	Total No. of loan contracts	Percentage of loan contracts with some form of collateral	Percentage distribution of Collateral-based loans according to types of collateral					
			Land	Gold	Utensil	Labour	Product	Total
1	2	3	4	5	6	7	8	9
				ADVANCED VILLAGES				
Village moneylenders	50	30.00	—	100.00	—	—	—	100.00
Traders	37	97.30	—	2.78	—	—	97.22	100.00
Inputs sellers	173	10 40	—	—	—	11.11	88 89	100.00
Friends and relatives	30	3.33	100.00	—	—	—	—	100 00
Big cultivators	47	93.62	13.64	—	—	86.36	—	100 00
Others	10	0.00	—	—	—	—	—	—
All lenders	347	32.85	6.14	14.03	—	35.09	44 74	100 00
				BACKWARD VILLAGES				
Village moneylenders	69	31.88	—	77.27	18.18	—	4 55	100.00
Traders	14	85.71	—	—	—	—	100.00	100.00
Inputs sellers	71	21.13	—	—	—	—	100.00	100.00
Friends and relatives	38	2.63	100.00	—	—	—	—	100.00
Big cultivators	80	96.25	—	—	—	98 70	1.30	100.00
Others	7	14.29	—	100.00	—	—	—	100.00
All lenders	279	45.88	0.78	14 06	3 13	59 37	22 66	100 00
				ALL VILLAGES				
Village moneylenders	119	31.09	—	86.49	10.81	—	2.70	100.00
Traders	51	94.12	—	2.08	—	—	97.92	100.00
Inputs sellers	244	13.52	—	—	—	6.06	93.94	100.00
Friends and relatives	68	2.94	100.00	—	—	—	—	100.00
Big cultivators	127	95.28	4.96	—	—	94.21	0.83	100.00
Others	17	5.88	—	100.00	—	—	—	100 00
All lenders	626	38.66	3 31	14.05	1 65	47 93	33 06	100.00

Source : Field Survey.

villages of our study areas. Considering all villages together, in about 95 per cent cases, loans have been obtained from these lenders by offering some collateral. Collateral requirement is almost absent for loans obtained from friends and relatives. For all villages, only in about 3 per cent cases loans have been taken from them against some collateral. Collateral requirement is found to be present in nearly 31 per cent cases for the loans taken from village moneylenders while the corresponding figure for the loans taken from inputs sellers is about 14 per cent when considered for all villages together.

It is interesting to note that each type of lender has his own preference for a collateral. As Table 4.13 shows, the traders and big cultivators though insist for some collateral for obtaining loans from them, they would, however, in most cases accept the non-marketable collaterals. It is found that, for all villages, in 98 per cent cases the traders accepted 'product' as collateral while advancing loans. Similarly the big cultivators are found to have accepted another non-marketable collateral namely, labour services while advancing loans. The village moneylenders prefer only the marketable collaterals such as gold/utensils in a majority of cases. Table 4.13 shows that, for all villages, in 97 per cent cases village moneylenders would demand these collaterals when they offer collateral-based loans. The friends and relatives do not demand any collateral in most of the cases; but if they do so, they would accept land as the collateral. In such cases, the borrower would mortgage out a portion of his land to the lender and the later would enjoy the right of cultivation until the loan is repaid. As regards the inputs sellers, the preferred collateral option is

product. Among the cases where inputs sellers insist for collaterals, in nearly 94 per cent of them, they reveal their preference for product.

4.7 Delivery Time and Actual Cost of Borrowing of Formal Loans:

In the context of discussion on formal credit in rural areas, it is often argued that the borrowers are put into many difficulties for getting loans from formal credit agencies. Such difficulties are often translated into delays in disbursement of loans, large number of visits to the bank offices and so on. Some scholars have also argued that owing to these difficulties faced by rural borrowers, they have to incur heavy transaction costs for getting the formal loans. Thus there have been some attempts to estimate the actual cost of borrowing of formal loans. The actual borrowing cost of formal loans has been defined as the sum of interest charges on formal loans and the transaction costs incurred for getting these loans sanctioned.

The data on some of above aspects are presented in Table 4.14. On the question of days taken for getting loans sanctioned from the institutional agencies, it clearly emerges that the rural households in our study areas have to wait for about one and half months on an average before getting the loan in hand. It is also observed that the poorer households have to wait for longer periods for this matter. In both advanced and backward villages, average number of days taken for getting the loan goes down as we move to the higher farm size categories. We have calculated the number of visits to the bank offices per Rs.100.00 of borrowing by the households. This again confirms our

Table 4.14 : Delivery time and Cost of Borrowing of Formal Credit in Surveyed Villages.

Category of Households	Amount of loan per borrowing household	Average days taken for getting the loan	Per Rs. 100.00 of borrowing						
			No. of visits	Hours spent during busy season	Implicit value of labour hour	Amount spent	Transaction cost	Yearly interest charges	Total cost
1	2	3	4	5	6	7	8	9	10
				ADVANCED VILLAGES					
AGL	4167	56.67	0.10	0.08	0.28	0.48	0.76	11.00	11.76
MRF	4669	45.21	0.07	0.17	0.58	0.58	1.16	12.24	13 40
SMF	8644	43.23	0.04	0.10	0.36	0.57	0 93	12 94	13.87
MDF & LF	10533	43.24	0.03	0.09	0.31	0.53	0.84	13.47	14 31
All	6984	44.60	0.05	0.12	0.41	0.56	0.97	12 85	13.82
				BACKWARD VILLAGES					
AGL	4750	60.00	0.07	0.06	0.20	0.32	0.52	12.49	13.01
MRF	3718	47.69	0.09	0.17	0.51	0.29	0.80	11 30	12 10
SMF	3568	42.83	0 08	0.14	0 42	0 21	0 63	12 10	12 73
MDF & LF	7588	41.05	0.05	0.10	0.30	0 20	0 50	11 87	12 37
All	4492	45.12	0.07	0 14	0 41	0 24	0 65	11 71	12 36
				ALL VILLAGES					
AGL	4400	58.00	0.09	0 07	0.25	0 41	0 66	11 56	12 22
MRF	4220	46.32	0.08	0.17	0.55	0.46	1.01	11.85	12.86
SMF	6501	43.06	0.05	0.11	0.37	0.48	0.85	12 75	13 60
MDF & LF	9111	42.08	0.04	0.09	0.30	0.40	0 70	12 88	13 58
All	5845	44.84	0.06	0 13	0.41	0 45	0 86	12 45	13 31

Source : Field survey.

view that the poorer households have to pay greater number of visits for getting their loan sanctioned from institutional agencies.

In order to compute the element of transaction costs associated with the formal loans, we have first calculated the implicit value of labour hours which are spent for this purpose during the busy season. These hours are spent on aspects such as going to the bank branch for submitting the application, making frequent visits to expedite the matter and so on. Labour spent on these matters have been imputed by the going market wage rate. Apart from these information, we also obtained data on amount of money spent for getting the loans sanctioned by the borrowing households. In this context, we considered the travelling expenses incurred for going to the bank offices, bribes offered to the officials at various levels etc. These costs added with the imputed value of labour hour provide the transaction costs associated with formal loans.

Table 4.14 reveals that the element of transaction costs have not been very high in our study areas. In the advanced villages, transaction costs per Rs.100.00 of borrowing turned out to be only 97 paise while the same for the backward villages is found to be only 65 paise. Such a low amount of transaction costs is contrary to what is observed by the researchers in other areas. In our case, low value of transaction costs could be due to the loans being recommended by the village-level panchayats which also help the rural households in getting their loans sanctioned. This apart, a large number of institutional loans in our survey villages are drawn from the co-operative societies which are locally established and also have members in managing committees representing the class of poor households. All these factors

benefit the rural households in getting formal loans at the expense of very low transaction costs. Nevertheless, if we compare the transaction costs for various categories of households, it is observed that it is lower for the better-off households. This becomes clear particularly when we restrict our comparison between various categories of farming households.

Table 4.14 also provides data on total costs on formal credit for different categories of households. As mentioned earlier, these costs are obtained by adding transaction costs with interest charges on formal loans. It is observed that as interest charges on formal loans are institutionally given and hence do not change much in terms of loans taken by various categories of households (except under the subsidised loans given under Integrated Rural Development Programme Schemes etc.), and also that the element of transaction costs is not very high in our study regions, total costs of formal loans do not differ much across various categories of households. However, it needs to be mentioned that considering all villages together, total costs per Rs.100.00 of borrowed amount seem to be slightly higher for the households belonging to higher farm size groups as compared to the lower ones.

4.8 Access to Formal Credit:

We now take up for discussion the issue of access to formal credit by different categories of rural households. In particular, we discuss the factors which determine rural households' access to formal credit. In our understanding, it should be possible to identify a set of factors whose presence would help some households to obtain loans from formal agencies while their absence

would prevent others to obtain the same. Before we describe some of those factors, it would be necessary to clarify how we quantify the access to formal credit for our households.

Access to formal credit : In the present study, this is quantified by constructing a dummy variable which assumes value 'one' if the household in question has taken a formal loan during our study period (July 1991 to June 1992) and value 'zero' otherwise. On this basis, it is found that out of a total of 420 households considered in this study, for 151 households the value of this dummy is 'one' while it is 'zero' for the rest.

Among the factors explaining the households' access to formal credit, we considered the following ones :

Operated area (OPAR): One possible determinant of access to formal credit is the size of farm. In order to understand the impact of this factor, we have considered area operated by our households as an indicator of their farm size. We hypothesise that the relationship between access to formal credit and area operated is positive which implies that the rural credit market is biased in favour of higher farm size categories. This is particularly to be the case when the institutional lending agencies follow an asset-based lending policy for the rural households.

Caste status (CASTE): The caste status of the households may become responsible for determining the availability of formal loans. In the context of our regions, the households belonging to the inferior caste categories were also economically poor. Consequently, they are unlikely to become successful

in obtaining credit from the institutional agencies. In order to capture the impact of caste status, we utilise a dummy variable which assumes value 'one' for the households who are lower castes or tribals and the value of the dummy variable is 'zero' otherwise. We then hypothesise that the relationship between the caste status of individuals and their access to formal credit is negative.

Education (EDN): The educational levels of the households may also determine their access to formal credit. This is because higher level of education leads to awareness regarding the facilities which are available and also the process by which the same can be availed of by an individual. In the market for rural credit, it would not be surprising to note that the incidence of obtaining formal loans is higher in the case of the persons who are better educated. In order to understand the impact of education on access to formal credit, we have considered the number of years of schooling of the heads of the households as indicative of their educational levels. The hypothesis here is that the relationship between education (as measured by number of years of schooling) and access to formal credit is a positive one.

Tenancy (TEN): Tenancy may also appear as an important factor in determining the access to formal credit. The impact of tenancy on the formal credit availability is sought to be understood by considering the percentage of tenanted area for different households. As is well known, in recent years, in West Bengal there have been some programmes for providing institutional credit facilities to the class of tenants particularly, those who have recorded their names under the programme of 'Operation Barga'. It is thus possible that

the relationship between the tenancy variable and access to formal credit turns out to be positive.

Worker-dependent ratio (WORDEP): This variable may also act as a determinant of access to formal credit by the households. If the worker-dependent ratio is higher for some households, it would imply that they have greater number of workers (or earners) in relation to the number of dependents. These households are relatively less compelled to borrow from the institutional agencies. Thus higher value of worker-dependent ratio is likely to be associated with lower access to formal credit and hence the relationship between these two is hypothesised to be a negative one.

Cropping intensity (CRIN): Inter-household variation in access to formal credit may also be explained in terms of variation in their cropping intensities. The households who are practicing more intensive cultivation of their lands would require higher amounts of money both for purchase of various inputs as also for satisfactory and timely completion of various agricultural operations. It may then be possible to find some relationship between the intensity of cultivation and access to formal credit by the households. We hypothesise that the relationship between these two is positive.

Use of modern inputs (MORDIN): Another possible determinant of access to formal credit could be the extent of use of modern inputs by the households. Very often, the cultivating households out of their necessity to apply modern (purchased) inputs, borrow from various lending agencies in the rural areas. The loans which are available to satisfy this requirement is termed as

production loans. It is quite possible that the households utilising the modern inputs have been supported through the production loans schemes of the institutional agencies. The validity or otherwise of this hypothesis can easily be tested by looking at the relationship between the access to formal credit and use of modern inputs among the rural households. In the present study, total expenditures incurred on items such as high-yielding seeds, fertilisers, insecticides and pesticides and irrigation (for all crops during the survey year) have been taken as indicator of use of modern inputs by the households.

Overdues (OVDUE): In the market for credit, the institutional agencies in most cases do not issue fresh loans to the persons who have reported as having past loans outstanding. This implies that overdues in respect of past loans could be a possible determinant of access to formal credit. The relationship between the extent of overdues and access to formal credit is hypothesised to be negative.

Logit Regression Results : In order to explain the access to formal credit by the rural households in terms of the above factors we have run logit regressions[3]. We have employed the method of maximum likelihood to estimate the logit regression models. The significance of various explanatory variables in determining the access to formal credit have been tested by computing the asymptotic t-ratios. We have also reported the value of **Count - R^2** which is indicative of percentage of correct prediction through the logit regression. Furthermore, we have computed the value of log-likelihood ratio

---

[3] In our logit regression models, the dependent variable is actually the log of the **odds ratio**. The odds ratio is defined as pi/(1-pi) where pi is the probability of getting a formal loan by the i^{th} household. The **odds ratio** is thus the odds in favour of getting formal loan by the i^{th} household. See Maddala (1992) for an useful discussion on logit regressions.

test statistic (Chi-square) in order to test the overall significance of our regression.

Before we present the results of logit regressions, it needs to be pointed out that many of the prospective determinants of access to formal credit have displayed strong correlations among themselves. This becomes clear if we look at the correlation matrices given in the appendices (see Appendix Tables A 4.1 through A 4.12). In order to avoid this problem of multicollinearity, we have run several regressions for each category of households by dropping some of the variables which are thought to be multicollinear. Apart from running regressions separately for different categories of households as also for all households, we have run separate regressions for the advanced and backward villages as well. Of course, the regressions for all villages have also been attempted.

The regression results for various categories of households for advanced, backward and all villages combined are presented through Tables 4.15A, 4.15B and 4.15C. As regards the marginal and small farmers in the advanced villages, the variables which are found to have expected signs and also statistically significant are WORDEP, MORDIN and OVDUE. In the same villages, for the category of medium and large farmers, EDN and TEN are the variables which have expected signs and also are statistically significant. When all farmers are considered together, the variables with expected signs and statistical significance are found to be EDN, WORDEP, MORDIN and OVDUE. We have also run regressions for all households together (which include all categories of farmers and agricultural labourers). The regressions

Table 4.15 A : Logit Regression Analysis of Determinants of Access to Formal Credit in Surveyed Villages (Advanced Villages).

Explanatory Variables	Estimated Coefficients									
	Marginal & Small farmers		Medium & Large farmers		All farmers			All households		
	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.3	Eqn.1	Eqn.2	Eqn.3
1	2	3	4	5	6	7	8	9	10	11
Operated area (in acres)	-0.03 (-0.14)	0 04 (0 28)	-0.13 (-0.64)	-0.09 (-0 51)	—	-0 07 (-1 21)	—	0 01 (0 29)	—	-0 02 (-0 44)
Caste status (lower caste and tribals = 1 , Others = 0)	-0 39 (-0 75)	-0.57 (-1.06)	—	-25.38 (-0.01)	-0.37 (-0.73)	—	-0 35 (-0.69)	—	-0 66 *** (-1 44)	-1 23 * (-2 95)
Education (No of years of schooling)	—	0 03 (0.65)	0 21 ** (1 76)	0 21 ** (1 82)	0 04 (1 21)	0 05 *** (1 47)	0 04 (1 14)	0 07 ** (2 29)	0 05 *** (1 54)	—
Percentage of area under tenancy	—	-0.01 (-0 75)	0 07 ** (2 04)	0.07 ** (2.01)	0 01 (0 42)	—	—	0 01 (0 92)	0 01 (0 83)	0 01 (0 38)
Worker-dependent ratio	-3 25 ** (-2.31)	-2.90 ** (-2 05)	0 81 (0 29)	0 63 (0 23)	-1 39 (-1 25)	-1 36 (-1 23)	-1 44 *** (-1 30)	-1 51 *** (-1 46)	-1 29 (-1 21)	-1 42 *** (-1 34)
Cropping intensity	—	0 01 (0 97)	—	0 95 (0 76)	0 01 (1 09)	0 01 (0 77)	0 01 (1 07)	—	0 01 (1 08)	—
Use of modern inputs (in Rs)	0 01 ** (1 84)	—	0 01 (0 07)	—	0 01 ** (1 73)	—	0 01 (1 17)	—	0 01 *** (1 49)	—
Overdues (in Rs)	-0 01 ** (-2 10)	-0 01 * (-2 96)	0 01 (0 90)	0 01 (0 93)	-0 01 ** (-2 08)	-0 01 ** (-2 10)	-0 01 ** (-2 07)	0 01 *** (-1 45)	-0 01 ** (-2 05)	-0 01 *** (-1 37)
Constant	0 47	0 91	-2 49	-4 19	-0 32	0 13	-0 22	-0 54	-0 54	0 33
Count R^2	0 66	0 68	0 70	0 77	0 62	0 64	0 62	0 64	0 65	0 65
Chi-square(X^2)	18.41 *	23 83	12 03 ***	12 92	14 98 **	13 83 **	14 81 **	11 40 *	24 84 *	15 80 *
Degrees of freedom	5	7	6	7	7	5	6	5	7	5
No. of observations	148	148	43	43	191	191	191	220	220	220

Notes : *, ** and *** indicate significance at 1, 5 and 10 percent levels respectively.
Figures in the parentheses represent asymptotic t-ratios.

Table 4.15 B : Logit Regression Analysis of Determinants of Access to Formal Credit in Surveyed Villages (Backward Villages).

Explanatory Variables	Estimated Coefficients									
	Marginal & Small farmers		Medium & Large farmers		All farmers			All households		
	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.3	Eqn.1	Eqn.2	Eqn.3
1	2	3	4	5	6	7	8	9	10	11
Operated area (in acres)	0.41 * (2 37)	0.38 ** (1.65)	0 10 (0 72)	-0.09 (-0 64)	0.13 * (2 47)	0 08 *** (1 60)	—	0 09 ** (1 85)	0 01 (0 25)	—
Caste status (lower caste and tribals = 1 , Others = 0)	-0 77 *** (-1 34)	-1.11 * (-2 37)	2.27 (1 09)	2.16 (1 13)	—	—	-0.78 ** (-1 69)	—	-1 03 * (-2 61)	-0 81 ** (-1 81)
Education (No.of years of schooling)	0 06 (1.01)	—	-0 10 (-0.79)	—	—	0 11 * (2 40)	0 05 (1 10)	0 11 ** (2 31)	—	0 05 (1 05)
Percentage of area under tenancy	0 01 ** (1.70)	0.01 *** (1 47)	0 01 (0 54)	—	0 01 *** (1.32)	0 01 ** (2 03)	0 01 ** (2 10)	0 01 ** (2 19)	0 01 ** (2 07)	0 01 ** (2 26)
Worker-dependent ratio	-0 01 (-0 01)	—	—	—	-0 16 (-0.13)	0 20 (0 16)	—	-0 28 (-0 25)	—	—
Cropping intensity	0 93 ** (2 18)	0 92 ** (1 94)	-1 57 (-0 66)	-5 52 *** (-1.62)	0 82 ** (2.25)	0 69 ** (1 78)	0 53 *** (1 37)	0 82 * (2 76)	0 72 * (2 35)	0 66 ** (2 17)
Use of modern inputs (in Rs)	—	0.01 (0.34)	—	0.01 *** (1 59)	—	—	0 01 *** (1 60)	—	0 01 (1 22)	0 01 ** (1 67)
Overdues (in Rs)	-0 01 *** (-1.63)	-0 01 ** (-1 72)	-0 01 *** (-1 43)	-0.01 *** (-1.58)	-0 01 ** (-1.89)	-0 01 ** (-2 09)	-0 01 ** (-2 19)	-0 01 ** (-2 11)	-0 01 ** (-2 14)	-0 01 ** (-2 21)
Constant	-2.60	-2.15	1 53	6 50	-1 95	-2 35	-1 51	-2 41	-1 49	-1 72
Count R^2	0 74	0.75	0 71	0.81	0 59	0 68	0 71	0 72	0 73	0 76
Chi-square(X^2)	30 94 *	30 04 *	10 01	11.57 **	15 75 *	21 75 *	26 40 *	38 95 *	42 46 *	43 49 *
Degrees of freedom	7	6	6	5	5	6	6	6	6	6
No. of observations	136	136	31	31	167	167	167	200	200	200

Notes : *, ** and *** indicate significance at 1, 5 and 10 percent levels respectively.
Figures in the parentheses represent asymptotic t-ratios.

Table 4.15 C : Logit Regression Analysis of Determinants of Access to Formal Credit in Surveyed Villages (All Villages).

Explanatory Variables	Estimated Coefficients								
	Marginal & Small farmers		Medium & Large farmers		All farmers		All households		
	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.1	Eqn.2	Eqn.3
1	2	3	4	5	6	7	8	9	10
Operated area (in acres)	0.22 ** (2 22)	-0 01 (-0 03)	0 07 (0 92)	0.07 (0 84)	—	0 01 (0 17)	0 09 * (2 73)	0 05 *** (1 38)	—
Caste status (lower caste and tribals = 1 , Others = 0)	—	-0.46 *** (-1 29)	0 38 (0 37)	0 42 (0 40)	-0 54 ** (-1 70)	-0 67 ** (-2 18)	—	—	-0 69 ** (-2 28)
Education (No.of years of schooling)	0 07 * (2 49)	0 04 *** (1 34)	—	0 06 (0 97)	0 05 ** (1 74)	0 04 *** (1 48)	—	0 10 * (3 92)	0 06 ** (2 07)
Percentage of area under tenancy	0 01 (0 60)	— —	0 02 ** (1 91)	0 02 ** (2 08)	0 01 ** (1 76)	0 01 ** (1 66)	0 01 ** (2 18)	0 01 * (2 84)	0 01 * (2 59)
Worker-dependent ratio	-1 54 ** (-1.67)	-1.43 *** (-1.51)	1 27 (0 69)	1 86 (0 95)	—	-0 64 (-0 80)	-1 29 ** (-1 80)	-0 93 (-1 27)	-0 86 (-1 14)
Cropping intensity	0.01 (0.99)	0.01 (1.27)	—	-0 02 (-0.02)	0 01 (1 12)	—	0 01 (0 89)	0 01 (1 02)	0 01 (1 06)
Use of modern inputs (in Rs)	—	0 01 ** (2 16)	0 01 (0 13)	—	0 01 (1 11)	—	—	—	0 01 *** (1 63)
Overdues (in Rs.)	-0 01 * (-3.08)	-0 01 * (-3.34)	-0 01 (-0.72)	-0 01 (-0.83)	-0 01 * (-2.84)	-0 01 ** (-2 23)	-0 01 * (-2 57)	-0 01 * (-2 75)	-0 01 * (-2 80)
Constant	-0 53	-0.15	-1 78	-2 40	-0 67	-0 28	-0 42	-0 49	-0 60
Count R^2	0 65	0 64	0 69	0 70	0 63	0 64	0 64	0 65	0 68
Chi-square(X^2)	32 69 *	40 57 *	6 11	7 05	30.16 *	22 58 *	26 94 *	42 70 *	53 66 *
Degrees of freedom	6	7	6	7	6	6	5	6	7
No. of observations	284	284	74	74	358	358	420	420	420

Notes : *, ** and * indicate significance at 1, 5 and 10 percent levels respectively.**

Figures in the parentheses represent asymptotic t-ratios.

run for all households reveal that in our advanced villages, CASTE, EDN, WORDEP, MORDIN, OVDUE are the most significant variables determining the households' access to formal credit. All these variables have the expected signs too.

In the backward villages (Table 4.15B), for the category of marginal and small farmers, as many as five variables namely, OPAR, CASTE, TEN, CRIN and OVDUE appear to be significant determinants of their access to formal credit. All these variables have the signs according as our hypotheses. If we consider the sample of medium and large farmers separately, the significant determinants of their access to formal credit are found to be CRIN, MORDIN and OVDUE. In the backward villages, the regressions run for the sample of all farmers show that OPAR, CASTE, EDN, TEN, CRIN, MORDIN and OVDUE are the variables which are statistically significant and also have expected signs. A similar picture is obtained if we consider the regressions run for all households in the backward villages.

The logit regression results for all villages together are reported in table 4.15C. It is observed that for the category of marginal and small farmers in these villages the variables such as OPAR, CASTE, EDN, WORDEP, MORDIN and OVDUE are the significant variables in determining access to formal credit for these households. All these variables also have expected signs. For the category of medium and large farmers, however, only one variable namely, TEN appears to be a significant determinant. If we consider all farmers together CASTE, EDN, TEN and OVDUE are the significant variables and all of them have expected signs. Considering the sample of all households (which

includes all categories of farmers and agricultural labourers), it appears that OPAR, CASTE, EDN, TEN, OVDUE, MORDIN and OVDUE are variables which have both statistical significance and expected signs.

It thus appears that in our study areas, the institutional credit agencies have pursued a policy of asset-based lending policy[4] and the households with inferior caste position and low education have been discriminated against in the matter of distribution of formal credit. The households with higher area under tenancy cultivation and those making greater use of modern inputs have, however, greater possibility of obtaining formal loans. On the other hand, the possibility of obtaining formal loan is less for the household with higher value of worker-dependent ratio. Further, existence of past loans as outstanding is found to reduce the possibility of obtaining a formal loan. All these are very much consistent with the hypotheses which we have formulated previously.

4.9 Determinants of Amount of Formal Loan

The above discussion has concentrated solely on explaining the possibility of various categories of rural households getting loans from the institutional agencies. In other words, our purpose was to identify the factors which determine various categories of rural households' access to institutional loans. We thus considered a sample of households which included both the 'recipients' and 'non-recipients' of formal loans. This enabled us to throw some light on the factors which determine rural households' access to formal credit.

---

[4] This becomes particularly clear when we include the class of agricultural labourers in our sample.

It is, however, not clear from our above discussion whether the households receiving formal loans have been treated equally by the formal credit agencies in terms of amounts of loan sanctioned to them. Our discussion in the earlier sections of this chapter revealed that those getting formal loans in our survey areas differ considerably in terms of amounts of loan received by them. It would then be interesting to know the factors determining the amounts of formal loan being received by the rural households In order to identify these factors, we have considered the sample of households who have received formal loans and regressed their loan amounts (in Rs.) on some of the factors which we have considered previously in our logit regression exercises. We have employed here the technique of multiple regression. As before, we have estimated regression equations for different groups of rural households.

The results of our multiple regressions have been presented in Table 4.16. Since the variables which are supposed to be important in explaining variation in the amounts of loan displayed strong correlations amongst themselves (see Appendix Table A 4.13 through A 4.16), we have estimated several equations by dropping some variables from some of the regressions. The regression results show that, for the category of marginal and small farmers, the significant determinants of amounts of formal loan are CASTE, EDN, OPAR, TEN, MORDIN and RATE (rate of interest). While CASTE and TEN have displayed negative relationship with the amount of formal loan, for other variables (EDN, OPAR, MORDIN and RATE) the relationship is positive. In the case of medium and large farmers, the significant variables are TEN and WORDEP only. While the former has negative relationship with the amount of

Table 4.16 : Least Squares Regression Analysis of the Determinants of Amount of Formal Loan All Villages Combined.

Explanatory Variables	Marginal & small farmers				Medium & large farmers		
	Equn. 1	Equn. 2	Equn. 3	Equn. 4	Equn. 1	Equn. 2	Equn. 3
1	2	3	4	5	6	7	8
Operated area (in acres)	—	—	1216.28 * (3.08)	—	317.04 (0 58)	—	—
Caste status (Lower caste and tribals = 1; Others = 0)	-2619.91 ** (-1.97)	-1884.63 *** (-1.39)	—	—	-3379.59 (-0.61)	-427.83 (-0.07)	—
Education (No. of years of schooling)	—	—	198.59 *** (1.53)	142.70 (1.24)	—	—	-315.95 (-0.76)
Percentage of area under tenancy	—	-23.43 *** (-1.33)	-16.58 (-0.93)	-25.50 *** (-1.60)	—	-112.46 ** (-2 05)	-138.80 ** (-2 46)
Worker dependent ratio	3157.17 (0.84)	—	—	—	18784.40 *** (1.49)	22209.20 ** (1.83)	17663.01 *** (1.51)
Cropping intensity	957.36 (0.89)	1109.00 (1.03)	—	—	—	—	3910.19 (0.91)
Use of modern inputs (in Rs.)	—	—	—	0.64 * (6.22)	—	0.15 (0.55)	—
Interest rate (per cent per year)	1046.60 ** (2 01)	1066.35 ** (2.06)	—	618.41 *** (1.37)	964 74 (1 19)	795 70 (1 06)	—
Intercept	-9776.80 (-1.45)	-8830.68 (-1.33)	1522.73 (1.10)	-6000.14 (-1.11)	-11874.91 (-0.86)	-8049.61 (-0.64)	1884 61 (0.22)
R^2	0.05	0.06	0.11	0.30	0.02	0 12	0 14
F Value	2.65 **	2.93 **	5.76 *	13.46 *	1.14	1.78	2 14
No. of Observations	117	117	117	117	29	29	29

Table 4.16 (Continued)

Explanatory Variables	All farmers				All households			
	Equn. 1	Equn. 2	Equn. 3	Equn. 4	Equn. 1	Equn. 2	Equn. 3	Equn. 4
1	9	10	11	12	13	14	15	16
Operated area (in acres)	—	657 89 * (3.40)	653.21 * (3 65)	—	—	—	645 19 * (3 77)	278 34 *** (1 43)
Caste status (Lower caste and tribals = 1, Others = 0)	-3669 92 * (-2 72)	-1420.40 (-0 99)	—	—	-2790 83 ** (-2 06)	—	—	—
Education (No of years of schooling)	—	—	177 42 *** (1 46)	—	—	221 47 ** (1 85)	—	—
Percentage of area under tenancy	—	-35 60 ** (-2 06)	—	-49 60 * (-3 13)	-37 98 ** (-2 18)	—	-42 30 * (-2 59)	—
Worker dependent ratio	7268 02 ** (1 93)	6008.53 ** (1 66)	—	5007 94 *** (1 46)	7289 97 ** (2 00)	—	5528 44 *** (1 57)	—
Cropping intensity	—	1604.84 *** (1 42)	—	—	63 38 (0 07)	—	1232 42 *** (1 43)	—
Use of modern inputs (in Rs)	—	—	—	0 49 * (5 39)	—	—	—	0 39 * (3 73)
Interest rate (per cent per year)	963 00 * (2 43)	837.44 ** (2.21)	842 55 ** (2 17)	731.49 ** (2 01)	919 88 * (2 40)	956 34 * (2 42)	834 54 ** (2 24)	744 50 ** (2 03)
Intercept	-7567 67 (-1 50)	-10255 79 (-1.92)	-7682 14 (-1 63)	-6631 21 (-1.44)	-6418 44 (-1 24)	-7147 55 (-1.50)	-9391 26 (-1 92)	-6527 14 (-1 48)
R^2	0 09	0.17	0 13	0 24	0 10	0 05	0 16	0 19
F Value	5 65 *	5.80 *	8.06 *	12.33 *	4 49 *	5 26 *	6 74 *	12 84 *
No. of Observations	146	146	146	146	151	151	151	151

Note : * , ** and * indicate significance at 1, 5 and 10 per cent levels respectively.**

formal loan, the relationship is positive for the latter. The regression equations estimated for all farmers' sample show interesting results. Here all the variables which are thought to be important as determinants of amount of formal loan have turned out to be statistically significant in one equation or the other. It is observed that the estimated coefficients for the variables CASTE and TEN have negative signs while the signs of estimated coefficients for the variables EDN, OPAR, WORDEP, CRIN, MORDIN and RATE are positive. Table 4.16 also presents the results of regressions for all households' sample. Here again all the explanatory variables have appeared to be statistically significant in one equation or the other. Further, the estimated coefficients have signs similar to those obtained for the all farmers' sample.

It follows from the above discussion that superior caste position, better education and higher land area under operation help rural households to obtain higher amounts of loan from the institutional sources. Similarly, the households having higher cropping intensities and also spending more on modern agricultural inputs obtained higher amounts of loan from institutional agencies. All these findings are consistent with our previous observations as regards the determinants of access to formal loan. However, the relationship between the amount of formal loan and area under tenancy cultivation has appeared to be negative and also significant in most cases. This result implies that the households cultivating higher amounts of tenanted area obtain relatively smaller amounts of loan. The relationship between worker-dependent ratio and amount of formal loan is positive and significant for almost all categories of households which implies that those with greater

number of workers in relation to the number of dependents obtain higher amounts of loan from the institutional sources.[5]

4.10 The Credit Gap :

The purpose of this section is to estimate the credit gap that might have existed for different categories of farming households in our study areas. In this study, we view the credit gap as the proportion of shortfall in credit availability (from institutional sources) to credit required by the farming households. The shortfall in credit availability is measured as the difference between formal credit available per acre and formal credit required per acre. In order to calculate the latter, we first compute total income for different farming categories which is the sum of gross income from farming and various non-farm activities. We then compute per acre values of the HYV input costs and also the paid-out costs. The HYV input costs include only the costs for material inputs and irrigation. The concept of paid-out cost is far more comprehensive in that it includes costs owing to material inputs, bullock labour (owned and hired), irrigation, hiring of implements and machinery and hired human labour. We provide two different estimates of shortfall in credit

---

[5] Our observation on the roles of TEN and WORDEP variables in determining the rural households' access to formal credit are different from their roles in determining the amounts of formal loan. While in the former, the relationships were found to be negative, in the latter, the relationships are found to be positive. All these apparently provide contradictory results. However, the fact remains that while the households with tenanted area enjoy greater probability of receiving formal loans (as being part of government policy to provide loan support to the tenant households which have recorded their names under "Operation Barga" programme), it does not necessarily mean that they will also benefit in terms of higher amounts of loan being sanctioned to them. Similarly, although the probability of availing formal loans is lower for the households with greater number of workers in relation to number of dependents, in the event of obtaining larger quantities of formal loans, they may have to be endowed with larger number of workers. The lending institutions may also screen the loan applications in such a way that larger loan amounts are sanctioned to those families which have higher number of earning members. By following this strategy the lending institutions can reduce the possibility of default of loans involving larger amounts.

availability on the basis of these two cost concepts. In both cases, we assume that the marginal and small farmers would require formal credit to the extent of 50 per cent of the costs (HYV inputs cost/paid-out cost) while the medium and large farmers would remain satisfied if they obtain formal credit to the extent of 25 per cent of their cost of production[6]. Having obtained information on per acre amount for formal credit required by different categories of farmers in this manner, we take the difference between the same and formal credit obtained per acre in order to know the shortfall in credit availability for different categories. This shortfall in credit availability in relation to credit required provided some measure of credit gap for the farming households.

Our results relating to the estimate of credit gap are presented in Table 4.17. It is observed that when we compute credit requirement based on the concept of HYV input cost, the credit gap appears to the distinctly smaller as compared to the case when we compute the same on the basis of the concept of paid-out cost. It also appears that the credit gap is higher in the advanced villages as compared to backward villages. In the former, considering all households together, 37 per cent of total credit requirement remains unfulfilled while in the backward villages the corresponding percentage is only 19 per cent. These results are obtained when we calculate credit gap on the basis of HYV input cost concept. Among various categories of households in advanced villages, credit gap is higher for the marginal and small farmers as compared to medium and large farmers. In the backward villages also the credit gap is much higher for the categories of marginal and small farmers (according to the

[6] This assumption seems reasonable in so far as the income levels of medium and large households are higher by two times or more as compared to those for marginal and small farmers. See col.2 in Table 4.17.

Table 4.17 : Estimates of Credit Gap for Different Categories of Households in Surveyed Villages.

Category of Households	Total Income (In Rs.)		Per Acre Value (In Rs.) of		Formal Credit available per acre (In Rs.)	Formal Credit required per acre (In Rs.)		Credit gap (In percentage)	
	Per Household	Per Worker	HYV input cost	Paid-out cost		R_1	R_2	M_1	M_2
1	2	3	4	5	6	7	8	9	10
				ADVANCED VILLAGES					
MRF	16419	9559	2104	3324	708	1052	1662	-32.70	-57 40
SMF	25564	9881	1929	3310	524	964	1655	-45 64	-68.34
MDF & LF	48777	17192	1676	3201	308	419	800	-26.49	-61 50
All	24607	11373	1859	3268	469	748	1288	-37.30	-63 59
				BACKWARD VILLAGES					
MRF	11653	6001	2206	2452	803	1103	1226	-27.20	-34.50
SMF	15047	6994	1343	2601	409	671	1300	-39.05	-68.54
MDF & LF	29094	9203	937	2211	302	234	553	29.06	-45 39
All	14195	6665	1180	2352	442	545	896	-18 90	-50.67
				ALL VILLAGES					
MRF	13808	7503	2126	2988	745	1063	1494	-29 92	-50 13
SMF	21949	9005	1762	3092	489	881	1546	-44.49	-68 37
MDF & LF	40532	13633	1361	2783	306	340	695	-10.00	-55.97
All	19649	9149	1613	2936	459	674	1146	-31.90	-59.95

Note : R_1 & R_2 indicate formal credit required per acre (in Rs.) computed on the basis of HYV input costs and paid-out costs respectively.
M_1 & M_2 indicate measures of credit gap based on the above two cost concepts.

Source : Field survey.

HYV input cost concept). The credit gap for the medium and large farmers in these villages is not only absent but they are found to have obtained more credit than what is required by them. Considering all villages together, we have a picture which shows that the credit gap is the highest for the category of small farmers which is followed by marginal farmers and medium and large farmers (according to the concept of HYV input cost). The broad conclusion that emerges from this discussion is that the distribution of formal credit between different categories of farmers has not been consistent with their requirements for credit in our surveyed villages. Consequently, while the marginal and small farmers have suffered from clear shortage of credit, the medium and large farmers have been benefited by surplus credit advanced to them by the institutional agencies in some areas.

4.11 Default of Formal Loan

We also have data on the percentage of defaulters on formal loan and also on the amount defaulted by them[7]. Table 4.18 shows that in the advanced villages of our study, the percentage of defaulters has been the highest among the small farmers while in the backward villages it is the highest among the marginal farmers. It is, however to be noted that the percentage of defaulters of formal loans has not been insignificant even for the category of medium and large farmers. Furthermore, if we consider average amount of overdue per defaulter, it is observed that the same has been much higher for the households belonging to higher farm size categories as compared to those for

[7] These data relate to the survey year chosen for this study (i.e., July 1991 to June 1992). In other words, our data here provide the amount of loan default by the households as on 30.6 92. These loans were taken during one year preceeding this date and were supposed to be repaid on or before this date.

Table 4.18 : Percentage of Defaulters and Overdues on Formal Credit in Surveyed Villages.

Category of households	Defaulters as percent of total borrowers	Average amount of overdue per defaulter (in Rs.)	Overdues as percent of total credit borrowed by the group
1	2	3	4
	ADVANCED VILLAGES		
AGL	33.33	1570	12 56
MRF	34 21	3137	22 98
SMF	46 15	8653	46 20
MDF & LF	33 33	14200	44 94
All	37 80	7187	37 65
	BACKWARD VILLAGES		
AGL	—	—	—
MRF	55 88	2142	32.20
SMF	45.00	2933	38.94
MDF & LF	42.86	4075	23.02
All	48.57	2693	29.54
	ALL VILLAGES		
AGL	20.00	1570	7 14
MRF	44.44	2546	26.82
SMF	45.65	6201	44 52
MDF & LF	37.93	8677	36.12
All	42.11	4824	34.98

Source : Field survey.

lower categories. This is true both for the advanced as well as backward villages. Table 4.18 also provides data on overdues as percentage of total credit borrowed by each group of households. These data show that the percentage of overdues to total credit has been extremely low for the category of agricultural labourers (only 7.14 per cent when considered for all villages). Overdues as percentage of total credit has been the highest for the small farmers when considered for all villages (nearly 45 per cent) which is followed

by medium and large farmers (36 per cent) and marginal farmers (27 per cent). It thus appears that while nearly two-fifth of all categories of farmers have turned out to be the defaulters of formal loan during the survey year, both the amount of overdues per defaulter as well as the percentage of overdues to total credit have been relatively smaller for the households belonging to lower farm size groups (particularly, agricultural labourers and marginal farmers).

CHAPTER V

INTERLINKED TRANSACTIONS IN RURAL CREDIT MARKETS

In recent years, there have been considerable theoretical work on the issue of interlinked transactions in agrarian credit markets. An interlinked transaction is one in which the transacting parties trade in at least two markets on the condition that the terms of all trades between them are jointly determined (Bardhan, 1980; Bell and Srinivasan, 1989). As regards the effects of interlinkage, two contrasting opinions have surfaced in the literature. One argument says that the interlinkages have been utilised as an exploitative device by the stronger party to extract surplus out of the weaker party (Bhaduri, 1973, 1983, 1986; Bharadwaj, 1974). The other view, while rejecting interlinking being necessarily exploitative, explain its rationale in terms of information asymmetry and uncertainty (Braverman and Stiglitz, 1982; Mitra, 1983). According to some scholars, it also acts as a screening device in the selection of customers (see Braverman and Guasch, 1984) and also utilised as enhanced enforcement device for execution of contracts and reduce transaction costs in the recruitment of wage- labourers (Bardhan, 1984). The theoretical debate which continued on the issue of rationale behind interlinked transaction has remained by and large inconclusive as yet. Furthermore, at the empirical level, there have not been much attempt even to understand the incidence and types of interlinked contracts involving different parties.[1]

---

[1] Some recent exceptions in this context have been Bell and Srinivasan (1989), Sarap (1987, 1991), Reddy (1992), Chadha and Bhaumik (1992), Bhaumik (1993) and Banik (1993).

Moreover, very few studies have attempted to explain the characteristics of the households which are involved in interlinked transactions in rural areas.[2] In the present chapter, we address ourselves to some of these issues with reference to rural West Bengal. This chapter has two sections while section one discusses the issue of extent and types of interlinked credit transactions in rural West Bengal, section two explains the characteristics of the households which are involved in interlinked contracts in our survey areas.

5.1 Extent and Types of Interlinked Transactions:

In Table 5.1, we present data collected from eight villages of West Bengal on the extent and types of interlinked transactions. These data are presented for various categories of rural households and also for the advanced and backward villages. As regards the incidence of interlinked transactions, it is clearly observed that interlinkages have been very widespread in our survey areas. Considering all villages together, in nearly 66 per cent cases, the credit contracts are found to have been interlocked with some other contracts. The incidence of interlinkages have been much higher in the advanced villages as compared to the backward villages.[3] While in the former, in 73 per cent cases, the credit contracts were linked with other contracts, in the case of backward villages, the corresponding figure is approximately 57 per cent.

Table 5.1 also presents data on the distribution of interlinked households into various farm size categories. It is clearly observed that both in the advanced and backward areas, large number of households with interlinked credit

---

2 An exception here has been Sarap (1991).

3 This is in conformity with what is observed by Bell and Srinivasan (1989) but it contradicts the observation of Reddy (1992).

Table 5.1 : Extent of Interlinked Contracts Among the Borrowing Households in Surveyed Villages.

Category of Households	No. of Households				No. of credit contracts				Loan amount (in lakhs)			
	Linked		Non-linked		Linked		Non-linked		Linked		Non-linked	
1	2		3		4		5		6		7	
ADVANCED VILLAGES												
AGL	23	(100 00)	—		25	(96 15)	1	(3 85)	0.35	(97 22)	0 01	(2 78)
	(25 56)				(9 80)		(1.09)		(6.29)		(0 18)	
MRF	40	(57 97)	29	(42.03)	85	(68.00)	40	(32 00)	1 70	(46 58)	1 95	(53 42)
	(44 44)		(30.21)		(33.33)		(43 48)		(30 52)		(34 63)	
SMF	19	(32 76)	39	(67 24)	82	(72 57)	31	(27 43)	1 86	(47 33)	2 07	(52 67)
	(21 11)		(40 62)		(32 16)		(33 69)		(33 39)		(36 77)	
MDF & LF	8	(22 22)	28	(77 78)	63	(75 90)	20	(24 10)	1 66	(50 92)	1 60	(49 08)
	(8 89)		(29 17)		(24.71)		(21 74)		(29.80)		(28 42)	
ALL	90	(48.39)	96	(51 61)	255	(73 49)	92	(26 51)	5 57	(49 73)	5 63	(50 27)
	(100 00)		(100 00)		(100 00)		(100 00)		(100 00)		(100 00)	
BACKWARD VILLAGES												
AGL	25	(96 15)	1	(3 85)	27	(87 10)	4	(12 90)	0 19	(95 00)	0 01	(5 00)
	(24 51)		(1 41)		(17.09)		(3 31)		(9 60)		(0 21)	
MRF	57	(62 64)	34	(37.36)	73	(50 34)	72	(49 66)	0 58	(16 43)	2 95	(83 57)
	(55.88)		(47 89)		(46 20)		(59 50)		(29 29)		(62 77)	
SMF	11	(40 74)	16	(59.26)	23	(51 11)	22	(48 89)	0 30	(32 97)	0 61	(67 03)
	(10 79)		(22 53)		(14 56)		(18 18)		(15 15)		(12 98)	
MDF & LF	9	(31 03)	20	(68 97)	35	(60 34)	23	(39 66)	0 91	(44 61)	1 13	(55 39)
	(8 82)		(28 17)		(22.15)		(19 01)		(45 96)		(24 04)	
ALL	102	(58 96)	71	(41 04)	158	(56 63)	121	(43 37)	1 98	(29 49)	4 70	(70 51)
	(100 00)		(100 00)		(100 00)		(100 00)		(100 00)		(100 00)	
ALL VILLAGES												
AGL	48	(97 96)	1	(2 04)	52	(91 23)	5	(8 77)	0 54	(96 43)	0 02	(3 57)
	(25 00)		(0 60)		(12 59)		(2 35)		(7 15)		(0 19)	
MRF	97	(60 63)	63	(39 37)	158	(58 52)	112	(41 48)	2 28	(31 75)	4 90	(68 25)
	(50 52)		(37.73)		(38 26)		(52 58)		(30 20)		(47 44)	
SMF	30	(35.29)	55	(64 71)	105	(66 46)	53	(33 54)	2 16	(44 63)	2 68	(55 37)
	(15 63)		(32 93)		(25 42)		(24 88)		(28 61)		(25 94)	
MDF & LF	17	(26 15)	48	(73 85)	98	(69 50)	43	(30 50)	2 57	(48 49)	2 73	(51 51)
	(8 85)		(28 74)		(23 73)		(20 19)		(34 04)		(26 43)	
ALL	192	(53 48)	167	(46 52)	413	(65 97)	213	(34 03)	7 55	(42 23)	10 33	(57 77)
	(100 00)		(100 00)		(100 00)		(100 00)		(100 00)		(100 00)	

Note : Figures in the brakets alongside are per cent of row totals while those in brakets underneath are per cent of column totals.

Source : Field survey.

contracts belong to the categories of marginal farmers and agricultural labourers. Considering all villages together, nearly 51 per cent of them belonged to the category of agricultural labourers. The share of small farmers in this respect is nearly 16 per cent and nearly 9 per cent of linked households belonged to the categories of medium and large farmers It clearly emerges that, in our survey villages, the possibility of marginal farmers and agricultural labourers getting involved in interlinked credit contracts is much higher as compared to other categories of households. The above conclusion remains unaffected even when we consider percentages of linked and non-linked households under each farm size group. Table 5.1 shows that, when considered for all villages, among the agricultural labourers, nearly 98 per cent of them are identified as linked households. Among the marginal farmers, nearly 61 per cent of them represented the category of linked households while the corresponding percentages for the groups of small farmers and medium and large farmers are 35 and 26 respectively.

Table 5.1 also presents data on the distribution of linked and non-linked credit contracts into various farm size groups. It is observed that for all villages combined, 38 per cent of linked credit contracts were those which involved the class of marginal farmers while 25 per cent of them were from the small farmers and 24 per cent from the medium and large farmers. Of the total linked credit contracts, only about 13 per cent belonged to the category of agricultural labourers. Further, if we look at the distribution of linked and non-linked credit contracts separately for each category of farming households, it clearly emerges that the percentage of linked credit contracts to total credit

contracts is the highest for the category of medium and large farmers both in the advanced and backward villages. The category of small farmers rank second in this respect which is followed by the category of marginal farmers. For the class of agricultural labourers, however, the percentage of linked contracts is very high which exceeds even 91 per cent when considered for all villages together.

The broad conclusion that emerges is that although the households belonging to the lower farm size groups (particularly the marginal farmers) and also the class of agricultural labourers displayed a higher tendency to enter into interlinked credit contracts in our surveyed areas, the incidence of interlined contracts have not been insignificant for higher categories of farming households. In fact, among different categories of farmers, the percentage of linked credit contracts to total contracts has been higher for the households belonging to the higher farm size groups. It is observed that even the medium and large farmers in our surveyed villages have entered into a substantial number of linked credit contracts. The significant participation of these farmers in interlinked credit arrangements gets further substantiated if we consider the distribution of loan amount under linked and non-linked contracts for different farm size groups (Table 5.1).

Having discussed the extent of interlinked credit contracts, we now look at the types of those contracts in our surveyed villages. In this context we also try to find out which category of households prefer what type of interlinked contracts. On the question of the types of interlinkages, Table 5.2 shows that as many as

Table 5.2 : Types of Interlinkages in Informal Credit Market in Surveyed Villages.

Category of Households	Percentage distribution of linked credit contracts as																	
	Cash-labour		Cash-land tenancy		Cash-land		Input-cash		Input-product		Cash-product		Product-labour		Total	
1	2		3		4		5		6		7		8		9	
							ADVANCED VILLAGES									
AGL	100.00	(25)	—		—		—		—		—		—		100.00	(25)
MRF	18.82	(16)	1.18	(1)	8.24	(7)	44.70	(38)	10.59	(9)	16.47	(14)	—		100.00	(85)
SMF	—		1.22	(1)	—		74.39	(61)	13.41	(11)	10 98	(9)	—		100.00	(82)
MDF & LF	—		—		—		88.89	(56)	7.94	(5)	3 17	(2)	—		100.00	(63)
ALL	16.08	(41)	0.78	(2)	2.75	(7)	60.79	(155)	9.80	(25)	9.80	(25)	—		100.00	(255)
							BACKWARD VILLAGES									
AGL	100.00	(27)	—		—		—		—		—		—		100.00	(27)
MRF	61.64	(45)	1.37	(1)	—		20.55	(15)	9.59	(7)	1.37	(1)	5 48	(4)	100 00	(73)
SMF	—		4.35	(1)	—		52.17	(12)	17.39	(4)	26.09	(6)	—		100.00	(23)
MDF & LF	—		2.86	(1)	2.86	(1)	68.57	(24)	14.28	(5)	11.43	(4)	—		100.00	(35)
ALL	45.57	(72)	1.90	(3)	0.63	(1)	32.28	(51)	10.13	(16)	6.96	(11)	2.53	(4)	100 00	(158)
							ALL VILLAGES									
AGL	100.00	(52)	—		—		—		—		—		—		100.00	(52)
MRF	38.61	(61)	1.27	(2)	4.43	(7)	33.54	(53)	10.13	(16)	9.49	(15)	2.53	(4)	100.00	(158)
SMF	—		1.90	(2)	—		69.52	(73)	14.29	(15)	14.29	(15)	—		100.00	(105)
MDF & LF	—		1.02	(1)	1.02	(1)	81.63	(80)	10.20	(10)	6.12	(6)	—		100.00	(98)
ALL	27.36	(113)	1.21	(5)	1.94	(8)	49.88	(206)	9 92	(41)	8.72	(36)	0.97	(4)	100.00	(413)

Note : Figures in the parentheses indicate number of loan cases.

Source : Field survey.

seven different types of interlinked contracts prevailed in our survey areas which are as follows:

(i) Input-Cash : In our survey areas, this is found to be the most dominant form of interlinkage. Under this system, the borrower is supplied with some inputs by the lender and the former is liable to repay the later in cash after harvesting his crop. Thus loans in this system are advanced not in cash but in terms of inputs (seeds, fertilisers, insecticides and pesticides etc.) although their repayments are done only in terms of cash. Our enquiry revealed that, in most of these cases, the lenders do not charge any interest explicitly although these might involve some implicit interest charges on the borrowers. Table 5.2 shows that these interlinkages have been relatively more widespread in the advanced villages and also among the households from the higher farm size groups. It appears that in the advanced villages, the share of 'input-cash' interlinkages (among all interlinked contracts) has been 61 per cent while the corresponding share in the backward villages is 32 per cent. For all villages taken together, out of a total of 413 cases of interlinked credit contracts, in 206 of them (50 per cent), this has been the form of interlinkage. It is also observed that the incidence of 'input-cash' interlinkages has been distinctly higher for the households in higher farm size groups both in the advanced as well as backward areas. For all villages combined, in about 34 per cent cases, the marginal farmers preferred interlinked contracts of 'input-cash' type. The corresponding figure for small farmers is 70 per cent while the same for medium and large farmers is 82 per cent.

(ii) Cash-Labour : This has been the second most important form of interlinkage in our study areas. Under this arrangement, the lenders offer cash loans which along with interest charges (if any) are to be repaid by the borrowers in terms of labour services only. Between different villages, this interlinkage has been relatively stronger in the backward ones. Table 5.2 shows that while in 16 per cent cases this has been the form of interlinkage in the advanced villages, the corresponding figure for backward villages is found to be nearly 46 per cent. For all villages combined, in about 27 per cent cases, interlinkages have been of 'cash-labour' type. It is also to be noted that among various groups of households, 'cash-labour' interlinkages have been operative only in the case of agricultural labourers and marginal farmers. Again, between these two groups, the agricultural labourers are found to have been engaged in 'cash-labour' interlinkages only. This implies that the lenders preferred to engage the agricultural labourers and marginal farmers in this interlinkage as part of their labour-tying device. Since most of their lenders are big cultivators (for whom man-land ratio is low), they can ensure labour availability during peak periods by locking poor families (agricultural labourers and marginal farmers) under these contracts. From the viewpoint of the agricultural labourers and marginal farmers, constrained by inadequate financial means to repay the loan in cash, they are compelled to offer labour services for repaying the loans. This explains predominance of 'cash-labour' interlinkages among the agricultural labourers and marginal farmers.

(iii) Input- Product : In about one-tenth of the cases of interlinked contracts in our surveyed villages, this has been the form of interlinkage. In this system,

the lender is the input seller-cum-trader who offers loan in terms of inputs supply and allows repayment by the borrower in terms of product after the harvest. The lender may or may not charge any explicit interest on the loan and in many cases, the product obtained by him may be somewhat under-valued. The borrowers for these contracts are drawn from all categories of farmers although small farmers are found to have been preferred relatively more for this purpose.

(iv) Cash-Product : In about 9 per cent cases, this has been the form of interlinkage in our sampled villages. This form of interlinkage has been higher in the advanced villages (nearly 10 per cent) as compared to backward villages (nearly 7 per cent). Between different groups of farmers, the lenders preferred small and marginal farmers relatively more for offering cash credit under these contracts. Since the lenders here are pure-traders, they would clearly allow repayment of loans in terms of products only.

(v) Cash-land tenancy : There are very few instances of interlinkages of this type. Only in five out of a total of 413 cases, this has been the form of interlinkage in our study areas. As is well known, under this system of interlinkage, the borrower obtains both cash-credit and land for tenancy cultivation from the same person (lender). The fact that the incidence of this type of interlinkage has been low in our study areas clearly falsify the interlinkage theory developed by Bhaduri (1973, 1983).

(vi) Cash-land : Table 5.2 shows that in only 8 cases, out of 413 cases in total, this has been the form of interlinkage. The households who were

engaged in this type of interlinkage are drawn mostly from the category of marginal farmers. These farmers obtain cash credit from the lenders and in return mortgage out a portion of their cultivable land to them. Until the loan is repaid, the lender enjoys the right of cultivation on the mortgaged land. Repayment of loan by the borrower in this case is done in terms of cash only.

(vii) Product-labour : In this case, the lender supplies some quantity of product (say paddy) to the borrower with the condition that he would repay the borrowed amount by providing labour services to the lender. Expectedly, this interlinkage involves two parties namely, the marginal farmers (borrowers) and big cultivators (lenders). However, we do not have many instances of interlinkages of this form in our study villages. Only in 4 out of a total of 413 cases, we found trace of this form of interlinkage.

5.2 Characteristics of Households Participating in Linked Contracts

In this section, we seek to find out the characteristics of the households which are participating in linked credit contracts. As noted previously, not all the borrowing households in our survey areas engage themselves in linked credit contracts. In that event, it would be interesting to know the factors which encourage some borrowing households to prefer linked credit contracts while the others being discouraged from them. In other words, our objective is to find out the determinants of interlinkage in our study areas. For this purpose, we employ the logit regression technique where the following variables have been considered :

Dependent Variable: In our logit regression model, the dependent variable is a binary variable which takes value '1' for the household which has entered into at least one linked contract while borrowing and the value of the variable is '0' otherwise (i.e., the household does not have any linked credit contract).

INDEPENDENT VARIABLES :

Operational Area (OPAR) : One possible determinant of linkage could be the operated area available to a household. Area operated by a household is indicative of his social and economic status which determine the availability of credit in the formal market. Thus it may be argued that the households with higher operated area would receive better credit support in the formal market. Further, while borrowing in the informal market, by virtue of their superior economic and social position, they can alter the terms and conditions of loans in their favour. It may then be hypothesised that linkage will be much higher among the landless and households with small operated area. In other words, linkage is supposed to be negatively related to the size of operational holding.

Caste Status (CASTE) : The Households with inferior castes (SC/ST) are likely to be in a disadvantageous position as far as their access to various economic opportunities is concerned. In that situation, they may have to raise credit on more unfavourable terms in the informal market as compared to households with superior castes. Thus, the possibility of linkage appearing for the inferior caste households becomes higher. We, therefore, hypothesise that the relationship between linkage and CASTE is positive. For our regression

exercise, CASTE is represented by a binary variable which has value '1', if the household belongs to SC/ST, but its value is '0' otherwise.

Education (EDN) : Formal education of the household enhances the possibility of obtaining quick information on many aspects including information relating to availability of credit and its terms and conditions both in the formal and informal segments. Educated households can also earn better through their employment outside village. These households are then unlikely to be under great compulsion to enter into linked credit contracts. We thus expect this variable to be negatively related with linkage. Education here is measured by the number of years of schooling by the head of the household.

Percentage of Area under Tenancy (TEN) : Tenanted households are likely to be the poorer ones with small cultivable area under their ownership. These households may then be forced in the informal credit market even under unfavourable terms to meet their production and consumption requirements.[4] It is quite possible that these households do not hesitate to borrow when the credit contract is linked with some other contracts. We thus expect that the relationship between TEN (as measured by the percentage of tenanted area to operated area) and linkage is positive.

Proportion of Male Workers to Total Workers (MWOR) : The probability of getting employment by the male workers is higher possibly because they can

---

[4] It is to be noted that the tenanted households while borrowing in the informal credit market, may not necessarily borrow from their own landlords. In fact, in our survey areas, they are found to have borrowed from non-landlord sources in most cases. This behaviour of the households contradicts the position taken by Bhaduri (1973, 1983) and supports the observations made by Khasnobis and Chakraborty (1982), Chattapadhyay and Ghosh (1983), Taslim (1988) and Bhaumik (1993).

be absorbed for varied types of work. This has been an empirically established fact too in the context of rural India.[5] The households with higher ratio of male workers to total workers are likely to have higher incomes and hence they are unlikely to borrow under onerous terms and conditions It then may be hypothesised that the relationship between MWOR and linkage is negative.

Value of Non-land Income Generating Assets (NLIGA): The households who have some non-land income generating assets such as livestock, poultry or goats may have some liquid income almost throughout the year. These households are, therefore, less compelled to borrow under unsuitable terms and conditions. It is then expected that the relationship between NLIGA and linkage is negative.

Ratio of Non-farm to Farm Income (NFINC): Rural households who have higher ratio of non-farm income to farm income are likely to have higher gross family income as compared to those who are dependent relatively more on farm incomes. These households are unlikely to enter into linked credit contracts to any great extent. We hypothesise that the relationship between NFINC and linkage is negative.

THE REGRESSION RESULTS

The logit regression results obtained for different groups of households as also for different areas (advanced, backward and all) are presented in Tables 5.3A through 5.3C. For the category of marginal and small farmers in the advanced

---

[5] Several studies have shown that the wage rate and number of days of employment for male workers are higher than those of female workers. See, for example, Visaria and Basant (1994); Visaria (1997); Singh (1996).

Table 5.3 A : Logit Regression analysis of the Characteristics of Linked Borrowers in Surveyed Villages Advanced Villages.

Explanatory variables	Estimated Coefficients				
	Marginal & Small farmers	Medium & Large farmers	All Farmers	All households	
	Eqn.1	Eqn.1	Eqn.1	Eqn.1	Eqn.2
(1)	(2)	(3)	(4)	(5)	(6)
Operated area (in acres)	-0 39 ** (-2 12)	-0 87 *** (-1 32)	-0 25 * (-2 53)	—	-0 03 * (-3 63)
Caste Status (lower caste and tribals=1, Others=0)	-0.66 (-1 16)	—	-0 72 *** (-1 30)	0 73 ** (1 70)	—
Education (no. of years of schooling)	0 03 (0 59)	-0 45 ** (-2 15)	-0 02 (-0 62)	—	-0 05 *** (-1 30)
Percentage of area under tenancy	0.02 * (3.11)	0.01 *** (1.49)	0 02 * (3 15)	0 01 * (2 90)	0 01 ** (2 30)
Proportion of male workers to total workers	-130.67 (-0 01)	—	-128 58 (-0.01)	-119 53 (-0 01)	-121 81 (-0 01)
Value of non-land income generating assets (in Rs.)	-0.01 (-0.35)	0 01 ** (2.30)	0.01 (0.27)	-0 01 *** (-1 36)	—
Ratio of non-farm to farm income	-0 16 *** (-1 32)	0.73 (1 15)	-0 10 (-1 05)	-0 15 *** (-1 47)	-0 15 *** (-1 39)
Constant	131 00	0 65	128 87	119 20	122 71
Count R^2	0 69	0 89	0 68	0 74	0 75
Chi-square (X^2)	27 42 *	20 03 *	35 30 *	40 16 *	56 88 *
Degree of freedom	7	5	7	5	5
No. of observations	127	36	163	186	186

Notes : *, **, and *** indicate significance at 1 , 5 and 10 per cent levels respectively.
Figures in the parentheses represent asymptotic t-ratios.

Table 5.3 B : Logit Regression analysis of the Characteristics of Linked Borrowers in Surveyed Villages Backward Villages.

Explanatory variables	Estimated Coefficients						
	Marginal & Small farmers		Medium & Large farmers	All farmers		All households	
	Eqn.1	Eqn.2	Eqn.1	Eqn.1	Eqn.2	Eqn.1	Eqn.2
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Operated area (in acres)	-0 30 *** (-1.56)	—	0 11 (0 60)		-0 15 *** (-1 63)	—	-0 14 ** (-2 15)
Caste Status (lower caste and tribals=1; Others=0)	—	0 64 *** (1 36)	1.83 (1.10)	0.63 *** (1 47)	0 15 (0 31)	—	0 75 ** (1 78)
Education (no. of years of schooling)	-0 03 (-0 57)	—	-0.38 ** (-1 98)	—	-0 09 *** (-1 58)	-0 15 * (-2 95)	—
Percentage of area under tenancy	-0 01 (-0 12)	-0 01 (-0 43)	-0 03 *** (-1 46)	-0 01 (-0 76)	-0 01 (-1 08)	-0 01 ** (-1 82)	-0 01 *** (-1 40)
Proportion of male workers to total workers	-3.74 ** (-2.10)	-4 11 ** (-2 30)	—	-4.30 * (-2 45)	-4 08 ** (-2 23)	-4 78 * (-2 68)	-4 31 * (-2 49)
Value of non-land income generating assets (in Rs)	—	0 01 (0 45)	-0 01 (-0.63)	-0 01 (-0 84)	0 01 (0 73)	-0 01 (-1 10)	—
Ratio of non-farm to farm income	-0 36 * (-2 61)	-0 35 * (-2 64)	-0 84 (-0 76)	-0 37 * (-2 71)	-0 36 * (-2 59)	-0 35 * (-2 59)	-0 42 * (-3 10)
Constant	4 84	4 18	1 91	4 51	5 04	6 21	4 96
Count R^2	0 73	0 76	0 76	0 73	0 74	0 76	0 79
Chi-square	33 35 *	30 38 *	9 47	36 05 *	42 35 *	60 14 *	59 88 *
Degrees of freedom	5	5	6	5	7	5	5
No. of observations	118	118	29	147	147	173	173

Notes : *, **, and *** indicate significance at 1 , 5 and 10 per cent levels respectively.
Figures in the parentheses represent asymptotic t-ratios.

Table 5.3 C : Logit Regression analysis of the Characteristics of Linked Borrowers in Surveyed Villages
All Villages

Explanatory variables	Estimated Coefficients					
	Marginal & Small farmers	Medium & large farmers	All farmers		All households	
	Eqn.1	Eqn.1	Eqn.1	Eqn.2	Eqn.1	Eqn.2
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Operated area (in acres)	-0.35 * (-2.76)	0 06 (0 55)	-0 17 * (-3 20)	-0 16 * (-2.80)	—	-0 20 * (-3 87)
Caste Status (lower caste and tribals=1, Others=0)	—	1 60 (1 28)	-0 03 (-0 12)	-0 25 (-0 75)	0 71 ** (2 56)	—
Education (no of years of schooling)	0 01 (0 24)	-0 37 * (-3 10)	—	-0 06 ** (-1 77)	—	-0 08 * (-2 75)
Percentage of area under tenancy	0 01 * (2.55)	-0 01 (-0 56)	0 01 * (2 50)	0 01 ** (2 02)	0 01 *** (1 57)	0 01 (0 96)
Proportion of male workers to total workers	-5 85 * (-2 63)	—	-6 17 * (-2 87)	-5 87 * (-2 81)	-7 05 * (-3 32)	-6 39 * (-3 08)
Value of non-land income generating assets (in Rs)	0 01 (0 01)	0 01 *** (1 34)	—	0 01 (0 07)	-0 01 ** (-1 64)	—
Ratio of non-farm to farm income	-0.15 * (-2 92)	0 14 (0 32)	-0 14 * (-2 86)	- 0 13 * (-2 66)	-0 15 * (-3 06)	-0 15 * (-3 01)
Constant	6 29	-0 30	6 33	6 43	6 93	7 37
Count R^2	0 68	0 77	0 69	0 69	0 69	0 72
Chi-square	49 72 *	17 41 *	58 53 *	61 71 *	81 04 *	104 26 *
Degrees of freedom	6	6	5	7	5	5
No. of observations	245	65	310	310	359	359

Notes : *, **, and *** indicate significance at 1 , 5 and 10 per cent levels respectively.
Figures in the parentheses represent asymptotic t-ratios.

villages (Table 5.3A), the significant determinants of linkage are found to be OPAR, TEN and NFINC. For the category of medium and large farmers, OPAR, EDN, TEN and NLIGA appear as significant determinants If all farmers are considered together, the significant factors which determinant linkage are OPAR, CASTE and TEN. Table 5.3A also provides regression results relating to the sample of all households in the advanced villages. On the basis of two alternative regressions run for the category of all households,[6] it appears that the most significant determinants of linkage are OPAR, CASTE, EDN, TEN, NLIGA and NFINC. It is interesting to note that all these variables also have expected signs.

Table 5.3B presents regressions results for the backward villages. For the marginal and small farmers in these areas, significant determinants of linkage are found to be OPAR, CASTE, MWOR and NFINC. For the medium and large farmers, EDN and TEN are the significant determinants. Considering all categories of farmers together, OPAR, CASTE, EDN, MWOR and NFINC emerge as significant determinants of linkage. When considered for all households (comprising different categories of farmers and agricultural labourers), the significant determinants of linkage are found to be OPAR, CASTE, EDN, TEN, MWOR and NFINC. For all the regression coefficients associated with these variables, except the variable representing tenancy (TEN), we obtained signs as per our expectations.

---

6 We ran alternative regressions by dropping one or more of the variables for some categories of households in order to avoid the problem of multicollinearity. Some broad ideas about the nature of correlations between the variables can be obtained from the correlation matrices which are appended below (Appendix Tables A 5 1 through A 5.12)

The regression results obtained for all villages (advanced plus backward) are reported in Table 5.3C. For the marginal and small farmers here, OPAR, TEN, MWOR and NFINC are obtained as significant determinants of linkage. In the case of medium and large farmers only two variables namely, EDN and NLIGA are found to be significantly influencing linkage. When considered for all farmers, the statistically significant determinants of linkage are found to be OPAR, END, TEN, MWOR and NFINC. For all households in our sample villages (advanced and backward combined), all the variables namely, OPAR, CASTE, EDN, TEN, MWOR, NLIGA and NFINC turn out to be significant determinants of linkage in one equation or the other. What is more, all the regression coefficients associated with these variables have signs as per as our hypotheses.

The broad conclusion which arises form our regression results is that the probability of the households getting involved in interlinked credit contracts is significantly higher if they have small operated area, inferior caste opposition and also lower levels of education. On the other hand, higher percentage of area under tenancy significantly increases the probability of entering into interlinked credit contracts. However, the probability of entering into interlinked credit contracts become significantly lower for the households who have higher proportion of male workers to total workers, greater value (in Rs.) of non-land income generating assets and higher ratio of non-farm to farm incomes.

CHAPTER VI

INTEREST RATE DETERMINATION IN RURAL INFORMAL CREDIT

In this chapter, we take up for discussion the issue of determination of interest rates in the case of informal loan contracts in our study areas. As noted in Chapter II above, several explanations have been suggested in the literature as against high variation in the rate of interest in the case of informal loan contracts in rural areas. While some scholars explained high interest rate in terms of higher risk of loan default in the case of informal loans, others emphasized the importance of both quantity and quality of collaterals offered as important determinants of interest rates on the informal loans. The economic and social background of the borrowers have also been found important in determining interest rates on informal loans. The present chapter seeks to identify the main determinants of interest rates on informal loans in rural West Bengal. While doing so, we also provide explanations towards high variation in interest rates on informal loans. This chapter has three sections. While the first provides some idea about the extent of variation in interest rates on informal loans, in the second section we discuss the main determinants of interest rates in our surveyed villages. The final section provides the main conclusions of the chapter.

6.1 Extent of Variation in Interest Rates

The view that interest rate on informal credit in rural areas is not only very high but also it displays a considerable variation across rural households could be supported in terms of our data presented in Table 6.1. While the minimum value for interest rate on the informal credit is found to be 'zero', the maximum value is found to be as high as 136.83 per cent per year in our study areas. Similarly, the rates of interest charged from various groups of borrowers have not been uniform. The average rate of interest charged to the class of agricultural labourers has been nearly 12 per cent per year (when all villages are considered together). However, the same for marginal farmers is found to be 25 per cent and for the small farmers it is about 13 per cent. The group of medium and large farmers have paid at an average rate of 10 per cent per year while borrowing from the informal lenders. For each of these groups, however, the difference between the maximum and minimum rates of interest has been quite substantial. This justifies the view that there exists considerable variation in rates of interest charged by the informal lenders in rural areas.

6.2 Determinants of Interest Rate for Informal Loans

In this section, we discuss the issue of determination of interest rates in the case of informal loans. Our purpose here is to identify a set of factors which could explain variation in interest rates on informal loans across different categories of rural borrowers. We have employed the technique of multiple

Table 6.1 : Extent of Variation in Interest Rate on Informal Loans in Surveyed Villages

Category of Households	Interest rate charged on informal loans				
	Maximum	Minimum	Mean	S.D.	C.V. (S.D./Mean)
1	2	3	4	5	6
			ADVANCED VILLAGES		
AGL	96.00	0.00	8.22	20.72	2.52
MRF	136.83	0.00	18.09	30.18	1 67
SMF	120 00	0.00	10.99	21 62	1 97
MDF & LF	72 00	0 00	7.41	16 17	2 18
ALL	136 83	0.00	12.48	24 30	1 95
			BACKWARD VILLAGES		
AGL	120.00	0 00	14.98	24.72	1 65
MRF	120.00	0 00	31.69	38.11	1 20
SMF	120 00	0.00	10.99	21 62	1 97
MDF & LF	120.00	0.00	13 95	25.86	1 85
ALL	120.00	0.00	23 92	34 34	1 44
			ALL VILLAGES		
AGL	120.00	0.00	11.90	23 04	1 94
MRF	136.83	0.00	25.39	35 27	1 39
SMF	120.00	0.00	12.95	24.91	1 92
MDF & LF	120.00	0.00	10.10	20.88	2 07
ALL	136.83	0.00	17.58	29.73	1.69

Source : Field survey.

regression for this purpose. Before we present our regression results, it would be necessary to list the variables used in multiple regression analyses

Dependent Variable : The dependent variable in our multiple regression exercises is obviously the rate of interest charged on an informal loan contract. As is well known, the rate of interest for an informal loan could have two components namely, explicit and implicit. The explicit interest component of an informal loan is the rate of interest agreed upon by the lender and the borrower at the time of fixing the loan contract. However, apart from the explicit interest charges, the informal loans very often carry various implicit charges on the borrowers which need to be considered in order to obtain full view of interest charged on informal loans. These implicit charges are particularly visible in the context of interlinked loans (i.e. where the credit contract is linked with some other contracts such as labour, product, land and so on). In the present study, we have computed these implicit interest charges for different types of interlinked loans which have been added with explicit interest charges to obtain total interest for an informal loan. To reiterate, our dependent variable namely, the rate of interest on an informal loan (per cent per year) is the sum of explicit and implicit interest charges in respect of the loan contract[1].

Independent Variables :

Operated Area (OPAR) : We view this as a determinant of interest rate in the event of a rural household borrowing from the non-institutional lenders. Higher

---

[1] For computation of explicit, implicit and total interest charges on an informal loan, we have followed the procedure developed by Reddy (1992).

area under operation is reflective of better economic condition of the household. The household with higher operated area is also likely to enjoy better loan repayment capacity. It is then possible that the informal lenders while doing business with these households face lower risk of loan default. The rate of interest to be charged to these borrowers is likely to be low. We thus hypothesise an inverse relationship between the rate of interest on the informal loan and the area operated by the household.

Per Capita Income (PCI) : Apart from operated area, we have considered per capita income as the other indicator of economic condition of the rural borrowers. Here again, we supposed that the households with higher per capita income enjoy greater capacity to repay the loans and hence there is lower risk of loan default from the point of view of the lenders. The rate of interest on an informal loan is thus supposed to be low for the household with higher per capita income.

Caste Status (CASTE) : The caste status of the households may also be an important determinant in the context of rural informal loans. The households with inferior caste position are also likely to be economically poor and hence they may be charged at higher rates while borrowing in the informal market. We hypothesise a direct relationship between caste status and rate of interest on the informal loans. The caste status of the households has been quantified by using a dummy variable which takes value 'one' for the households belonging to the category of lower castes/tribals and its value is 'zero' for other households.

Education (EDN) : Besides caste status, educational levels of the households reflect the social position enjoyed by them. Lower level of education is very likely to be associated with inferior caste position and also weaker economic condition. Further, the households with inadequate education are likely to be unaware of full information about the conditions prevailing in the market for informal credit and hence are likely to be exploited by the lenders It is thus possible that the relationship between interest rate on the informal loan and the level of education is negative. It is to be noted that in the present study, education has been quantified in terms of the number of years of schooling by the head of the sample household.

Source of Loan (SOURCE) : In the rural informal credit market, the rate of interest may vary considerably depending upon the source from which the loan has been taken. This is particularly so when different types of lenders operate in the informal credit market with different intentions. If the objective of the lender is to maximise his interest earning through lending business, he would clearly like to set the rate of interest at a higher level. This is likely to be the case with the village moneylenders who pursue the lending business as their profession (main or marginal). On the other hand, if the lender does not pursue lending strictly as his business, he may advance loans on much softer terms. In any case, as compared to other lenders, the loans obtained from the rural moneylenders are likely to carry higher rates of interest. We test this hypothesis by incorporating the source dummy as an explanatory variable which takes on value 'one' if the loan has been taken from the moneylender and 'zero' otherwise.

Collateral (COLL) : The rate of interest for an informal loan is very likely to be influenced by the type of collateral offered for such a loan. It has been suggested in the literature that if the collateral being offered is marketable (gold/utensil/land), the rate of interest for the loan is likely to be low[2]. An inverse relationship is presumed to prevail between rate of interest and collateral type for the informal loans. Based on our experience of the functioning informal credit market in our surveyed villages, we, however, hypothesise a positive relationship between these two variables. Our experience is that the moneylenders not only charge higher rate of interest but also insist upon some collateral security as against the loans advanced by them. The class of moneylenders would almost invariably accept the collaterals which are marketable. In that case, we may have a situation of moneylenders advancing loans by accepting some marketable collaterals and yet charging higher rate of interest. At the other extreme, there may be lenders who do not demand any collateral and also supply loans at much lower rates of interest. This may be the case when loans are obtained from 'friends and relatives' who advance loans as part of their reciprocal relationship with the borrowers. Our hypothesis therefore is that the relationship between collateral type and rate of interest is positive. The collateral variable has been expressed by a dummy variable which assumes value 'one' if the collateral is marketable and it assumes value 'zero' otherwise.

Purpose of Loan (PURPOSE) : In the market for informal credit, the rate of interest may be determined by the purpose for which the loan is being

[2] See, for example, Sarap (1991), Swaminathan (1991, 1993).

obtained. It is quite possible that the loans obtained for the purposes other than production (i.e., consumption loans) carry higher rates of interest. In our study, we have measured the purpose of loan by using a dummy variable which assumes value 'one' for production loans and 'zero' others The relationship between the rate of interest and purpose of loan is then hypothesised to be negative one.

Period of Loan (PERIOD) : The period for which the loan is obtained in the credit market can also determine the interest rate. In the context of our study areas, the class of moneylenders in most cases advanced loans at very high rates of interest and also against some collateral security. Since the objective of these lenders is to raise interest earnings, they would not stipulate any time frame for the repayment of loans in most cases. Thus in a good number of loan cases in our sample, the period of loans remains unspecified. We hypothesise that the rate of interest on these loans is higher as compared to the loans for which period has been specified at the stage of formulating the loan contracts. In our regression exercises, the period of loan has been expressed by a dummy variable which assumes value 'one' for unspecified loans and 'zero' otherwise.

Linkage (LINK) : This factor can also influence the rate of interest in the case of an informal loan. More specifically, it may be possible to find that for the loan contracts which are interlinked with other contracts (product, labour etc.), the interest charges are higher as compared to the non-linked loan contracts. This is likely to be the case particularly when the households with inferior socio-economic positions display greater tendency towards getting involved in

interlinked loan contracts For quantifying linkage characteristic, we use a dummy variable which takes on value 'one' for the linked loans and 'zero' for non-linked loans. The hypothesis here is that the relationship between this variable and the rate of interest is positive one.

Size of Loan (SIZE) : The rate of interest for an informal loan may also be influenced by the size of loan The loans involving higher amounts are likely to carry lower rate of interest. This is primarily because these loans are mostly taken by the well-to-do households. The risks of lending in such cases are likely to be low and hence the rates of interest being lower. We hypothesise an inverse relationship between the size (or amount) of loan and the rate of interest for informal credit contracts.

Region (REG) : In a region characterised by advanced agricultural conditions (in terms of adoption of irrigation and other complementary inputs), the risk of agriculture (in terms of crop failure etc.) is low. In such a situation, the lenders face lower risks of loan default. Consequently, the rates of interest charged on informal loans are likely to be lower in advanced areas as compared to the same in background areas. To test the validity of this hypothesis, we have considered a region dummy which assumes value 'one' if the household belongs to an advanced village and 'zero' otherwise.

THE REGRESSION RESULTS :

The results of our multiple regression analyses have been presented in Table 6.2. We have run separate regressions for different rural classes namely, agricultural labourers, marginal and small farmers, medium and large farmers,

Table 6.2 : Least Squares Regression Analysis of the Determinants of Interest Rates for Informal Loans in Surveyed Villages
All Villages.

Explanatory variables	Estimated coefficients							
	Agricultural labourers		Marginal & Small farmers			Medium & Large farmers		
	Equn. 1	Equn. 2	Equn. 1	Equn. 2	Equn. 3	Equn. 1	Equn. 2	Equn. 3
1	2	3	4	5	6	7	8	9
Operated area (In acres)	—	—	—	-1 90 ** (-2 21)	-2 20 * (-2 61)	—	0 36 (1 09)	0 35 (1 04)
Caste status (Lower caste and tribals = 1, Others = 0)	—	—	—	—	4 10 *** (1 59)	—	—	-2 58 (-0 71)
Education (No of years of schooling)	-1 79 (-1 22)	-1 37 (-1 09)	-1 24 * (-3 96)	-0 77 * (-2.90)	—	—	0 06 (0 24)	—
Per capita income (in Rs)	-0 01 (-0 07)	-0 01 (-0 18)	-0 01 (-1 09)	-0 01 ** (-2 01)	-0 01 * (-2 82)	0 01 (0 72)	-0 01 (-1 02)	-0 01 (-1 14)
Source of loan (Moneylenders = 1, Others = 0)	—	52.60 * (4 14)	—	56 34 * (22 26)	49 94 * (14 00)	—	47 56 * (16 05)	47 32 * (15 87)
Purpose of loan (Production = 1, Others = 0)	—	—	—	-1 64 (-0 88)	—	—	-5 50 ** (-1 76)	-5 73 ** (-1 83)
Collateral (Marketable = 1, Others = 0)	—	—	21.26 * (4 58)	—	—	12 99 *** (1 54)	—	—
Period of loan (Unspecified = 1, Others = 0)	25 72 *** (1 61)	—	34 77 * (12 40)	—	7 21 ** (2 26)	23.29 * (6 51)	—	—
Linkage (Linked loan = 1, Others = 0)	-28 14 ** (-1 74)	-20 82 ** (-1 81)	—	1 94 (0 89)	—	3 32 (0 70)	3 08 (1 09)	2 90 (1 08)
Loan size (in Rs)	—	-0 01 (-0 59)	—	-6 88 (-0 40)	-0 01 (-0 70)	—	-1 63 (-0 06)	-3 88 (-0 15)
Region (Advanced = 1, Backward = 0)	-3 81 (-0 69)	—	-4 28 *** (-1 63)	—	—	-3 16 (-1 02)	—	—
Intercept	39 51 (2 28)	31 39 (2 62)	17 78 (6.71)	20.03 (6.68)	15 24 (4 91)	1 76 (0 47)	6 25 (1 33)	7 65 (1 60)
R^2	0 28	0 43	0 40	0 57	0 57	0 34	0 69	0 69
F Value	5.39 *	9 57 *	57 96 *	82 67 *	95 28 *	15 74 *	44 53 *	44 74 *
No. of Observations	57	57	428	428	428	141	141	141

Table 6.2 (Continued)

Explanatory variables	Estimated coefficients						
	All farmers			All households			
	Equn. 1	Equn. 2	Equn. 3	Equn. 1	Equn. 2	Equn. 3	Equn. 4
1	10	11	12	13	14	15	16
Operated area (in acres)	-0.67 ** (-1 93)	-0.50 ** (-1 71)	-0.64 * (-2 26)	—	—	-0 42 *** (-1 51)	-0 47 ** (-1 67)
Caste status (Lower caste and tribals = 1, Others = 0)	—	2.05 (0 89)	2 31 (1 00)	—	—	5 29 * (2 78)	4 63 * (2 34)
Education (No of years of schooling)	-0 91 * (-3 64)	-0 73 * (-3 42)	-0 76 * (-3 58)	-0.94 * (-4 07)	-0 60 * (-3 02)	—	—
Per capita income (in Rs)	-0.01 *** (-1 45)	—	—	-0 01 ** (-2 07)	-0 01 * (-2 98)	-0 01 * (-2 89)	-0 01 * (-2 61)
Source of loan (Moneylenders = 1, Others = 0)	—	55 14 * (26 38)	49 85 * (17 59)	—	55 91 * (27 69)	50 65 * (17 95)	50 79 * (18 17)
Purpose of loan (Production = 1, Others = 0)	—	-3 21 *** (-1 61)	—	—	-2 96 ** (-1 70)	—	—
Collateral (Marketable = 1, Others = 0)	20.05 * (5.03)	—	—	18 83 * (4 83)	—	—	—
Period of loan (Unspecified = 1, Others = 0)	32.16 * (13.96)	—	6 49 * (2 66)	33.18 * (14 88)	—	6 31 * (2 55)	5 48 ** (2 29)
Linkage (Linked loan = 1; Others = 0)	—	2 33 *** (1 28)	—	—	1 25 (0 73)	—	—
Loan size (in Rs)	—	-0 01 (-0 76)	—	—	-8 79 (-0 62)	-0 01 (-0 79)	—
Region (Advanced = 1, Backward = 0)	—	—	-2 76 *** (-1 54)	—	—	—	-2 50 *** (-1 46)
Intercept	15 68 (7.17)	14 11 (5 06)	13 30 (5 59)	13 99 (7 26)	15 61 (7 11)	9 80 (4 89)	11 13 (4 97)
R^2	0 39	0 58	0 59	0 38	0 58	0 58	0 58
F Value	72 38 *	114 83 *	136 61 *	95 24 *	142 90 *	143 34 *	143 94 *
No. of Observations	569	569	569	626	626	626	626

Note :* , ** and *** indicate significance at 1, 5 and 10 per cent levels respectively.

all farmers and all households (which comprise the farmers and agricultural labourers) Again for each category, we have tried several regressions by considering different sets of explanatory variables. This was necessary because many of our explanatory variables exhibited strong correlations amongst themselves (see Appendix Tables A6.1 through A6.5).

In the regression run for the category of agricultural labourers, we did not consider the variables such as OPAR, CASTE, PURPOSE and COLL. Since these households do not cultivate any land and all of them belong to the category of lower castes and tribals, it would not be appropriate to view OPAR and CASTE as determinants of interest rates for them. Similarly, we have not considered PURPOSE and COLL because agricultural labourers do not obtain loans from the informal lenders for production purposes and also that in almost cent per cent cases of collateral based loans, they have offered non-marketable collaterals (future labour services) while obtaining loans. Table 6.2 shows that all the variables considered in our regression equations for agricultural labourers, except linkage variable (LINK), have signs as per our hypotheses. However, among these variables, only SOURCE and PERIOD appear to be statistically significant. The relationship between LINK and rate of interest is negative and statistically significant for the class of agricultural labourers which goes against our hypothesis. The region dummy (REG) has a negative sign, though statistically insignificant, implying that the rate of interest is higher in the backward villages as compared to the advanced villages.

For the category of marginal and small farmers, we present results of three separate regressions which have been estimated by considering different

combinations of the explanatory variables. It is observed from Table 6.2 that all the variables considered by us have expected signs. Among these variables, OPAR, CASTE, EDN, PCI, SOURCE, COLL, PERIOD and REG appear to be statistically significant in one equation or the other. This implies that among the marginal and small farmers, those with higher operated area, higher per capita income, superior caste position and better education pay lower rate of interest while borrowing from the informal lenders. However, when these households borrow from the moneylenders, offer marketable collaterals for obtaining loans and also the period of loan remaining unspecified, they are charged with higher rate of interest. The rate of interest also appears to be higher in the backward village when considered for the sample of marginal and small farmers.

Table 6.2 also presents regression results for the category of medium and large farmers. It appears that only four variables have turned out to be statistically significant in one equation or the other for these households. The significant determinants of interest rate for them are found to be SOURCE, PURPOSE, COLL and PERIOD. While the relationship between the rate of interest and the variables such as SOURCE, COLL and PERIOD is positive, the same with PURPOSE is inverse. It implies that the rate of interest is higher when loans are obtained from the moneylenders, collaterals offered are marketable and the duration of loan remains unspecified. On the other hand, the rate of interest is lower when the loans are obtained for production purposes.

The regression results for all farmers combined have also been presented in the same Table 6.2. The three alternative regressions estimated here show that all the variables, except CASTE and SIZE, have statistical significance in one equation or the other. Furthermore, all these variables have expected signs. Thus while the relationship between the rate of interest and OPAR, EDN, PURPOSE and REG is negative, the same with SOURCE, COLL, PERIOD and LINK is positive. It thus appears that the farmers with higher operated area, better education, higher per capita income and also belonging to the advanced agricultural region pay lower rate of interest while borrowing in the informal credit market. However, when the borrowers depend on the moneylenders, offer marketable collaterals, do not specify the period of loan and enter into interlinked contracts bear higher interest charges on the loans obtained by them.

We have also attempted separate regressions by considering the entire sample (which includes all loan cases involving different categories of households). The regression results obtained for all households' sample show that all the variables identified by us as prospective determinants of interest rate on rural informal loans have expected signs. It is interesting to note that as many as nine variables, out of a total of eleven variables, have turned out to be (statistically) significant determinants of interest rate on informal credit in our study areas. Among these nine variables, OPAR, EDN, PCI, PURPOSE and REG display negative relationship with the rate of interest while the same is positive with variables such as CASTE, SOURCE, COLL and PERIOD.

To summarise, in our study villages, the households enjoying superior socio-economic position (those having higher operated area, higher per capita income, superior caste position and better education) are able to borrow at relatively lower rate of interest in the informal credit market. However, when rural households depend on the moneylenders (whose objective is to maximise interest earnings), who offer loans in most cases by taking some marketable collaterals and also prefer to leave the period of loans as unspecified, they are required to pay interest at much higher rates. The rate of interest also varies according as the stage of agricultural development of the region under consideration. In agriculturally advanced areas, the risks of agriculture are low which encourage the non-institutional lenders to offer loans at relatively lower interest rate since they face lower risk of loan default.

CHAPTER VII

SUMMARY AND CONCLUSIONS

In recent years, a great deal of attention has been devoted towards understanding the nature and functioning of rural credit markets particularly, in backward agrarian economies. This is understandable in so far as the prevailing credit systems have their definite implications for the development of agriculture as also the well-being of various sections of rural population. Past researchers working on agrarian credit markets have highlighted a number of features : inadequate availability and unequal distribution of formal credit (Gonzalez Vega, 1981; Lipton, 1976; Rao, 1970, 1975; Braverman and Gausch, 1986), gradual strengthening of the base of informal credit (Sarap, 1991; Ghate et al, 1992), exploitative nature of informal credit (Bhaduri, 1977, 1983), interlinked nature of informal credit contracts (Bhaduri, 1973, 1983, 1986; Bharadwaj, 1974; Bardhan, 1980; Braverman and Stiglitz, 1982; Mitra, 1983; Braverman and Gausch, 1986; Bell and Srinivasan, 1989; Sarap, 1991; Reddy, 1992; Banik, 1993; Bhaumik, 1993), high variability of rate of interest on informal loans (Bottomley, 1963, 1975; Chandravarkar, 1965; Bhaduri, 1977, 1983; Basu, 1984; Platteau, 1985; Swaminathan, 1991; Sarap, 1991) and so on. Each of these aspects has drawn considerable research attention over past couple of decades or so. Nevertheless, no generalised opinion could be formed regarding the actual nature and functioning of agrarian credit markets.

In the present study, apart from reviewing the major issues arising out of past discussion on agrarian credit markets, we also examined, at the empirical level, the workings of rural credit markets with reference to West Bengal. The specific objectives of our study have been : (i) to understand the structure and functioning of credit markets in rural West Bengal; (ii) to find the characteristics of the households participating in formal and informal segments of rural credit markets and the underlying purposes for which the credit is obtained from different sources; (iii) to estimate the credit needs of the farmers and to measure the credit gaps for different categories of farmers; (iv) to examine the terms and conditions associated with informal credit contracts; (v) to examine the extent and types of interlinked credit contracts and to find the characteristics of households participating in interlinked credit transactions; and (vi) to find out the factors which account for variation in the rate of interest under informal loans. For examining the issues relating to the rural credit markets, we relied almost exclusively on primary data collected from some sampled villages in West Bengal. For the collection of primary data, two districts namely, Hooghly and Bankura have been purposively chosen. While Hooghly is known to be an agriculturally advanced district, Bankura is far backward in this respect. We covered four villages in each district, thus covering eight villages in all. From each village, we took a sample of 50 to 55 households covering the categories of agricultural labourers, marginal farmers, small farmers, medium farmers and large farmers, with probability proportional to the size of their respective stratum. The total sample size for our study is 420.

For the actual collection of field data, a comprehensive questionnaire was prepared. The questionnaire is so designed as to make queries regarding aspects such as the participation of households in credit markets, purposewise and sourcewise distribution of formal and informal loans, the nature of credit transactions with or without collateral, the access of the farmers to formal credit, transaction cost in case of formal loans, estimation of credit requirements and credit gaps of different categories of farmers, the incidence and types of interlinkages between different markets, the determination of rate of interest in respect of informal credit and so on. The field work is conducted in two stages. The first stage of survey continued between December 1991 and February 1992 covering the kharif season while the final visit ranged between May 1992 and July 1992 covering the Rabi/ Boro season. The reference period for this study is the agricultural year July 1991 to June 1992.

The present study comes up with many interesting findings some of which need to be highlighted:

Participation in rural credit markets : In the villages surveyed by us in West Bengal, the rate of participation of the rural households in credit markets (formal and/or informal) has been extremely high. More than 90 per cent of all households have turned out to be the borrowing households. This is reflective of their acute need for credit. However, the rural households do not confine themselves to the formal credit sources alone. Thus, the informal credit operates simultaneously and indeed more strongly alongside the formal credit in rural West Bengal. Our data show that of the total amount borrowed by the

rural households, the share of informal sector alone has been nearly two-third. This further implies that the availability of formal credit has been highly inadequate which forced the rural borrowers to depend more on informal credit sources.

Distribution of formal credit : Not only that the quantum of formal credit has been inadequate but also its distribution being far from equal in West Bengal villages. Our data revealed that the class of agricultural labourers have been almost fully debarred from the benefits of formal credit. In order to satisfy their credit needs, the agricultural labourers are forced to depend on the informal credit sources. Among various groups of farmers, the percentage of households borrowing from the formal agencies has been the highest for the category of small farmers (those operating land between 2.50 and 4.99 acres). This does not necessarily mean that the formal credit agencies in rural West Bengal have been pursuing a small farmer oriented credit policy. Our data show that not only the percentage of medium and large farmers borrowing from formal sources has been significant but also in terms of per household amount of borrowing, the small and marginal farmers lag far behind the medium and large farmers. In the event of inadequate availability of formal credit, a large number of the marginal and small farmers are forced to borrow from the informal lenders in our sample villages.

Access to formal credit : What determines the access to formal credit by the rural households becomes an important question in the context of discussion on rural credit markets (Sarap, 1991). In order to answer this question in more concrete terms, we attempted some logit regression exercises which helped to

identify the main determinants of rural households' access to formal credit in the context of West Bengal villages. Our regression results show that the possibility of obtaining formal loans is significantly less for the households with inferior caste position and low level of education. Further, the households with smaller operated area are also found to be in a disadvantageous position in so far as the availability of formal loans to them is concerned. This part of our findings supported the view that the formal credit agencies in rural areas follow a credit policy favouring more the higher class / caste people (see Tendulkar, 1983; Sarap, 1991). Our logit regressions also show that there are other determinants of the access to formal loans as well. For example, when the households have higher worker-dependent ratios and/or they have past loans as outstanding, the probability of getting formal loans becomes smaller. On the other hand, this probability goes up when the households have higher area under tenancy cultivation and/or they are using modern agricultural inputs in higher quantities.

Segmentation of rural credit markets : The rural credit markets in West Bengal, as in many other areas, are fully segmented into formal and informal sources (also see Swaminathan, 1991). The basis of this segmentation could be explained in terms of aspects such as purposes of loan, loan duration and collateral securities offered by the borrowers. Our data show that loans from formal agencies are obtained almost exclusively for production purposes. The informal sources also supply production loans since the formal loans have not been supplied adequately. However, the informal lenders also provide the consumption loans to the rural households. This, in part, causes segmentation

in rural credit markets particularly when two different purposes (production and consumption) are served by the two alternative credit sources (formal and informal). The period for which the loans are obtained could also lead to segmentation of credit markets. We observed that a majority of formal loans are of shorter duration type (for six months or less) while the longer duration loans dominate the cases of informal credit. Thus the households requiring longer duration loans or those who are unsure about the time when the loans would be repaid, would almost invariably approach the informal lenders. The credit markets in our study villages also become segmented depending upon the collateral securities accepted in them. Our data show that the only acceptable collateral with the formal credit agencies is land which is fully marketable. On the other hand, non-land and non-marketable collaterals (product and labour services) dominate the informal loan contracts in our study areas (also see Swaminathan,. 1991, 1993; Sarap, 1987, 1991). The obvious implication of this fact is that the households having adequate land to offer as collateral would approach formal credit agencies for loans while those having more of non-marketable collaterals would fall back upon the informal lenders. This then results in the segmentation of agrarian credit markets into formal and informal sectors.

Who are the informal lenders ? The informal lenders do not constitute a homogeneous category in our study areas (see, in this context, Ghate et al. 1992, Ch. 1). Different groups of informal lenders are found to operate in rural areas with different motives. Apart from the village moneylenders, other prominent informal lenders in West Bengal villages are found to be the 'inputs

sellers' and 'friends and relatives'. In a recent study, Sarap (1991) too noticed the hold of 'inputs sellers' (particularly, fertiliser dealers) in rural Orissa while Islam and Rahaman (1985) observed the supremacy of 'friends and relatives' and 'neighbours' as informal lenders in rural Bangladesh. Our data revealed that these three categories ('villages moneylenders', 'inputs sellers' and 'friends and relatives') together supplied nearly 75 per cent of total informal loan amount in rural West Bengal wherein the share of each category has been nearly 25 per cent. This apart, the categories of traders and big cultivators shared in about one-fifth of total informal loan amount.

Who borrows from whom ? In the market for informal credit, each lender may have his own preference for a borrower. It may then be possible to establish some relationship between the lender- borrower types. We observed that among various types of borrowers, the categories of marginal and small farmers have been preferred most by the village moneylenders. The traders have also revealed their inclination for these categories. On the other hand, while the class of 'inputs sellers' displayed a tendency of serving all categories of farmers, yet their preference for better-off farmers is clearly established both in the advanced and backward areas of our study. The incidence of better-off farmers obtaining loans from their 'friends and relatives' has also been greater in out study villages. However, the big cultivators have mostly preferred the categories of agricultural labourers and marginal farmers while advancing loans. (also see Bardhan, 1979, 1983).

Lender type and purpose of loan : Within the informal credit market, some relationship may also exist between the type of lender and the purpose of

loan. Our data show that, among the informal lenders, the 'inputs sellers' and the traders supply the production loans only. On the other hand, most important suppliers of consumption loans have been the big cultivators, village moneylenders and 'friends and relatives'. This implies that the informal credit market itself gets further segmented depending upon the purpose for which the loans are obtained by the borrowers.

Lender type and collateral preference : In the informal credit market, each type of lender has his definite preference for a collateral. We observed that while the traders and 'inputs sellers' view product (crop output) as the most acceptable collateral, the class of big cultivators prefer future labour services. These are clearly the non-marketable collaterals. On the other hand, the village moneylenders would, in most cases, accept marketable collaterals such as gold / utensils only.

Delivery time and transaction cost of formal loan : Several scholars have highlighted the difficulties into which the rural borrowers are put into while obtaining loans from the formal credit agencies. Such difficulties may arise from the delays in disbursement of loan, large number of visits to the bank offices and so on (Sarap, 1991). It has been argued that owing to these difficulties, rural borrowers have to incur heavy transaction costs in respect to the formal loans (see Adams and Nehman, 1979; Ladman, 1984; Ahmed, 1989; Sarap, 1991). Our investigation in West Bengal villages revealed that, on average, a rural borrower had to wait for about one and half months since the date of submission of the application, before getting the loan in hand. This is contrary to the case for an informal loan which is available almost

immediately on demand. We also observed that, for the poorer households, the delay in disbursement of loans goes up and the frequency of making visit to the bank offices is greater for them. However, as regards the transaction costs of formal loans, we found an encouraging result. It is that the element of transaction costs has been very low (less than 1 per cent) in our study areas. This is possibly because a large number of institutional loans in our survey villages are drawn from the co-operative societies which are locally established and also have members in managing committees representing all categories of households. Consequently, the rural households obtained formal loans at the expense of very low transaction costs. It is, however, to be noted that between different categories of borrowers, the transaction costs are relatively lower for the better-off households. Nevertheless, total cost of the formal loan (interest cost plus transaction cost) is lower than the cost of an informal loan in rural West Bengal. Our computations show that while total cost of a formal loan has been 13.31 per cent per year (considering average of all loan cases), the cost an informal loan turned out to be 17.58 per cent per year. In view of our study, the prevalence of informal credit in rural areas could not be explained in terms of higher actual cost of borrowing from the formal sources as supposed by many scholars (see Ahmed, 1989; Sarap, 1991, Banik, 1993).

Credit gap : In order to understand the performance of formal credit institutions in the supply of credit in rural West Bengal, we have attempted to measure the 'credit gap' which may exist for different categories of farmers. We defined 'credit gap' as the proportion of shortfall in credit availability to

credit required (for production purposes) by the farming households. Our estimated results show that the distribution of formal credit between different categories of farmers has not been consistent with their requirements for credit. Between different categories of farmers, 'credit gaps' are found to be relatively higher for the marginal and small farmers (also see Ghatak, 1983) as compared to the medium and large farmers. It is interesting to note that while the former suffered from credit shortage, the later have been benefitted, in some cases, even by surplus credit advanced to them by the institutional credit agencies. Our findings here reveal poor performance of formal credit institutions as regards the supply of credit to the small and marginal farmers.

Loan default : In our study areas, nearly 40 per cent of all borrowers have turned out to be the defaulters of formal loans during the reference period of this study. These defaulters spread over all groups of households. However, both the overdues per defaulter as well as the proportion of overdues to formal credit received are lower for the categories of agricultural labourers and marginal farmers. The view that the poor farmers are relatively more responsible for the default of formal loan can hardly be accepted in terms of our data.

Incidence of interlinked credit contracts : We observed that the incidence of interlinkage between credit and other contract(s) is much higher in agriculturally advanced areas as compared to backward areas. This finding supports Bell and Srinivasan (1989) but contradicts Reddy (1992). It is also observed that the incidence of interlinkage is relatively higher for the agricultural labourers and marginal farmers. This, however, does not mean

that participation in interlinked contracts has been insignificant for the higher categories of households. Contrary to the view that interlinkages have been associated with poorer households only (see Bharadwaj, 1974; Bhaduri, 1973,1983), our data show that a significant proportion of better-off households too participate in interlinked contracts in our study villages (both advanced and backward). It is observed that, considering all villages together, while nearly 98 per cent of agricultural labourers turned out to be linked borrowers, 61 per cent of marginal borrowers and 35 per cent of small borrowers have reported to be the linked borrowers. The corresponding percentage for the category of medium and large farmers is found to be 26 per cent.

Forms of Interlinkages : As many as seven different types of interlinked credit contracts have been identified in our study areas which are input-cash, cash-labour, input-product, cash-product, cash-land tenancy, cash-land and product-labour. However, all of these are not equally important. The most dominant form of interlinkage has been 'input-cash' which accounted for nearly 50 per cent of all interlinked contracts. The predominance of this type of interlinkage has been also noted by Reddy (1992) in the context of Andhra Pradesh. Our data show that this type of interlinkage was relatively more widespread in advanced villages and also among the households belonging to higher farm size groups. The second most important form of interlinkage has been 'cash-labour' which accounted for nearly 27 per cent of all interlinked contracts. Expectedly, this interlinkage involved mostly the categories of agricultural labourers and marginal farmers (see, in this context, Bardhan,

1984; Bhaumik, 1993). In about 10 per cent cases, the form of interlinkage has been 'input-product' which mostly involved the small farmers. The other important form of interlinkage namely, 'cash-product' (representing 9 per cent of all cases) again involved relatively more the small and marginal farmers. In 17 cases, out of a total of 413 cases of interlinked credit contracts, interlinkages have been of other types which are 'cash-land tenancy', 'cash-land' and 'product-labour'.

Characteristics of linked households : The characteristics of the households participating in the linked credit transactions need to be explored empirically. In an attempt to understand this, we have fitted some logit regressions which provide interesting results. It is observed that the probability of entering into linked credit transactions is higher for the households having smaller operated area, inferior caste position and lower level of education. This implies that the households belonging to the weaker socio-economic category have greater tendency to enter into such contracts. Our regression results also show that the households with higher area under tenancy cultivation are involved relatively more in interlinked credit contracts while borrowing. On the other hand, the probability of entering into linked credit contracts becomes lower for the households having higher ratio of male workers to total workers, higher value of non-land assets and also higher ratio of non-farm to farm income.

Interest rate on informal credit : We have mentioned previously that the average rate of interest on an informal loan is 17.58 per cent per year which is not much higher than the average rate of interest charged on a formal loan

(13.31 per cent per year). This observation, however, suppresses the fact that while the rate of interest on the formal credit tends to hover around some institutionally stipulated level, the same for informal credit varies considerably along a wide spectrum. Our data show that while the minimum rate of interest on the informal loan is zero per cent, the maximum is found to be as high as 136.83 per cent. We thus support the view that there exists wide variation in interest rates on informal loans in rural areas (see, Platteau, 1985; Sarap, 1990, 1991).

Interest rate determination on informal loans : An important issue in the context of rural credit markets has been the determination of rate of interest on informal loans. This issue has been dealt with both at theoretical as well as empirical levels (see Bottomley, 1963, 1975; Chandravarkar, 1965; Bhaduri, 1977, 1983; Basu, 1984; Platteau, 1985; Swaminathan, 1991; Sarap, 1991). Several explanations have been offered as regards high rate of interest usually charged on the informal loans. While some scholars view high rate of interest on an informal loan being the resultant of higher risks associated with informal lending (Bottomley, 1963, 1975; Gupta, 1991), others held exploitative character of informal lenders being responsible for the same (Bhaduri, 1973, 1983). This apart, other factor such as socio-economic background of the borrowers, types of collateral securities offered and so on (Swaminathan, 1991, 1993) have been also found as important. The data available with us enable empirical examination of this issue in the context of rural West Bengal. We fitted some multiple regressions in order to identify the determinants of interest rates on informal loans in the context of our study

areas. Our results show that the rate of interest paid on an informal loan is significantly higher for the households who belong to an inferior socio-economic category (as reflected by smaller operated area, lower education and inferior caste position). It is also to be noted that, in our study areas, the rate of interest is significantly higher when the loans are obtained from village moneylenders. The class of moneylenders are found to offer loans as against some marketable collateral and they preferred to leave the period of loan unspecified since their sole motive is to maximise interest earnings. Consequently, the rate of interest on the informal loans is found to be significantly higher when the collaterals offered are marketable and also the period of loans remaining unspecified. We also observed that interest rate on informal loans in agriculturally advanced areas (where the risks of cultivation is low) is significantly lower as compared to the backward areas. This provides some support to the 'lenders' risk hypothesis' as suggested in the literature.

Policy implications : This study has several implications for policy. First, since the agricultural labourers and marginal farmers have not been adequately served by the institutional credit agencies, efforts should be made to further extend credit support to them. The class of agricultural labourers have remained almost outside the purview of institutional credit. Some schemes need to be launched by the institutional agencies for providing credit support to them even when they are unable to offer some tangible collateral. The marginal farmers have also received inadequate attention from the institutional agencies which forced them to depend heavily on non-institutional sources of borrowing. It needs to be pointed out that, in West Bengal, nearly 81 per cent of the operational holdings belong to the 'marginal' category

(National Sample Survey Organisation, 1992, p. 23). Hence the future development of agriculture in West Bengal depends largely on the production performance of its marginal farming category. In this context, credit support seems indispensable since most of these farmers are unlikely to have adequate financial means for investment in agriculture. Our study also highlighted the gap that exists between the requirement for credit and its ultimate availability in the case of marginal and small farmers. Unless such a gap is removed with more active intervention by the institutional credit agencies, agricultural development in the state is very likely to suffer. Secondly, mere provision of institutional credit is not enough unless the delay in disbursement of loans is significantly reduced. It is suggested that the institutional credit agencies think about the means by which credit could be released to the borrowers without much delay. Thirdly, our study pointed out that the class of village moneylenders still operate rather strongly in West Bengal villages. Nearly 25 per cent of total loan amount is supplied by them. These lenders pursue the most exploitative business of money lending. The poorer borrowing households could be rescued from the grip of these lenders only through greater supply of institutional credit to them. Apart from the moneylenders, the inputs sellers are found to exercise considerable control in rural West Bengal. Various categories of farmers obtained loans from them in terms of inputs supply and they very often charge higher price for the same. In order to check for the influence of these categories of lenders, village level co-operatives have to assume the responsibility of supplying vital agricultural inputs. Our overall suggestion is that given the marginal and small farming character of agriculture in West Bengal, for attaining better agricultural

performance, institutional credit be supplied in sufficient amounts to these farmers and also with minimum delay in disbursement.

APPENDIX TABLES

Table A 1.1 : Brief Description of Sampled Villages.

District	Block	Village	Population (1991)	Percentage of		Literacy rate	Major crops grown	Major sources of irrigation
				SC	ST			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Hooghly	Pursura	Deulpara	1802	24.19	2.33	54 11	Aman paddy, Potato, Jute	Pumpset, STW
	Goghat-I	Kantali	547	42.23	0.00	59.41	Aman paddy, Boro paddy, Potato, Oilseeds	STW, Pumpset
	Goghat-II	Paschim Amarpur	1024	28.50	12.82	69.23	Aman paddy, Boro paddy, Potato, Oilseeds	STW, DTW, RLI
		Subirchak	817	56.92	5.51	55.81	Aman paddy, Boro paddy, Potato, Oilseeds	Pumpset, STW
Bankura	Kotalpur	Tajpur	3125	32.32	7.26	53 41	Aman paddy, Boro paddy, Potato	STW, DTW
	Joypur	Hijaldiha	2072	51.79	4 58	45 75	Aman paddy, Potato, Oilseeds	Pumpset, STW, Canal
	Patrasayer	Bamira	2143	49.98	0 00	41 39	Aman paddy, Boro paddy	Pumpset, STW, Canal
		Nabasan	717	50.77	0.00	27 89	Aman paddy, Oilseeds	Pumpset, STW

Note : STW = Shallow Tube Well,
DTW = Deep Tube Well,
RLI = River Lift Irrigation.

Source : District Census Handbook (1991).

Table A 4.1 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. Marginal and Small Farmers' Sample (Advanced Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	0 06	-0 14	0 07	-0 08	-0 15 **	0 09	0 17 **	-0 16 **
Operated area (in acres)		1 00	-0 18 **	0 03	-0 09	0 11	0 45 *	0 56 *	0 21 *
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 23 *	0 12	0 11	-0 04	-0 24 *	0 06
Education (No of years of schooling)				1 00	-0 25 *	0 09	-0 13	0 03	0 02
Percentage of area under tenancy					1 00	-0 13	-0 06	0 03	-0 07
Worker-dependent ratio						1 00	-0 20 *	0 14	-0 12
Cropping intensity							1 00	-0 12	0 37 *
Use of modern inputs (in Rs)								1 00	0 11
Overdues (in Rs.)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.2 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. Medium and Large Farmers' Sample (Advanced Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	-0 11	-0 11	0 18	0 38 *	0 07	0 19	0 06	0 07
Operated area (in acres)		1 00	-0 04	0 05	-0 09	-0 12	-0 21	0 24	-0 01
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 14	-0 08	-0 10	-0 06	-0 08	0 13
Education (No of years of schooling)				1 00	-0 21	-0 29	-0 17	-0 30 **	0 01
Percentage of area under tenancy					1 00	0 15	0 34 **	0 42 *	-0 14
Worker-dependent ratio						1 00	0 04	-0 01	0 19
Cropping intensity							1 00	0 60 *	-0 01
Use of modern inputs (in Rs)								1 00	-0 09
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.3 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. All Farmers' Sample (Advanced Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	-0 05	-0 12	0 08	-0 01	-0 10	0 09	0 08	-0 12
Operated area (in acres)		1 00	-0 22 *	0 10	-0 21 *	0 04	0 18 *	0 64 *	0 05
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 23 *	0 14 **	0 08	-0 03	-0 26 *	0 07
Education (No of years of schooling)				1 00	-0 25 *	0 01	-0 12	0 01	0 01
Percentage of area under tenancy					1 00	-0 09	-0 05	-0 03	-0 07
Worker-dependent ratio						1 00	-0 17 **	0 10	-0 07
Cropping intensity							1 00	-0 10	0 34 *
Use of modern inputs (in Rs.)								1 00	0 02
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.4 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. All Households (Advanced Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	0 05	-0 21 *	0 16 *	0 05	-0 10	0 09	0 16 **	-0 09
Operated area (in acres)		1 00	-0 42 *	0 26 *	-0 08	0 01	0 18 *	0 71 *	0 09
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 42 *	-0 05	0 07	-0 04	-0 45 *	-0 01
Education (No of years of schooling)				1 00	-0 11	-0 02	-0 09	0 20 *	0 05
Percentage of area under tenancy					1 00	-0 10	-0 04	0 08	-0 04
Worker-dependent ratio						1 00	-0 16 **	0 05	-0 06
Cropping intensity							1 00	-0 08	0 35 *
Use of modern inputs (in Rs)								1 00	0 06
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.5 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. Marginal and Small Farmers' Sample (Backward Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	0 32 *	-0 29 *	0 29 *	0 07	-0 01	0 19 **	0 32 *	-0 11
Operated area (in acres)		1 00	-0 41 *	0 35 *	0 07	-0 04	-0 06	0 68 *	0 06
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0.70 *	0 28 *	0 11	-0 11	-0 34 *	-0 11
Education (No of years of schooling)				1 00	-0 32 *	-0 12	0 22 *	0 34 *	0 03
Percentage of area under tenancy					1 00	0 18 **	-0 04	0 12	-0 05
Worker-dependent ratio						1 00	0 01	0 05	-0 03
Cropping intensity							1 00	0 33 *	-0 01
Use of modern inputs (in Rs)								1 00	0 12
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.6 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. Medium and Large Farmers' Sample (Backward Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	0 15	0.13	-0 21	0 09	0 10	-0 24	0 19	-0 34
Operated area (in acres)		1 00	-0 26	0 30	-0 42 *	-0 17	-0 29	0 28	-0 30
Caste status (Lower caste and tribals = 1, Others = 0)			1.00	-0 01	0 36 **	-0 08	-0 15	-0 13	0 36 **
Education (No. of years of schooling)				1 00	-0 43 **	-0 37 **	-0 07	0 18	0 17
Percentage of area under tenancy					1 00	0 04	0 14	-0 20	0 16
Worker-dependent ratio						1 00	0 34	0 41 **	-0 13
Cropping intensity							1 00	0 45 *	0 04
Use of modern inputs (in Rs)								1 00	-0 18
Overdues (in Rs.)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.7 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. All Farmers' Sample (Backward Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	0 17 **	-0 23 *	0 21 *	0 07	0 01	0 14	0 24 *	-0 16 **
Operated area (in acres)		1 00	-0 40 *	0 34 *	-0 10	-0 07	-0 16 **	0 68 *	-0 04
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 63 *	0 29 *	0 10	-0 06	-0 37 *	-0 03
Education (No of years of schooling)				1 00	-0 34 *	-0 17 **	0 15	0 35 *	0 07
Percentage of area under tenancy					1 00	0 16 **	-0 02	-0 01	-0 01
Worker-dependent ratio						1 00	0 03	0 09	-0 05
Cropping intensity							1 00	0 16 **	-0 01
Use of modern inputs (in Rs)								1 00	0 02
Overdues (in Rs.)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.8 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages. All Households (Backward Villages).

Variables	Participation in formal credit	Operated area	Caste status	Education	Percentage of area under tenancy	Worker-dependent ratio	Cropping intensity	Use of modern inputs	Overdues
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Participation in formal credit	1 00	0 24 *	-0 29 *	0 26 *	0 14 **	-0 09	0 29 *	0 31 *	-0 12
Operated area (in acres)		1 00	-0 46 *	0 40 *	0 01	-0 15 **	0 17 **	0 72 *	0 01
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 66 *	0 15 **	0 20 *	-0 32 *	-0 44 *	-0 07
Education (No of years of schooling)				1 00	-0 21 *	-0 23 *	0 33 *	0 41 *	0 09
Percentage of area under tenancy					1 00	0 03	0 22 *	0 09	0 03
Worker-dependent ratio						1 00	-0 21 *	-0 03	-0 10
Cropping intensity							1 00	0 37 *	0 10
Use of modern inputs (in Rs)								1 00	0 06
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.9 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages
Marginal and Small Farmers' Sample (All Villages)

Variables (1)	Participation in formal credit (2)	Operated area (3)	Caste status (4)	Education (5)	Percentage of area under tenancy (6)	Worker-dependent ratio (7)	Cropping intensity (8)	Use of modern inputs (9)	Overdues (10)
Participation in formal credit	1 00	0 18 *	-0 22 *	0 18 *	-0 01	-0 09	0 07	0 20 *	-0 14 **
Operated area (in acres)		1 00	-0 37 *	0 24 *	-0 01	0 02	0 34 *	0 61 *	0 17 *
Caste status (lower caste and tribals = 1 , others = 0)			1 00	-0 54 *	0 18 *	0 13 **	-0 04	-0 38 *	-0 02
Education (No of years of schooling)				1 00	-0 26 *	-0 03	-0 07	0 25 *	0 03
Percentage of area under tenancy					1 00	0 01	-0 04	0 05	-0 06
Worker-dependent ratio						1 00	-0 14 **	0 06	-0 09
Cropping intensity							1 00	-0 06	0 34 *
Use of modern inputs (in Rs)								1 00	0 12 **
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.10 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages
Medium and Large Farmers' Sample (All Villages)

Variables (1)	Participation in formal credit (2)	Operated area (3)	Caste status (4)	Education (5)	Percentage of area under tenancy (6)	Worker-dependent ratio (7)	Cropping intensity (8)	Use of modern inputs (9)	Overdues (10)
Participation in formal credit	1 00	0 05	0 07	-0 01	0 24 **	0 08	-0 01	0 04	-0 08
Operated area (in acres)		1 00	-0 11	0 13	-0 22	-0 14	-0 32 *	0 07	-0 12
Caste status (lower caste and tribals = 1 , others = 0)			1 00	-0 09	0 27 **	-0 08	-0 20	-0 21	0 24 **
Education (No of years of schooling)				1 00	-0 34 *	-0 31 *	-0 03	-0 03	0 06
Percentage of area under tenancy					1 00	0 09	0 09	0 02	0 01
Worker-dependent ratio						1 00	0 12	0 11	0 08
Cropping intensity							1 00	0 69 *	-0 03
Use of modern inputs (in Rs)								1 00	-0 13
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.11 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages
All Farmers' Sample (All Villages)

Variables (1)	Participation in formal credit (2)	Operated area (3)	Caste status (4)	Education (5)	Percentage of area under tenancy (6)	Worker-dependent ratio (7)	Cropping intensity (8)	Use of modern inputs (9)	Overdues (10)
Participation in formal credit	1 00	0 06	-0 17 *	0 14 **	0 03	-0 05	0 06	0 12 **	-0 13 **
Operated area (in acres)		1 00	-0 34 *	0 24 *	-0 15 *	-0 02	0 12 **	0 58 *	0 02
Caste status (lower caste and tribals = 1 , others = 0)			1 00	-0 50 *	0 22 *	0 10	-0 03	-0 39 *	0 02
Education (No of years of schooling)				1 00	-0 29 *	-0 08	-0 07	0 22 *	0 03
Percentage of area under tenancy					1 00	0 03	-0 04	-0 03	-0 05
Worker-dependent ratio						1 00	-0 13 **	0 06	-0 06
Cropping intensity							1 00	-0 06	0 31 *
Use of modern inputs (in Rs)								1 00	0 03
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 4.12 : Correlation Matrix for Variables Influencing Access to Formal Credit in Surveyed Villages
All Households (All Villages)

Variables (1)	Participation in formal credit (2)	Operated area (3)	Caste status (4)	Education (5)	Percentage of area under tenancy (6)	Worker-dependent ratio (7)	Cropping intensity (8)	Use of modern inputs (9)	Overdues (10)
Participation in formal credit	1 00	0 15 *	-0 25 *	0 20 *	0 10	-0 10	0 07	0 19 *	-0 09
Operated area (in acres)		1 00	-0 45 *	0 34 *	-0 04	-0 09	0 12 **	0 64 *	0 05
Caste status (lower caste and tribals = 1 , others = 0)			1 00	-0 57 *	0 05	0 16 *	-0 04	-0 49 *	-0 03
Education (No of years of schooling)				1 00	-0 15 *	-0 14 **	-0 05	0 33 *	0 07
Percentage of area under tenancy					1 00	-0 03	-0 03	0 07	-0 02
Worker-dependent ratio						1 00	-0 11	-0 02	-0 07
Cropping intensity							1 00	-0 04	0 31 *
Use of modern inputs (in Rs)								1 00	0 06
Overdues (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table : A 4.13 : Correlation Matrix for Variables Determining Amount of Formal Loan in Surveyed Villages Marginal and Small Farmers' Sample (All Villages)

Variables	Amount of formal loan	Caste Status	Education	Operated area	Percentage of area under tenancy	Worker dependent ratio	Cropping intensity	Value of modern inputs used	Rate of interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Amount of formal loan	1 00	-0 20 **	0 23 *	0 31 *	-0 17 **	0 05	0 12	0 52 *	0 19 **
Caste status (Lower caste and tribals = 1, others = 0)		1 00	-0 52 *	-0 33 *	0 28 *	0 19 **	-0 21 **	-0 27 *	-0 06
Education (No of years of schooling)			1 00	0 17 **	-0 39 *	-0 18 **	0 16 **	0 12	0 09
Operated area (in acres)				1 00	-0 08	-0 01	-0 19 **	0 63 *	0 20 **
Percentage of area under tenancy					1 00	0 06	0 01	0 03	-0 03
Worker dependent ratio						1 00	0 01	0 09	0 05
Cropping intensity							1 00	0 27 *	-0 03
Value of modern inputs used								1 00	0 15
Rate of interest									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table : A 4.14 : Correlation Matrix for Variables Determining Amount of Formal Loan in Surveyed Villages Medium and Large Farmers' Sample (All Villages)

Variables	Amount of formal loan	Caste Status	Education	Operated area	Percentage of area under tenancy	Worker dependent ratio	Cropping intensity	Value of modern inputs used	Rate of interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Amount of formal loan	1 00	-0 23	-0 04	0 11	-0 37 **	0 27	0 03	0 04	0 16
Caste status (Lower caste and tribals = 1, others = 0)		1 00	-0 19	-0 12	0 21	-0 18	-0 28	-0 32 **	-0 16
Education (No of years of schooling)			1 00	0 04	-0 34 **	-0 29	0 22	0 18	0 12
Operated area (in acres)				1 00	-0 30	0 12	-0 36 **	-0 01	-0 23
Percentage of area under tenancy					1 00	0 07	0 16	0 13	-0 13
Worker dependent ratio						1 00	-0 11	-0 04	-0 24
Cropping intensity							1 00	0 86 *	0 17
Value of modern inputs used								1 00	-0 04
Rate of interest									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table : A 4.15 : Correlation Matrix for Variables Determining Amount of Formal Loan in Surveyed Villages
All Farmers' Sample (All Villages)

Variables	Amount of formal loan	Caste Status	Education	Operated area	Percentage of area under tenancy	Worker dependent ratio	Cropping intensity	Value of modern inputs used	Rate of interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Amount of formal loan	1 00	-0 22 *	0 17 **	0 32 *	-0 22 *	0 12	0 03	0 42 *	0 21 *
Caste status (Lower caste and tribals = 1, others = 0)		1 00	-0 47 *	-0 23 *	0 27 *	0 12	-0 18 **	-0 29 *	-0 10
Education (No of years of schooling)			1 00	0 12	-0 38 *	-0 20 *	0 15 **	0 15 **	0 10
Operated area (in acres)				1 00	-0 12	0 07	-0 32 *	0 52 *	0 10
Percentage of area under tenancy					1 00	0 06	0 04	0 03	-0 06
Worker dependent ratio						1 00	-0 03	0 08	-0 04
Cropping intensity							1 00	0 23 *	-0 01
Value of modern inputs used								1 00	0 13 **
Rate of interest									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table : A 4.16 : Correlation Matrix for Variables Determining Amount of Formal Loan in Surveyed Villages
All Households (All Villages)

Variables	Amount of formal loan	Caste Status	Education	Operated area	Percentage of area under tenancy	Worker dependent ratio	Cropping intensity	Value of modern inputs used	Rate of interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Amount of formal loan	1 00	-0 22 *	0 17 **	0 32 *	-0 21 *	0 12	0 05	0 42 *	0 21 *
Caste status (Lower caste and tribals = 1; others = 0)		1 00	-0 52 *	-0 28 *	0 20 *	0 12	-0 34 *	-0 34 *	-0 12
Education (No. of years of schooling)			1 00	0 17 **	-0 32 *	-0 19 *	0 26 *	0 20 *	0 12
Operated area (in acres)				1 00	-0 09	0 07	-0 15 **	0 54 *	0 11
Percentage of area under tenancy					1 00	0 05	0 11	0 06	-0 05
Worker dependent ratio						1 00	-0 03	0 08	-0 03
Cropping intensity							1 00	0 30 *	0 03
Value of modern inputs used								1 00	0 14 **
Rate of interest									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.1 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages Marginal and Small Farmers' Sample (Advanced Villages).

Variables	Linkage	Operated area	Caste status	Education	Percentage of area under tenancy	Proportion of male workers to total workers	Value of non-land income generating assets	Ratio of non-farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked household, 0 Others)	1 00	-0 18 **	-0 03	-0 08	0 33 *	-0 16 **	-0 09	-0 09
Operated area (in acres)		1 00	-0 22 *	0 14	-0 06	0 12	0 43 *	-0 22 *
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 24 *	0 12	-0 09	-0 18 **	-0 01
Education (No of years of schooling)				1 00	-0 29 *	0 03	0 02	0 15
Percentage of area under tenancy					1 00	-0 10	0 01	-0 09
Proportion of male workers to total workers						1 00	0 08	-0 28 *
Value of non-land income generating assets (in Rs)							1 00	-0 12
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.2 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages Medium and Large Farmers' Sample (Advanced Villages).

Variables	Linkage	Operated area	Caste status	Education	Percentage of area under tenancy	Proportion of male workers to total workers	Value of non-land income generating assets	Ratio of non-farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked household, 0 others)	1 00	-0 08	—	-0 47 *	0 30	—	0 30	0 04
Operated area (in acres)		1 00	—	0 07	-0 06	—	0 54 *	-0 18
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	—	—	—	—	—
Education (No of years of schooling)				1 00	-0 35 **	—	-0 11	0 24
Percentage of area under tenancy					1 00	—	-0 20	-0 11
Proportion of male workers to total workers						1 00	—	—
Value of non-land income generating assets (in Rs)							1 00	-0 15
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.3 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages All Farmers' Sample (Advanced Villages).

Variables	Linkage	Operated area	Caste status	Education	Percentage of area under tenancy	Proportion of male workers to total workers	Value of non-land income generating assets	Ratio of non-farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked household; 0 others)	1 00	-0 24 *	0.02	-0 17 *	0 35 *	-0 15	-0 07	-0.06
Operated area (in acres)		1.00	-0.26 *	0.16 **	-0.20 **	0.11	0 44 *	-0 17 **
Caste status (Lower caste and tribals = 1; Others = 0)			1 00	-0 23 *	0 16 **	-0 10	-0 21 *	0 02
Education (No. of years of schooling)				1 00	-0 31 *	0 03	0 02	0 13
Percentage of area under tenancy					1 00	-0 11	-0 06	-0 07
Proportion of male workers to total workers						1 00	0 09	-0 29 *
Value of non-land income generating assets (in Rs.)							1 00	-0 13
Ratio of non-farm to farm income								1.00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.4 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages All Households (Advanced Villages).

Variables	Linkage	Operated area	Caste status	Education	Percentage of area under tenancy	Proportion of male workers to total workers	Value of non-land income generating assets	Ratio of non-farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked household, 0 others)	1 00	-0 36 *	0 25 *	-0 31 *	0 22 *	-0 27 *	-0 17 **	-0 09
Operated area (in acres)		1 00	-0 43 *	0 31 *	-0 08	0 26 *	0 50 *	-0 12
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 42 *	-0 03	-0 39 *	-0 33 *	-0 04
Education (No of years of schooling)				1 00	-0 16 **	0 26 *	0 14 **	0 15 **
Percentage of area under tenancy					1 00	0 08	0 02	-0 04
Proportion of male workers to total workers						1 00	0 20 *	-0 08
Value of non-land income generating assets (in Rs)							1 00	-0 10
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.5 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages Marginal and Small Farmers' Sample (Backward Villages).

Variables	Linkage	Operated area	Caste status	Education	Percentage of area under tenancy	Proportion of male workers to total workers	Value of non-land income generating assets	Ratio of non-farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked household, 0 others)	1 00	-0 25 *	0 23 **	-0 27 *	0 05	-0 33 *	-0 05	-0 32 *
Operated area (in acres)		1 00	-0 47 *	0 40 *	0 09	0 28 *	0 55 *	-0 03
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 67 *	0 21 **	-0 32 *	-0 35 *	-0 15
Education (No of years of schooling)				1 00	-0 28 *	0 27 *	0 36 *	0 20 **
Percentage of area under tenancy					1 00	-0 13	0 02	-0 05
Proportion of male workers to total workers						1 00	0 18	0 14
Value of non-land income generating assets (in Rs)							1 00	-0 02
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.6 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages Medium and Large Farmers' Sample (Backward Villages).

Variables (1)	Linkage (2)	Operated area (3)	Caste status (4)	Education (5)	Percentage of area under tenancy (6)	Proportion of male workers to total workers (7)	Value of non-land income generating assets (8)	Ratio of non-farm to farm income (9)
Linkage (1 if linked household, 0 others)	1 00	0 07	0 09	-0 36	-0 07	—	0 03	-0 27
Operated area (in acres)		1 00	-0 26	0 33	-0 42 **	—	0 33	-0 14
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 01	0 35	—	-0 28	-0 09
Education (No of years of schooling)				1 00	-0 43 **	—	-0 06	0 47 *
Percentage of area under tenancy					1 00	—	-0 32	-0 28
Proportion of male workers to total workers						1 00	—	—
Value of non-land income generating assets (in Rs)							1 00	-0 19
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.7 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages All Farmers' Sample (Backward Villages).

Variables (1)	Linkage (2)	Operated area (3)	Caste status (4)	Education (5)	Percentage of area under tenancy (6)	Proportion of male workers to total workers (7)	Value of non-land income generating assets (8)	Ratio of non-farm to farm income (9)
Linkage (1 if linked household, 0 others)	1 00	-0 24 *	0 26 *	-0 32 *	0 04	-0 33 *	-0 16 **	-0 27 *
Operated area (in acres)		1 00	-0 43 *	0 37 *	-0 09	0 26 *	0 73 *	-0 10
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 59 *	0 24 *	-0 34 *	-0 43 *	-0 10
Education (No of years of schooling)				1 00	-0 31 *	0 28 *	0 34 *	0 17 **
Percentage of area under tenancy					1 00	-0 13	-0 07	-0 05
Proportion of male workers to total workers						1 00	0 24 *	0 11
Value of non-land income generating assets (in Rs)							1 00	-0 09
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.8 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages All Households (Backward Villages).

Variables	Linkage	Operated area	Caste status	Education	Percentage of area under tenancy	Proportion of male workers to total workers	Value of non-land income generating assets	Ratio of non-farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked household, 0 others)	1 00	-0.32 *	0 35 *	-0 39 *	-0 05	-0 36 *	-0 25 *	-0 29 *
Operated area (in acres)		1 00	-0 48 *	0 42 *	0 01	0 31 *	0 76 *	-0 06
Caste status (Lower caste and tribals = 1, Others = 0)			1 00	-0 62 *	0 11	-0 39 *	-0 49 *	-0 13
Education (No of years of schooling)				1 00	-0 19 **	0 33 *	0 39 *	0 20 **
Percentage of area under tenancy					1 00	-0 01	0 03	-0 01
Proportion of male workers to total workers						1 00	0 29 *	0 14
Value of non-land income generating assets (in Rs)							1 00	-0 04
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.9 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages Marginal & Small Farmers' Sample (All Villages).

Variables	Linkage	Operated area	Caste status	Education	Percnetage of area under tennancy	Proportion of male workers to total workers	Value of non - land income generating assets	Ratio of non - farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked, 0 Otherwise)	1 00	-0 23 *	0 14 **	-0 19 *	0 20 *	-0 27 *	-0 11	-0 17 *
Operated area (in acres)		1 00	-0 42 *	0 32 *	0 01	0 28 *	0 46 *	-0 13 **
Caste Status (lower caste and tribals =1, Others = 0)			1 00	-0 52 *	0 15 **	-0 33 *	-0 29 *	-0 06
Education (no of years of schooling)				1 00	-0 27 *	0 24 *	0 17 *	0 17 *
Percentage of area under tenancy					1 00	-0 10	0 02	-0 07
Proportion of male workers to total workers						1 00	0 16 *	-0 01
Value of non-land income generating assets (in Rs)							1 00	-0 09
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.10 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages Medium and Large Farmers' Sample (All Vilages).

Variables	Linkage	Operated area	Caste status	Education	Percnetage of area under tennancy	Proportion of male workers to total workers	Value of non - land income generating assets	Ratio of non - farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked, 0 Otherwise)	1 00	0 02	0 09	-0 43 *	0 10	—	0 16	-0 10
Operated area (in acres)		1 00	-0 11	0 16	-0 22	—	0 33 *	-0 16
Caste Status (lower caste and tribals =1, Others = 0)			1 00	-0 06	0 34 *	—	-0 21	-0 06
Education (no of years of schooling)				1 00	-0 40 *	—	-0 02	0 33 *
Percentage of area under tenancy					1 00	—	-0 27 **	-0 19
Proportion of male workers to total workers						1 00	—	—
Value of non-land income generating assets (in Rs)							1 00	-0 14
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.11 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages All Farmers' Sample (All Villages).

Variables	Linkage	Operated area	Caste status	Education	Percnetage of area under tennancy	Proportion of male workers to total workers	Value of non - land income generating assets	Ratio of non - farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked; 0 Otherwise)	1 00	-0 25 *	0 18 *	-0 26 *	0 20 *	-0 27 *	-0 12 **	-0 14 **
Operated area (in acres)		1 00	-0 37 *	0 28 *	-0 14 **	0 23 *	0 46 *	-0 13 **
Caste Status (lower caste and tribals =1, Others = 0)			1 00	-0 48 *	0 20 *	-0 34 *	-0 33 *	-0 04
Education (no of years of schooling)				1 00	-0 31 *	0 24 *	0 18 *	0 14 **
Percentage of area under tenancy					1 00	-0 11 **	-0 07	-0 06
Proportion of male workers to total workers						1 00	0 18 *	-0 02
Value of non-land income generating assets (in Rs)							1 00	-0 11 **
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 5.12 : Correlation Matrix for Variables Influencing Interlinkages in Informal Credit Markets in Surveyed Villages All Households (All Villages).

Variables	Linkage	Operated area	Caste status	Education	Percnetage of area under tennancy	Proportion of male workers to total workers	Value of non - land income generating assets	Ratio of non - farm to farm income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Linkage (1 if linked, 0 Otherwise)	1 00	-0 34 *	0 31 *	-0 36 *	0 09	-0 33 *	-0 20 *	-0 16 *
Operated area (in acres)		1 00	-0 46 *	0 37 *	-0 03	0 30 *	0 51 *	-0 09
Caste Status (lower caste and tribals =1, Others = 0)			1 00	-0 55 *	0 05	-0 42 *	-0 40 *	-0 08
Education (no of years of schooling)				1 00	-0 18 *	0 32 *	0 26 *	0 17 *
Percentage of area under tenancy					1 00	0 02	0 01	-0 03
Proportion of male workers to total workers						1 00	0 24 *	0 03
Value of non-land income generating assets (in Rs)							1 00	-0 08
Ratio of non-farm to farm income								1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 6.1 : Correlation Matrix of the variables Determining Interest Rates for Informal Loans in Surveyed Villages Agricultural Labourers' Sample (All Villages).

Variables (1)	Rate of Interest (2)	Loan Amount (3)	Source of loan (4)	Collateral (5)	Period of loan (6)	Linakage (7)	Caste status (8)	Education (9)	Per capita-income (10)
Rate of interest	1 00	-0 15	0 66 *	0 01	0 54 *	-0 51 *	0 17	-0 11	-0 20
Loan amount (in Rs)		1.00	-0 10	-0 07	-0 13	0 14	-0 05	0 05	0 11
Source of loan (Moneylender = 1, Other = 0)			1 00	0 57 *	0 86 *	-0 55	-0 15	-0 07	-0 23
Collateral (Marketable = 1, Others = 0)				1 00	0 49 *	0 04	-0 36 *	-0 04	-0 14
Period of loan (Unspecified = 1, Others = 0)					1 00	-0 73 *	-0 11	-0 09	-0 29 **
Linkage (Linked Loan = 1, Others = 0)						1 00	0 11	-0 20	0 27 **
Caste status (SC/ST = 1, Others = 0)							1 00	-0 11	0 12
Education (No years of schooling)								1 00	-0 03
Per capita-income (in Rs)									1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 6.2 · Correlation Matrix of the Variables Determining Interest Rates for Informal Loans in Surveyed Villages Marginal and Small Farmers' Sample (All Villages).

Variables (1)	Rate of interest (2)	Loan amount (3)	Purpose of loan (4)	Source of loan (5)	Collateral (6)	Period of loan (7)	Linakage (8)	Operated area (9)	Caste status (10)	Education (11)	Per capita-income (12)
Rate of interest	1 00	0 02	-0 21 *	0 73 *	0 36 *	0 58 *	0 01	-0 19 *	0 15 *	-0 13 **	-0 18 *
Loan amount (in Rs.)		1 00	-0 20 *	0 07	0 01	0 20 *	-0 08	0 04	-0 16 *	0 09	0 13 **
Purpose of loan (Production = 1, Others = 0)			1 00	-0 20 *	-0 11	-0 35 *	-0 08	0 37 *	-0 27 *	0 11	0 02
Source of loan (Money Lender = 1, Others = 0)				1 00	0 39 *	0 72 *	-0 08	-0 06	0 04	0 04	-0 06
Collateral (Marketable = 1, Others = 0)					1 00	0 36 *	0 39 *	-0 06	-0 07	0 08	0 01
Period of loan (Unspecified = 1, Others = 0)						1 00	-0 22	-0 08	-0 04	0 11	-0 09
Linkage (Linked Loan = 1, Others = 0)							1 00	-0 22 *	0 16 *	-0 16 *	-0 09
Operated area (in acres)								1 00	-0 43 *	0 28 *	0 19 *
Caste status (SC/ST = 1, Others = 0)									1 00	-0 53 *	-0 27 *
Education (No years of schooling)										1 00	0 42 *
Per capita-income (in Rs)											1 00

Notes · * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 6.3 : Correlation Matrix of the Variables Determining Interest Rates for Informal Loans in Surveyed Villages Medium and Large Farmers' Sample (All Villages).

Variables (1)	Rate of interest (2)	Loan amount (3)	Purpose of loan (4)	Source of loan (5)	Collateral (6)	Period of loan (7)	Linakage (8)	Operated area (9)	Caste status (10)	Education (11)	Per capita-income (12)
Rate of interest	1 00	0 15	-0 30 *	0 83 *	0 38 *	0 57 *	0 17 **	0 04	-0 13	0 01	0 01
Loan amount (in Rs)		1 00	-0 47 *	0 13	0 11	0 43 *	0 10	-0 12	-0 12	0 05	0 04
Purpose of loan (Production = 1; Others = 0)			1 00	0 26 *	-0 22 *	-0 60 *	-0 01	0 09	0 01	-0 07	-0 08
Source of loan (Money Lender = 1, Others = 0)				1 00	0 43 *	0 63 *	0 14	-0 01	-0 13	0 02	0 04
Collateral (Marketable = 1, Others = 0)					1 00	0 38 *	0 54 *	-0 01	-0 08	-0 16	0 15
Period of loan (Unspecified = 1, Others = 0)						1 00	0 04	-0 10	0 07	-0 01	-0 10
Linkage (Linked Loan = 1, Others = 0)							1 00	0 02	-0 01	-0 30 *	-0 03
Operated area (in acres)								1 00	-0 14	0 13	0 16 *
Caste status (SC/ST = 1, Others = 0)									1 00	-0 07	-0 27 *
Education (No years of schooling)										1 00	0 24
Per capita-income (in Rs)											1 00

Notes . * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 6.4 : Correlation Matrix of the Variables Determining Interest Rates for Informal Loans in Surveyed Villages All Farmers' Sample (All Villages).

Variables (1)	Rate of interest (2)	Loan amount (3)	Purpose of loan (4)	Source of loan (5)	Collateral (6)	Period of loan (7)	Linakage (8)	Operated area (9)	Caste status (10)	Education (11)	Per capita-income (12)
Rate of interest	1 00	0 02	-0 24 *	0 74 *	0 36 *	0 57 *	0 06	-0 18 *	0 14 **	-0 13 **	-0 18 *
Loan amount (in Rs.)		1 00	-0 22 *	0 07	0 02	0 23 *	-0 06	0 05	-0 17 *	0 10	0 13 **
Purpose of loan (Production = 1, Others = 0)			1 00	-0 22 *	-0 13 **	-0 40 *	-0 10	0 28 *	-0 26 *	0 10	0 05
Source of loan (Money Lender = 1, Others = 0)				1 00	0 40 *	0 70 *	-0 02	-0 09	0 04	0 02	-0 06
Collateral (Marketable = 1, Others = 0)					1 00	0 37 *	0 41 *	-0 06	-0 06	0 03	0 03
Period of loan (Unspecified = 1, Others = 0)						1 00	-0 16 *	-0 09	-0 01	0.07	-0 10
Linkage (Linked Loan = 1, Others = 0)							1 00	-0 23 *	0 17 *	-0 21 *	-0 13 **
Operated area (in acres)								1 00	-0 33 *	0 26 *	0 34 *
Caste status (SC/ST = 1, Others = 0)									1 00	-0 46 *	-0 30 *
Education (No years of schooling)										1 00	0 40 *
Per capita-income (in Rs)											1 00

Notes : * and ** indicate significance at 1 and 5 percent levels respectively.

Table A 6.5 : Correlation Matrix of the Variables Determining Interest Rates for Informal Loans in Surveyed Villages All Households (All Villages).

Variables (1)	Rate of interest (2)	Loan amount (3)	Purpose of loan (4)	Source of loan (5)	Collateral (6)	Period of loan (7)	Linkage (8)	Operated area (9)	Caste status (10)	Education (11)	Per capita-income (12)
Rate of interest	1 00	0 02	-0 19 *	0 74 *	0 35 *	0 57 *	0 02	-0 15 **	0 11	-0 10	-0 17 *
Loan amount (In Rs)		1 00	-0 16 *	0 08	0 02	0 24 *	-0 10	0 08	-0 19 *	0 12 **	0 14 **
Purpose of loan (Production = 1, Others = 0)			1 00	-0 15 **	-0 09	-0 28 *	-0 23 *	0 37 *	-0 37 *	0 22 *	0 09
Source of loan (Money Lender = 1, Others = 0)				1 00	0 41 *	0 71 *	-0 08	-0 05	-0 02	0 06	-0 05
Collateral (Marketable = 1, Others = 0)					1 00	0 38 *	0 35 *	-0 03	-0 09	0 04	0 03
Period of loan (Unspecified = 1, Others = 0)						1 00	-0 22 *	-0 03	-0 08	0 12 **	-0 09
Linkage (Linked Loan = 1, Others = 0)							1 00	-0 31 *	0 28 *	-0 30	-0 15 *
Operated area (in acres)								1 00	-0 41 *	0 33 *	0 35 *
Caste status (SC/ST = 1, Others = 0)									1 00	-0 52 *	-0 31 *
Education (No years of schooling)										1 00	0 40 *
Per capita-income (in Rs)											1 00

Notes . * and ** indicate significance at 1 and 5 percent levels respectively.

REFERENCES

Abraham, A. (1985), 'Subsistence Credit : Survival Strategies Among Traditional Fishermen', **Economic and Political Weekly**, Vol. 20, No. 6.

Adams, D.W. and Nehman, G.I. (1979), 'Borrowing Costs and the Demand for Rural Credit,' **Journal of Development Studies**, Vol.15, No.2, January

Ahmed Zia (1989), 'Effective Costs of Rural Loans in Bangladesh', **World Development**, Vol.17, No.3

Ahmed, Z.U. (1982), 'Transaction Costs in Rural Financial Markets in Bangladesh : A Study of Rural Credit Market', Unpublished Ph.D. Dissertation, University of Virginia.

Alam, M.F. (1981), 'Cost of Credit from Institutional Sources in Bangladesh', **Bangladesh Journal of Agricultural Economics**, Vol.4, No.2.

Banik, A. (1993), 'Structure of the Credit Market and its Link with Other Markets : An Analysis of Village Survey Data in Bangladesh', **Indian Economic Review**, Vol.28, No.1

Bardhan, P. and Ashok Rudra (1980), 'Terms and Conditions of Share Cropping Contracts : An Analysis of Village Survey Data in India', **Journal of Development Studies**, Vol.16, No.3, April

Bardhan, P.K. (1979), 'Wages and Unemployment in a poor Agrarian Economy : A Theoretical and Empirical Study', **Journal of Political Economy**, Vol. 87, No 3

——— (1980), 'Interlocking Factor Markets and Agrarian Development : A Review of Issues', **Oxford Economic Papers**, Vol 32, No.1.

——— (1983), "Labour Tying in a Poor Agrarian Economy· A Theoretical and Empirical Analysis', **Quarterly Journal of Economics**, Vol. 98, No 3.

——— (1984), **Land, Labour and Rural Poverty**, Oxford University Press.

Bardhan, Pranab and Ashok Rudra (1978), 'Interlinkage of Land, Labour and Credit Relations: An Analysis of Village Survey Data in East India', **Economic and Political Weekly**, Vol.13, Nos. 6-7

Basu, K. (1983), 'The Emergence of Isolation and Interlinkage in Rural Markets', **Oxford Economic Papers**, Vol. 35.

Basu, K. (1984), 'Implicit Interest Rates, Usury and Isolation in Backward Agriculture', **Cambridge Journal of Economics**, Vol. 8, No. 2.

Bell, C. (1988), 'Credit Markets And Interlinked Transactions', in **Handbook of Development Economics**, Vol.1, Edited by H. Chenery and T.N. Srinivasan, Elsevier Science Publications.

——— (1990), 'Interaction between Institutional and Informal Credit Agencies in Rural India', **The World bank Economic Review**, Vol.4, No.3

Bell, C. and T.N. Srinivasan (1989), 'Interlinked Transactions in Rural Markets : An Empirical Study of Andhra Pradesh, Bihar and Punjab', **Oxford Bulletin of Economics and Statistics**, Vol. 51, No. 1.

Bhaduri, A. (1973), 'A Study of Agricultural Backwardness Under Semi-Feudalism,' **Economic Journal**, Vol.83, No.1.

——— (1977), 'On the Formation of Usurious Interest Rates in Backward Agriculture,' **Cambridge Journal of Economics**, Vol. 1, No 3.

——— (1983), **The Economic Structure of Backward Agriculture**, Macmillan.

——— (1986), 'Forced Commerce and Agrarian Growth,' **World Development**, Vol. 14, No 2.

Bharadwaj, K. (1974), **Production Conditions in Indian Agriculture**, Cambridge University Press.

——— (1985), 'A Note on Commercialisation in Agriculture' in K.N. Raj *et. al.* (eds.), **Essays on the Commercialisation of Indian Agriculture**, Oxford University Press, Delhi.

Bhaumik, S.K. (1993), **Tenancy Relations and Agrarian Development — A Study of West Bengal**, Sage Publications, New Delhi.

Binswanger, H.P. and M.R. Rosenzweig (1984), '**Contractual Arrangements, Employment and Wages in Rural Labour Markets in Asia**', Yale University Press, New Haven.

——— (1986), 'Behavioural and Material Determinants of Production Relations in Agriculture,' **Journal of Development Studies**, Vol. 22, No.3.

Borooah, V. (1980), 'High Interest Rates in Backward Agricultural Communities : An Explanation of Default Hypothesis, **Cambridge Journal of Economics**, Vol.4, No 3.

Bottomley, A. (1963), 'The Premium for Risk as Determinant of Interest Rates in Underdeveloped Rural Areas,' **Quarterly Journal of Economics**, Vol. 77 , No.4.

——— (1975), ' Interest Rates Determination in Underdeveloped Rural Areas,' **American Journal of Agricultural Economics**, Vol. 57, No. 2

Braverman, A and J.E. Stiglitz (1982), 'Sharecropping and the Interlinking of Agrarian Markets', **American Economic Review**, Vol.72, September.

Braverman, A. and J.L Guasch (1984), 'Capital Requirements, Screening and Interlinked Sharecropping and Credit Contracts', **Journal of Development Economics**, Vol.14, April.

——— (1986), 'Rural Credit Markets and Institutions in Developing Countries: Lessons for Policy Analysis from Practice and Modern Theory,' **World Development**, Vol. 14, No. 10/11

Braverman, A. and T.N Srinivasan (1981), 'Credit and Sharecropping in Agrarian Societies', **Journal of Development Economics**, Vol.9.

Chadha, G.K. and S.K. Bhaumik (1992), 'Changing Tenancy Relations in West Bengal : Popular Notions, Grassroot Relations', **Economic and Political Weekly**', May 9 and 16 - 23.

Chandravarkar, A.G. (1965), 'The Premium for Risk as a Determinant of Interest Rates in Underdeveloped Rural Areas: Comment,' **Quarterly Journal of Economics**, Vol. 79

Chattopadhyay, M. and S. Ghosh (1983), 'Tenurial Contracts in a Peasant Movement Belt . Field Survey Data on Naxalbari, Kharibari and Phansidewa Regions', **Economic and Political Weekly**, Vol. 18, No. 26, 25 June.

Chaudhuri, S. and M.R. Gupta (1996), 'Delayed Formal Credit, Bribing and the Informal Credit Market in Agriculture : A Theoretical Analysis', **Journal of Development Economics**, Vol.51.

Christensen, G. (1993), 'The Limits to Informal Financial Intermediation', **World Development**, Vol.21, No.5

Desai M. *et.al.* (1984), '**Agrarian power and Agricultural Productivity in South Asia**', Oxford University Press, Delhi.

Economic and Political Weekly (1997), 'A Statistical Profile of Commercial Banking in India', Vol.32, No.42, October 18-24.

Gadgil, V.M. (1986), 'Agricultural Credit in India : A Review of Performance and Policies', **Indian Journal of Agricultural Economics**, Vol.41, No.3, July-September.

Gangopadhyay, S. and K. Sengupta (1987), 'Usury and Collateral Pricing : Towards an Alternative Explanation', **Cambridge Journal of Economics**, Vol.11, No.1.

Ghate, P. *et. al.* (1992), **Informal Finance**, Oxford University Press, Delhi

Gonzalez Vega, C. (1981), 'Interest Rate Policies, Agricultural Credit and Income Distribution in Latin America', Paper presented at the **2nd International Conference on the Financial Development of Latin America and Caribbeans**, Carabolleda, Venezuela.

——— (1976), 'On the Iron Law of Interest Rate Restrictions : Agricultural Credit Policies in Costa Rica and Other Less Developed Countries, Ph.D. Dissertation, Standford University.

Gupta, M.R. (1991), 'Lender's Risk Theory of Rural Interest Rate : A Statistical Test', **Journal of Quantitative Economics**, Vol.7, No.1, January.

Hill, P. (1986), **Development Economics on Trial**, Cambridge University Press.

Iqbal F. (1988), 'The Determinants of Moneylender Interest Rates : Evidence from Rural India', **Journal of Development Studies**, Vol.24, No.3

Islam, R. and A. Rahaman (1985), 'Agrarian Change Labour Contracts and Interlinked Transactions in Labour, Land and Credit in Rural Bangladesh : A Study with Microlevel data', **ARTEP, Working Paper**, Bangkok.

Jodhka S.S. (1995), 'Who Borrows ? Who Lends ? Changing Structure of Informal Credit in Rural Haryana', **Economic and Political Weekly**, September, 30

Khasnobis, R. and J. Chakravorty (1982), 'Tenancy, Credit and Agrarian Backwardness : Results of a Field Survey', **Economic and Political Weekly**, Vol. 17, No. 13, 27 March.

Kurup, T.V.N. (1976), 'Price of Rural Credit : An Empirical Analysis of Kerala, **Economic and Political Weekly**, Vol.3, July.

Ladman, J.R. (1984), 'Loan Transactions Costs, Credit Rationing and Market Structure : The Case of Bolivia', in D.W. Adams, D.H. Graham and J.D. Von Pischke (Eds.), **Undermining Rural Development with Cheap Credit**, Westview Press, Boulder.

Lele, U.J. (1981), 'Cooperatives and The Rural Poor: A Comparative Perspective,' **World Development**, Vol. 19, No.1.

Lipton, M. (1976), 'Agricultural Finance and Rural Credit in Poor Countries,' **World Development**, Vol. 4, No. 7.

Maddala, G.S. (1992), **Introduction to Econometrics**, Macmillan, New York, 2nd Edition.

Mitra, P. (1983), 'A Theory of Interlinked Rural Transactions', **Journal of Public Economics**, Vol. 20, No. 2

Nehman, G.I. (1973), **Small Farmer Credit Use in a Depressed Community in Sao Paulo, Brazil**, Ph.D. Dissertation, The Ohio State University.

Platteau, J. Ph. and Anita Abraham (1987), ' An Inquiry into Quasi- Credit Constraints : The Role of Reciprocal Credit and Interlinked Deals in Small Scale Fishing Communities,' **Journal of Development Studies**, Vol.23, No.4.

Platteau, J. Ph. et. al. (1985), '**Technology, Credit and Indebtedness in Marine Fishing: A Case Study of Three Fishing Villages in South Kerala**, Hindustan Publishing Co., Delhi.

Rahaman, A. (1979), 'Usury Capital and Credit Relations in Bangladesh Agriculture : Some Implications for Capital Formation and Capitalist Growth', **Bangladesh Development Studies**, Vol.7, No.2.

Rao, C.H.H. (1970), 'Farm Size and Credit Policy,' **Economic and Political Weekly**, Vol. 5, No.52.

——— (1975), **Technological Change and Distribution of Gains in Indian Agriculture**, Macmillan, Delhi.

Rao, J.M. (1980), 'Interest Rates in Backward Agriculture,' **Cambridge Journal of Economics**, Vol.4, No. 2.

Reddy, M.N. Narayana (1992), 'Interlinkages of Credit with Factor and Product Markets : A Study in Andhra Pradesh', **Indian Journal of Agricultural Economics**, Vol.4, No.4, October-December.

Roth, H. (1983), **Indian Moneylenders at Work**, Manohar Publishers, New Delhi.

Sarap, K. (1987), 'Transactions in Rural Credit Markets in Western Orissa, India', **Journal of Peasant Studies**, Vol. 15, No. 1.

Sarap, K. (1990), 'Interest Rates in Backward Agriculture : The Role of Economic and Extra-Economic Control', **Cambridge Journal of Economics**, Vol.14, No.1

——— (1991), 'Collateral and Other Forms of Guarantee in Rural Credit Markets : Evidence from Eastern India', **Indian Economic Review**, Vol.26, No.2

——— (1991), **Interlinked Agrarian Markets in Rural India**, Sage Publications India Pvt. Ltd.

Shahjahan, M. (1968), **Agricultural Finance in East Pakistan**, The Asiatic Press, Dhaka.

Singh, R.D. (1996), 'Female Agricultural Workers' Wages, Male-Female Wage Differentials and Agricultural Growth in a Developing Country, India', **Economic Development And Cultural Change**, Vol. 45, No. 1.

Stiglitz, J. and A. Weiss, (1990), 'Peer Monitoring and Credit Markets', **The World Bank Economic Review**, Vol. 4.

Swaminathan, M. (1991), 'Segmentation, Collateral Undervaluation and the Rate of Interest in Agrarian Credit Markets : Some Evidence from Two Villages in South India', **Cambridge Journal of Economics**, Vol.15, No.2

——— (1993), 'A Note on the Determination of Rural Interest Rates in Less Developed Areas, **Journal of Quantitative Economics**, Vol.9, No.2, July

——— (1993), 'Effects of Modernisation in Rural Credit Markets : A Case Study from Tamil Nadu', **Indian Journal of Agricultural Economics**, Vol.48, No.1, January-March.

Taslim, M.A. (1988), 'Tenancy and Interlocking Markets : Issues and Some Evidence', **World Development**, Vol. 16, No. 6.

Tendulkar S.D. (1983), 'Rural Institutional Credit and Rural Development : A Review Article', **Indian Economic Review**, Vol.18, No.1, January-June.

Visaria, P. (1997), 'Women in The Indian Work Force : Trends and Differentials', **Artha Vijnana**, Vol. 39, No. 1.

Visaria, P. and R. Basant (1994) (eds.), **Non-Agricultural Employment in India**, Sage Publications, New Delhi.

Wharton, C.R. (1961), 'Marketing, Merchandising and Moneylending . A Note on Middleman Monopsony in Malaya', **Malayan Economic Review**, Vol.6, No.1