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Factors Affecting Small Farmers' Access to Institutional Credit in Rural Orissa, India

Kailas Sarap

ABSTRACT

This study uses original survey data from six villages to locate and analyse factors inhibiting small farmers' access to formal credit, including credit supply, bargaining strength, bureaucratic formalities, asset-based lending policies, informal tenancy contracts, extended processing procedures and caste barriers. The survey data confirm a correlation between higher overall transaction costs and smaller farm size, and also between arrearages and larger farm size. The analysis leads to the suggestion that policies should be directed both towards reducing the overall transaction costs of formal loans to small farmers, and towards improved collection processes.

The existence of capital market imperfections in the rural areas of developing countries has engaged the attention of a number of economists and other social scientists (Griffin, 1979; Ladman and Adams, 1978; Lipton, 1976; Ruttan, 1986; Braverman and Guasch, 1986; Eswaran and Kotwal, 1986). An important feature of this market is that access to credit is far easier for some groups than for others. Of late, institutional agricultural credit has been assigned a leading role in rural development efforts in most developing countries, including India. Following technological change and a greater need for credit to small farmers to facilitate their adoption of technology, the question of small farmers' effective access to these institutions is of crucial significance. It has been argued that increased productive credit is essential for the generation of adequate growth of production, and for changing the composition and distribution of production in favour of deficit producers (Lipton, 1976). Additional formal credit is supposed to (a) shift rural borrowing from informal moneylenders to formal institutions;

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(b) encourage increased borrowing for the exploitation of new technology, improved inputs, etc.; (c) provide modern mechanism for income transfer; and (d) lead to increased production and higher income for the rural poor (Donald, 1976; Sinha, 1976). The growth of agricultural output and productivity would increase per capita real income, reducing the risk premium and thereby reducing rural interest rates, which are generally high (Ghatak, 1975, 1977, 1983; Bottomley, 1975; Bottomley and Nudds, 1969). Consequently, it would also weaken the position of the rural moneylenders (Iqbal, 1988).

Despite the conventional wisdom of these expectations, increasing evidence suggests that the above efforts have seldom benefited poorer farmers, since the primary advantage has accrued to large farmers (Gonzalez Vega, 1981; Lele, 1981; Lipton, 1976; Rao, 1970, 1975; Braverman and Guasch, 1986; Egger, 1986). Evidence from these studies suggests that a small proportion of the total number of farmers in rural areas receive loans from institutions, and among those with access to formal credit, a very small group monopolizes a major share of the total volume of credit disbursed. The literature on formal credit contains several important explanations for the fact that formal credit is used to a lesser extent by small and potential (small) borrowers. It has been argued that the urban-biased policies pursued in low-income countries have led to the lower allocation of formal credit to the rural poor (Lipton, 1976). Credit is invariably rationed in terms of the ability to offer collateral (Von Pischke et al., 1983; Rudra, 1982; Binswanger and Sillers, 1983).[1] The formal lenders generally ration credit to small borrowers in order to reduce their transaction cost, which is high for serving several small borrowers (Gonzalez Vega, 1981). The higher borrowing costs incurred by small and potential (small) borrowers, compared to large borrowers, discourages them from approaching the formal credit institutions (Adams and Nehman, 1979; Aron, 1981; Timberg and Aiyar, 1984). There is a fixed cost for each lending and borrowing transaction, which is invariant with respect to loan size. Given the choice, lenders would prefer to give loans to small farmers at the margin only if they can charge the proportionately higher transaction costs of small loans to the small borrowers as either fixed fees or as increased interest (Binswanger and Sillers, 1983). Otherwise lenders may force non-preferred borrowers to incur transaction costs normally absorbed by the lenders themselves as a way of discouraging them from taking

loans (Adams and Vogel, 1986; Desai, 1987). The transaction cost difference, the typical lack of collateral as well as the higher perceived risk of the small farmers because of lack of diversified resources, lead to a bias against them in credit allocation (Braverman and Guasch, 1988; Carter, 1988). Similarly, interest rate restrictions imposed by the goverment inhibit formal lenders from charging higher interest rates on borrowing but induce higher demand for credit from the large borrowers, compel formal lenders to ration credit in such a way as to exclude small farmers from the formal credit market (Gonzalez Vega, 1981). In this case the rate of interest is replaced by the tenders' tendency to favour certain groups of borrowers. The presence of dishonest borrowers (defaulters) drives out the honest ones (those who repay loans) by worsening the terms and conditions of loan contracts. As a result, the market for loans for certain groups of borrowers may be severely restricted (Virmani, 1982: 113). Finally, patronage, arbitrariness and corrupt practices pursued by the financial institutions due to an interplay of political and social factors, further limit the small farmers' access to formal credit (Ladman and Tinnermeir, 1981; Adams and Vogel, 1986; Ghatak, 1977, 1983). In the succeeding sections of this paper some of the above-mentioned problems will be studied using field survey data from the state of Orissa in India, particularly from the borrowers' perspective.

The main focus of this study is on the analysis of the factors limiting the access of small farmers to formal credit in a backward region of Orissa. The borrowing costs associated with formal loans have been estimated to ascertain the extent of the relationship between such costs and farm size. The total credit requirement (both for production and essential consumption purposes) has been estimated, particularly that of small farmers in relation to the existing and the normative level of adoption of HYV technology, to ascertain the extent of the gap in the supply of formal credit to these groups of farmers. The analysis suggests that mere physical access to formal institutions in terms of easy accessibility to small and marginal farmers does not guarantee benefit to them. There is a large gap in the supply of overall credit to small and marginal farmers in relation to their needs. In the next section the main hypotheses advanced, as well as the nature of the data, will be discussed. This will be followed by an analysis of the actual availability of formal credit and factors which adversely affect small farmers in the study area. The credit gap for small and large farmers

has also been estimated. The conclusion suggests the implications of this analysis for policy.

1. DATA AND HYPOTHESES

Data used in this study are based on a field investigation in six villages of Sambalpur district of Orissa state in India. The field investigation was conducted during the year 1981–2 and the data relate to the year 1980–1. Data have been collected from two distinct agroclimatic zones. One zone had canal irrigation and well-developed infrastructure, and the other had rainfed farms and its infrastructure was less developed. A stratified random sampling procedure was adopted to select a sample of 250 farmers from five size groups of holdings. The direct interview method was used to collect data with the help of a suitably designed questionnaire. The formal credit agencies with whom the sample farmers had transactions were also interviewed.

Nearly 72 per cent of the five sample farming households were small and marginal farmers with 5 or fewer acres. A majority of the heads of these households had three to four years of formal education. Further, almost 54 per cent of small farmers belonged to the castes and tribes which are generally ranked lowest in the economic and social hierarchy. The socioeconomic characteristics, such as pattern of landholdings, tenancy, caste and education, clearly reflect the weaker economic status of the majority of these farmers.

The study region is served by a network of primary agricultural credit societies (PACS) commercial banks and land development banks (LDB) providing short, medium (from PACS and commercial banks) and long-term credit (from LDBs) to cultivators. However, a large number of the primary agricultural societies operating in non-irrigated areas are either dormant or non-viable. Further, a majority of the commercial banks are located in urban, semi-urban and irrigated regions of the study area. The short-term credit borrowed from all formal sources per acre of gross cropped area in the region was Rs.96.56 in the reference year as against Rs.233./– from co-operatives alone in the Punjab. Credit borrowed per acre of gross cropped area was rather low in comparison to a developed green revolution region such as the Punjab in the same year.

Hypotheses

Given the supply of credit, a number of factors operate to prevent small farmers from securing adequate loans from formal institutions. First, asset-based lending policies may be expected to discriminate against small farmers. Second, associated transaction costs may deter many small borrowers from going to these institutions. Third, delay in the sanction of loans may lead to the misuse of loans and increase the transaction costs because of the number of visits to the institutions by borrowers. Lastly, and related to the above, the political clout of large farmers in the credit institutions, particularly in co-operatives or decision-making bodies, may indirectly influence the officials to distribute loans to large farmers, their friends and relatives in preference to small and marginal farmers. Since credit is distributed ultimately by junior officials at the grass-root level (PACS) senior officers/directors are likely to pressure junior officers to favour politically influential clients. As a result, the access of small borrowers may be reduced further in these institutions. In general, the following relationships may be seen in the formal credit market.

1. The amount borrowed from the formal institutions may be expected to be positively associated with the farm size after correcting for the percentage of area irrigated and the literacy rate, and negatively with the percentage of area under tenancy and lower caste and tribal households.
2. (i.) Given the social and political clout of large farmers, the time taken for obtaining a loan may be negatively associated with the farm size.
   (ii.) The real costs of borrowing including tips and opportunity costs of time spent (by the borrowers) may also be negatively associated with farm size.
   (iii.) The amount overdue on formal loans may be positively associated with farm size.

Probit analysis has been used to test the first hypothesis and tabular analysis has been used to verify the others.

Empirical Verification

Of the 250 farm households in the sample, 42.8 per cent had borrowed from formal credit institutions in the reference year (Table 1, column 3). The proportion of households borrowing was as low as 11.66 per cent in the first size group and as high as 70 per

Table 1. *Proportion of Formal Loan to Total Loan Borrowed According to Size of Holding in Orissa, 1980–1*

Size of holding (in acres)	Percentage of households in the group[a]	Percentage of farmers borrowing from these institutions	Percentage of formal loan to total loan borrowed	Percentage of formal credit received by the group to total formal credit	Percentage of area owned to total area	Credit obtained per acre of gross cropped area (in Rs.)[b]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0.1– 1.25	24.00	11.66	25.32	1.19	3.70	40.88
1.26– 2.50	22.40	30.36	43.14	5.88	9.12	123.78
2.51– 5.00	25.60	53.13	72.36	14.92	19.53	126.93
5.01–10.00	16.00	70.00	83.00	33.63	25.20	208.37
10.01 and above	12.00	70.00	87.00	44.38	42.45	186.56
Total	100.00	42.80	—	100.00	100.00	—

[a] Gini coefficient of concentration of crop output produced by different size groups of farmers is 0.54. It is 0.59 between columns (2) and (5) and 0.47 between columns (2) and (6).

[b] Average amount borrowed per acre gross cropped area is Rs.168.48.

Source: Field survey.

cent among the last two size groups representing the medium and large farms. It is clear that the proportion of households borrowing from formal institutions increases with an increase in the size of the holding (Table 1, column 3).

The share of total institutional loans among the different groups was very unequal. Of the total amount borrowed, barely 1.19 per cent had been borrowed by the first group of households which accounted for 24 per cent of the total sample of farm households; large farmers accounted for 12 per cent of farm households, and obtained 44.38 per cent of the funds made available through formal loans. This suggests that credit tends to gravitate towards the better-off farmers (see Ghatak, 1983; Sarap, 1987). It should be stressed that the inequality in the distribution of formal credit is more pronounced than the inequality in the ownership of land and crop output among different groups of farm households (Table 1). Clearly, small and marginal farmers had less access to formal credit institutions as compared to medium and large farmers in the survey area, as noted by several authors.

The amount borrowed from formal sources by farm households will be explained with the help of household characteristics using probit analysis.[2]

Personal Characteristics

Credit transactions would depend on households' personal characteristics such as family size, dependency ratio, years of schooling of head of household, caste, the amount of area cultivated and tenurial status. These characteristics are important for two reasons. First, they influence the household's demand for credit. Second, potential leaders are likely to base their assessment of borrowers' creditworthiness on such characteristics. The determinants of inter-household variations of the demand for credit will be evaluated with the help of household characteristics including their resource endowments.

Choice of Variables

The dependent variable is credit obtained per farm household, whether or not the household has borrowed a formal loan. The

dummy dependent variable is 1 if the household has borrowed in the reference year, 0 otherwise.

The independent variables include family size and workers' dependency ratio, two important demographic variables. Among other assets, draught power is important for farmers. One would expect that an ample endowment of draught power would reduce the demand for production credit, since the farmer's demand for hired services would be reduced. Tenancy arrangements in the area are mostly informal, and formal creditors insist on collateral, particularly ownership rights of the land. Credit extended to the household would be negatively influenced by this variable. In a poor region like Orissa the use of modern inputs would depend upon the availability of credit. As such, the demand for credit would be positively influenced by the use of modern inputs by farm households. Whether a farmer is eligible for additonal formal credit would depend on whether he has any outstanding loan that is overdue, and this variable would influence the demand for credit negatively.

Loans are advanced to borrowers on the basis of ownership of land. The general perception by the credit disbursing officials is that plenty of land arguably enhances the probability that enough output will be produced for the farmer to repay the loan without difficulty. Thus, the area operated should be positively related to the demand for credit. Educational status as well as caste may also influence farmers' access to formal credit institutions. Lower caste and tribal households may be discriminated against by the credit disbursing officials because they have fewer outside connections and higher caste decision makers predominate in the credit institutions (especially co-operatives). Thus, the caste variable will be negatively correlated with the demand for credit. Conversely, formal education will have a positive influence on demand for credit.

Table 2 presents the estimated and asymptotic ratios of parameters for the whole sample, as well as for small and large farmers separately.

Many of the parameters have the expected sign and in some cases they are significant at the 5 per cent level or better. For the whole sample, variables like caste, modern inputs, and arrearages carry the expected sign and the coefficients are statistically significant. Similarly, the coefficient of operated area has the expected sign even though the coefficient is not statistically significant. The number of workers per family reduces loan demand and the coefficient is statistically significant.

Table 2. *Probit Regression Estimate: Dummy Dependent Variable: 1 If the Household has Borrowed from Formal Source; 0, Otherwise*

	Coefficients		
Explanatory variables	All farmers' sample[a]	Small farmers' sample	Only large farmers' sample
Operated area (in acres)	0.2532 (1.0422)	0.2954 (2.7257)*	−0.0639 (−1.8224)**
Percentage of area under tenancy	—	−0.0005 (0.0872)	−0.0429 (−2.0727)**
Livestock (in Rs.)	—	0.0003 (1.1474)	−0.0003 (−0.3562)
Family size	−0.0011 (−0.0283)	−0.0569 (−0.9219)	0.0984 (1.5854)***
Workers to family members (ratio)	−0.0095 (−2.1451)*	−0.0081 (−1.5390)***	0.0066 (0.6689)
No. of years of schooling	—	0.0186 (0.3747)	−0.0503 (−1.1491)
Caste status: Lower castes and tribal = 1; 0 otherwise	−0.3772 (−2.0506)**	−0.0757 (−0.3426)	−0.6439 (−1.3355)
Use of modern inputs (in Rs.)	0.0001 (2.2766)*	−0.0003 (−0.1504)	0.0002 (2.1306)**
Arrearages (in Rs.)	−0.0008 (−2.118)**	−0.0001 (−0.8483)	−0.0003 (−0.5871)
Intercept	0.0744	−0.6225	0.1194
Log-likelihood function	−149.15	−94.410	−42.656
Likelihood ratio test	33.7296	25.7668	14.6092
Degree of freedom	6	9	9
Percentage of correct prediction	67	74	67
No. of observations	250	176	74

Asymptotic T statistics are in parentheses.

[a] By omitting some variables percentage of correct prediction of borrowers has not decreased.

* Significant at 1 percent level; ** Significant at 5 per cent level; *** Significant at 10 per cent level.

Source: Field survey.

In the small farmer sample the sign of the coefficient of operated area is in the expected direction and the coefficient is statistically significant. In the large farmer sample the signs of the coefficients of variables like tenancy, family size and modern inputs are in the expected direction and the coefficients are statistically significant. A large family size increases the demand for credit by shifting the household's resources in favour of agricultural activity. The coefficient of operated area carries a negative sign and the coefficient is statistically significant. Other things being equal, an increase in the operated area first increases the demand for credit (as in the case of small farmers and the whole sample) and then reduces it, presumably because of limits to the total amount of credit given to a household and the capacity for self-finance (Bhende, 1986). The coefficient of arrears has a negative sign in all the equations even though the coefficient is not statistically significant.

Among the various influences on the household's demand for loan, operated area, the use of modern inputs, arrearages, caste and the ratio of workers to total family members are important. How successfully does the model predict the observed behaviour of the farmers, particularly with regard to borrowing and not borrowing? Using the criterion that assigns a household to the regime to which it is most likely to belong, a summary comparison of the household's overall success rate in assigning households ranges from 66 to 74 per cent. The percentage of wrong classification of households is not high.

The time taken for short-term loans from date of application to receipt of the last instalment distributed by size of holding is shown in Table 3. It takes marginal farmers nearly a month to obtain the total loan amount, whereas in the case of large farmers it takes less than half that time. Even after the loan has been sanctioned the small farmers have to wait for a few weeks before they can collect it. It is therefore clear that the time taken for obtaining formal short-term loans is inversely related to the size of holding. It may be noted that long-term loans may be expected to take even more time (see George et al., 1985) because of numerous formalities and procedures, such as establishing ownership or tenancy status, and visits of technical personnel to the sites. Long-term loans have not been considered here because of the extremely small number of cases.

Table 3. *Delivery of Formal Credit According to Time Taken and Size of Holdings in Orissa, 1980–1.*

Size of holding (in acres)	Days taken to get the loan sanctioned	Days between the receipt of in-kind and cash loans	Total days taken from the day of application to getting total loan
0.1 - 1.25	15	17	32
1.26- 2.50	12	13	22
2.51- 5.00	10	14	24
5.01-10.00	8	9	17
10.01 & above	7	7	14

Source: Field survey.

Borrowing Cost and Demand for Formal Credit

The effective price from the borrowers' point of view is the real cost including interest and other charges. It may vary between different groups of borrowers and between areas with varying levels of development of formal credit institutions. In areas with poorly developed infrastructural and banking facilities the borrowers have to travel longer distances and spend more time in getting a loan. Further, the cost of obtaining a loan will depend upon the administrative structure, as well as procedures and norms followed by the formal lending institutions (Yudelman, 1976). For instance, a new borrower approaching a commercial bank for a loan is required to obtain a clearance certificate from the co-operative to which he belongs, even though he may not be a member. In such a situation the borrower has to contact more than one institution situated in different places and often miles apart, resulting in higher transaction costs, even though eventually the loan is obtained only from one institution. The borrower's time, travel expenses and costs incurred for getting a guarantor or a consigner can be substantial. Many small and new borrowers are required to visit the formal institutions several times to negotiate the loan, withdraw a part of the loan, make payments in instalments, etc. These visits often involve waiting for hours and travelling long distances. Lost work hours acquire significance, particularly when loan transactions are contracted during the planting, weeding or harvesting seasons when

the opportunity costs of the borrower's time are high (Adams and Nehman, 1979; Adams and Vogel, 1986). Since a major part of loans sanctioned by co-operatives is given in kind (fertilizer) while cash components are provided separately,[3] many small and new borrowers try to get their choice variety of fertilizer (rather than accept lower-quality goods) by making several trips, travelling again to receive the cash component of the loan. This problem becomes acute when large farmers, who have influence on co-operative officials, manage to corner the choice variety of fertilizer immediately after its arrival. Lastly, borrowers have to pay the stipulated interest charges for the duration of the loan.

Procedure for the Estimation of Transaction Cost

The transaction costs of formal loans for different groups of borrowers in the survey year have been estimated. Several items with cost have been included; member's registration and identification fee (new members), land record identification fee, cost involved in getting the borrower's farm inventory varified by the loan supervisor/technician, borrower's travelling expenses incurred in negotiating, acquiring and repaying the loan, taking a guarantor or a consigner to the institutions. The opportunity costs of the borrower's time used in negotiating the loan have also been included. The nominal interest charges for the period of the loan have also been taken into account.

The time cost of one day has been evaluated as equivalent to one day of wage labour and calculated at the wage rate prevailing while the borrower spent time in the process of acquisition and repayment of the loan. This has been done because during these periods the possibility of getting wage employment is very high. The duration of the loan is six months in double-cropped areas and one co-operative year in single-cropped areas. Further, the transaction costs for the borrowers, both in irrigated and non-irrigated areas, have been calculated and standardized for one year. Since more than four-fifths of the total borrowing of the households consists of short-term loans only, the derived transaction cost in relation to the size of the holding and the size of the loan are presented in Tables 4 and 5 respectively.

It is interesting to note that the average transaction cost decreases with an increase in the size of the holding (Table 4, column 3). There

is also a systematic fall in the proportion of transaction cost in relation to the size of the loan (Table 4, column 6). The effective rate of interest (nominal rate of interest plus the transaction cost) decreases with an increase in the size of the holding (column 7), even though the rate of decline after the second size group is smaller. It is interesting to note that the effective rate of interest paid by the first group of borrowers is almost twice the nominal rate of interest (12 per cent) charged by formal institutions in the survey year. There is a wide variation in the transaction costs (coefficient of variation is 0.88) across the different groups. The actual loan transaction costs and the calculated interest payments for various loan size groups are presented in Table 5. As can be seen from Table 5, interest costs decrease sharply with an increase in the size of the loan. Interest costs represent less than half of the total cost of the loan for the smallest loan. It is more than 90 per cent in the case of a large loan, after the 3000–4000 size group of loan. The effective annual cost of borrowing as a percentage of the total amount borrowed is shown in Table 5, column 6. As can be seen, the rates decline sharply as the size of the loan increases. A loan of Rs.280 incurred annualized borrowing costs equivalent to 26.46 per cent. For the same period, borrowers of formal loan worth Rs.3550 paid an effective rate of interest of only 12.97 per cent, which is barely 0.97 per cent higher than the interest charged.

Clearly, small and marginal farmers have to incur extra costs (besides the nominal rate of interest) in the process of obtaining a loan from the formal institution (see also George et al., 1985). This may deter many other (new) small borrowers from approaching these institutions, as noted by Adams and Nehman (1979).

Political influence in management has its impact on small farmers through linkages or direct influence in the decision-making bodies of formal institutions (especially co-operatives) by the politically dominant large farmers which may indirectly influence the officials to disburse loans in favour of their relatives and political allies. Such influence in co-operatives and, the allocation of benefits to large farmers and their friends, relatives and political allies have been referred to in a number of studies[4] (Lele, 1981; Benjamin, 1981: 114–15). The ability of large farmers to exercise such control is explained by their greater political influence, higher level of education and greater commercial acumen, resulting in their greater understanding of the management issues and the means of control. This is reflected in their overwhelming representation on boards of

Table 4. *Cost of Borrowing (Short Term) from the Formal Credit Sources in Orissa, 1980–1*

Size of holding (in acres) (1)	Average amount of loan (in Rs.) (2)	Average transaction cost (in Rs.) (3)	Interest charges for twelve months (in Rs.) (4)	Total cost of loan (in Rs.) (5)	Average transaction cost as percentage of average amount of loan (6)	Average cost of loan as percentage of average amount of loan (7)
Up to 1.25	581.00	56.75	69.72	126.47	9.77	21.77
1.26- 2.50	1240.00	49.62	148.80	198.42	4.00	16.00
2.51- 5.00	1629.37	51.10	195.52	246.62	3.14	15.14
5.01–10.00	3665.03	38.56	439.91	478.47	1.05	13.05
10.01 and above	8075.00	45.56	969.00	1014.56	0.56	12.56
Average	3140.61	46.62	376.87	423.49	1.48	13.48
Coefficient of variation	—	—	—	—	0.88	0.20

Source: Field survey.

Table 5. *Cost of Borrowing of Formal Loan by Farm Households According to Size of Loan in Orissa, 1980–1*

Loan size group (in Rs.) (1)	Average size of loan (in Rs.) (2)	Total cost (Transaction cost plus interest cost) (in Rs.) (3)	Transaction cost as percentage of total cost (4)	Interest cost as percentage of total cost (5)	Total cost as percentage of loan (6)	Transaction cost per Rs. 100 of loan (in Rs.) (7)
Up to 500	280	74.29	54.77	45.23	26.53	14.53
500–1000	858	157.58	34.66	65.34	18.37	6.37
1000–1500	1213	207.50	29.85	70.15	17.11	5.11
1500–2000	1893	276.61	17.88	82.12	14.61	2.61
2000–2500	2300	326.66	15.51	84.49	14.20	2.20
2500–3000	2875	383.88	10.13	89.87	13.35	1.35
3000–4000	3550	460.53	7.50	92.50	12.97	0.97
4000–5000	4660	596.83	6.30	93.70	12.81	0.81
5000–6000	5960	765.00	6.51	93.49	12.84	0.84
6000–10000	8950	1120.66	4.16	95.84	12.52	0.52
10000 and above	14246	1778.85	3.89	96.11	12.48	0.48

Source: Field survey.

Table 6. *Percentage of Defaulters and Overdues of Formal Loan in Orissa, 1980–1*

Size of holding (in acres) (1)	Defaulters as percentage of total borrowers (2)	Average amount of overdues per defaulter (in Rs.) (3)	Overdues as percentage of total loan outstanding by the group (4)	Percentage of loan defaulted by the group to total loan defaulted (5)
Up to 2.50	88	1133	75.53	11.03
2.51– 5.00	68	1495	53.50	15.94
5.01–10.00	25	3278	18.52	10.64
10.01 & above	71	8971	80.59	62.39
Total	65	3081	53.04	100.00
Up to 5.00	81	1238	50.25	26.97
5.01 and above	47	6849	54.15	73.03

Source: Field survey.

directors and in other positions (as in the survey area) and their frequent, overt role in the approval of credit applications of individuals with whom they have kinship ties or political connection (Thorner, 1964; Mitra, 1971; Ghatak, 1983). It is interesting to note that, due to the loopholes in the laws of the co-operative institutions, non-farmers (like traders, contractors, school teachers and lawyers who own some land) have been taking an active interest in co-operative management in the survey area[5], sometimes representing small farmers on the board of directors. While it is not possible to demonstrate empirically, there is a high probability that co-operative loans meant for particular target groups are diverted for other purposes by these office bearers. As a result, genuine small farmers with cultivating interests are excluded from these boards as well as from credit disbursal (Sen, 1975: 140–3).

The issue of arrears will now be discussed. The proportion of default is high among marginal and small farmers, low among medium farmers and high among large farmers (Table 6). However, the average amount defaulted increases with the increase in the size of the holding. Although arrears as a percentage of loans is also very high among the very small holdings, owing to their economic vulnerability, the absolute amount involved is negligible because their access to institutional credit itself is very limited relative to that of large farms. It is revealing that 42 per cent of the total loan outstanding against large farmers (size group 10.01 acres and above) was for more than five years, a clear case of wilful default (also see Dadhich, 1971; Bottomley, 1975). This may be because their influence in co-operative institutions has enabled them to avoid repayment. Almost 62.39 per cent of the total overdues of the sample farm households is accounted for by the large farms (also see James, 1982). This observation is in contrast to the findings of Ghatak (1983).[6]

Clearly, small and marginal farmers, including tenant farmers, have lower access to formal credit institutions in the survey area because of the asset–based and caste-biased lending policies of these institutions. Meanwhile, the political influence of large farmers ensured their access to these institutions, and enhanced their ability to default (Von Piscke et al., 1983). A variety of bureaucratic and procedural measures followed by the formal institutions increased the effective rate of interest (transaction costs plus nominal rate of interest) which may have discouraged small and new borrowers from approaching these institutions. Further, the trust reposed in

these institutions, particularly in the co-operatives, has weakened due to occasional embezzlement of funds by co-operative officials.[7] For instance, in the district of Sambalpur where the study area is situated, the Assistant Registrar Co-operatives had initiated embezzlement proceedings against 10,609 PACS officials.[8] Such corrupt practices have adversely affected the trust of the borrowers, and have increasingly alienated genuine borrowers (current and/or potential) from these institutions.

2. THE CREDIT GAP

In this section the focus is on the potential demand for production credit at three levels of adoption of technology for the sample farms, with special reference to small farmers. The levels are: the current rate of adoption, large farmers' rate of adoption and normative (recommended) rate of adoption of production technology. Further, total credit needs including production credit at the present rate of adoption and consumption credit at poverty line requirement for small and marginal farmers have also been estimated. This will indicate the extent of credit supply from formal institutions in relation to the actual and potential credit needs of small farmers at different rates of adoption of technology, as well as the minimum consumption requirements of these farmers.

Even though small and marginal farmers are aware of the HYV-led technology in the survey area, their adoption levels are much lower than average. This is evident from the lower current farm expenditure per acre, particularly in the case of marginal and small farmers (Table 7) in the survey area. In view of the prevailing level of adoption, small farmers' demand for production credit from formal institutions may be much lower than their potential demand.

While calculating the current and potential demand for production credit, the actual area devoted to modern and traditional varieties of paddy grown in the survey area have been taken into consideration. In irrigated areas, improved as well as HYV paddy is grown in kharif season, and HYV paddy is grown in rabi session. In non-irrigated areas a higher proportion of land is devoted to traditional varieties of paddy. The use of improved varieties of paddy is more common among medium and larger farmers. It is assumed that credit to the extent of at least 50 per cent of the paid out costs would be required to help small and marginal farmers to adopt

Table 7. *Paid-out Cost per Acre of Operated Area According to Size of Holding in Orissa, 1980–1*

Size of holding (in acres) (1)	Paid out cost per acre of gross cropped area (in Rs.) Irrigated area Kharif (2)	Irrigated area Rabi (3)	Non-irrigated area Kharif (4)
0.1 – 1.25	325	349	313*
1.26– 2.50	325	292	254
2.51– 5.00	348	407	210
5.01–10.00	560	556	247
10.1 and above	572	629	315

* The higher amount as compared to other size groups of farmers is due to the purchase of all inputs except labour.
Source: Field survey.

HYV-led technology at the potential level. In the case of large farmers, this figure is up to 25 per cent of the total paid out costs. For calculating the minimum consumption expenditure, the poverty line[9] expenditure (at 1980–81 prices) per year is taken to be Rs.1020 per adult and Rs.510 per child. On the basis of these assumptions the production and total required expenditure for small and large farmers at different rates of adoption of technology have been calculated, because income levels are partly dependent upon the adoption level. These have been compared with the production and consumption credit supplied by formal institutions,[10] and the production and consumption credit for small farmers has been estimated.

Size-wise estimates of current and potential demand, for production credit, both for irrigated and non-irrigated areas, are shown in Table 8. It is interesting to note that there is a large gap between the demand (current as well as potential) and supply of formal credit in both irrigated and non-irrigated areas.

While 64.62 per cent of the credit needs at the present rate of adoption of small farmers (up to 5.00 acres) in irrigated areas has been supplied by formal sources, 44.11 per cent was supplied in non-irrigated areas (Table 8). On the other hand, medium and large farmers (above 5.01 acres) have obtained credit to the tune of 160.79 per cent in irrigated areas and 96.37 per cent in non-irrigated areas,

Table 8. *Supply of Formal Credit in Relation to Production Costs at Different Level of Adoption of Technology and Total Credit Needs by Different Size Groups of Farmers in Irrigated and Non-irrigated area in Orissa, 1980-1*

Size of holding (in acres)	Irrigated area: Percentage supply of formal credit to cost of production at				Non-irrigated area: Percentage supply of formal credit to cost of production at			
	Present rate of adoption	Large farmers' rate of adoption	Recommended rate of adoption	Present rate of adoption and essential consumption needs	Present rate of adoption	Large farmers' rate of adoption	Recommended rate of adoption	Present rate of adoption and essential consumption needs
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
0.1–2.50	63.70	43.14	35.60	14.64	38.96	36.90	20.52	5.17
2.51–5.00	65.12	54.12	37.25	18.14	49.54	46.44	21.55	4.71
5.01–10.00	174.42	174.42	147.94	—	111.41	111.41	57.17	—
10.01 and above	152.62	152.62	126.03	—	89.63	89.63	53.13	—
Up to 5.00	64.62	49.69	36.65	16.74	44.11	41.58	21.07	4.91
5.01 and above	160.79	160.79	135.10	—	96.37	96.37	54.51	—

Source: Field survey.

of the credit needs at the present rate of adoption. In the study region there were several cases where the extra money received by large farmers was mostly utilized for relending to small and marginal farmers and landless labourers, as well as for conspicuous consumption during social functions, etc. There is a large gap in the supply of credit and the necessary amount required for adopting the new technology at the potential level. The supply of production credit was 36.65 per cent and 21 per cent for irrigated and non-irrigated areas respectively, of the credit needs of small farmers. On the other hand, these proportions for medium and large farmers in irrigated and non-irrigated areas were 135 per cent and 54.51 per cent respectively. Thus, it is clearly evident that there is a large gap in the supply of credit in relation to the requirement at current and potential rates of adoption, in both irrigated and non-irrigated areas as far as small farmers are concerned. But this gap is wider in the non-irrigated backward areas as compared to the irrigated areas (see also Pany, 1985). Thus, even when production credit demand alone is considered, there is a substantial gap in supply for small farmers. It is noteworthy that even at the present supply of credit, small and marginal farmers could have got more had there been a proper allocation of credit to them.

The total credit requirement (both production and necessary consumption) for small farmers has been estimated. The total demand for credit would be total production and consumption expenditure plus net informal borrowing minus total income. The assumption is that net borrowing (the total informal loan borrowed minus the total loan repaid) is necessary for these households for essential consumption. The supply of formal credit as a percentage of total credit requirement is shown in Table 8 (columns 5 and 9), for irrigated and non-irrigated areas respectively. It is clear that barely 4.91 per cent of the total credit requirement of small farmers was met by formal institutions in non-irrigated areas, whereas 16.74 per cent of the requirement was met in the irrigated areas. This confirms the poor performance of formal credit institutions in the supply of credit to small and marginal farmers (see also Ghatak, 1983).

CONCLUSIONS

This study examined the determinants of small farmers' access to formal credit in rural India and has located what appear to be

several factors inhibiting small farmers from securing adequate amounts of both production and consumption credit, despite the presence of a number of formal credit institutions in the study area. Evidently, the mere existence of credit institutions does not guarantee that small farmers will benefit from them. Given the supply of credit, the lower bargaining strength of small farmers vis-a-vis large farmers, the bureaucratic and procedural formalities required, and the asset-based lending policies pursued by financial institutions, coupled with the corrupt practices of officials especially in the co-operatives, work adversely against the rural poor (see Ghatak, 1983). The smaller size of landholdings, the informal and oral nature of tenancy contracts, illiteracy and lower caste status also have an adverse effect on the access of small farmers to formal credit institutions. Some of these factors also contributed to higher transaction costs with the formal lending and delay in the distribution of credit. The higher transaction costs not only increase the effective rate of interest but also deter (potential) small borrowers from approaching these institutions for credit (see Adams and Nehman, 1979).

Further, the dominance of large farmers in the decision-making bodies of these institutions (especially co-operatives) appears to have influenced the officials in the disbursal of credit in favour of large farmers[11] and their allies in the study region. Besides, their dominant economic and social status also seems to have increased the probability of wilful default of loans from these institutions (see Bottomley, 1975).

It is clear that formal lenders have not been in a position to replace informal lenders[12] with regard to small borrowers, even with a fairly widespread network of credit institutions in the study area. Thus, merely ensuring physical access by locating a branch of a credit institution in a village without restructuring its management to make it more democratic and broad-based with proper representing of small borrowers belonging to lower castes (as noted by Ghatak, 1977, 1983; Sen, 1975) is not enough to ensure effective access of formal credit to the rural poor.

Policies have to be directed to reduce the transaction costs of a loan for equity reasons (Adams, 1985) and to reduce the influence of large farmers in the credit institutions. The viability of credit institutions depends on their success in recovering loans. Strong punitive measures (against wilful defaulters) and a proper set of incentives have to be implemented to induce high repayment rates. Given the aspirations of the government, which looks to rural agents for votes, stringent measures for the recovery of loans are unlikely. However, effective measures ought to be taken to improve the productivity of small farmers through proper supervision and guidance of such borrowers and by ensuring timely provision of adequate amounts of credit and other inputs.

NOTES

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1. The amount of working capital a farmer can mobilize depends on the amount of land owned, which is often a good proxy for total wealth and therefore for the ability to offer collateral to lenders.

2. In writing this section I have benefited from the ideas presented in Bell and Srinivasan (1985).

3. It has been argued that such allocation of purpose-specific and tied credit, which is generally based on non-market rationing, undercuts one important property of finance, i.e. fungibility (Iqbal, 1983; Von Pischke et al., 1983).

4. Ghatak (1977) calls it mismanagement of the co-operative societies.

5. For example the composition of the board of directors in one of the primary co-operative societies is outlined in the following table (p. 304).

6. Ghatak (1977) does not talk about wilful default of loan especially by large farmers. In such a situation the positive relationship between income and repayment of the loan which he has observed may become weak. Further, it is difficult to say that farmers with higher incomes will have less arrears. Elsewhere a significant positive relationship between the operated area (which is roughly a proxy for income a household will have, other things being the same) and arrears from formal institutions has been observed (see Sarap, 1987).

7. It has been alleged by some borrowers that officials falsely inflate the amount of loan taken by current borrowers. Further, they may manipulate the account of loan and appropriate the amount themselves.

8. Office of the Deputy Registrar, Co-operative Societies, Sambalpur, Orissa.

9. The estimate is derived by drawing poverty line at Rs.85 per capita per month at 1980–1 prices corresponding to a daily calorie requirement of 2400 per person in the rural area. For details on the poverty line see Bardhan (1973).

10. In the absence of minimum consumption requirements, the farm household may use formal credit for consumption purposes (Lipton, 1976).

11. Some writers have advocated raising the nominal rate of interest on formal loans so that large farmers may reduce their borrowing from this sector and the fund may, in turn, be allocated to small farmers (Adams and Nehman, 1979; Adams, 1985; Adams and Vogel, 1986; Iqbal, 1988).

12. Iqbal (1988) noted that the growth of the formal lending sector has injected

Composition of the Board of Directors of the Attabira PACS

Member	Farm size	Other occupation	Education	Loan taken during sample year A*	Loan taken during sample year B†
K. Padhi (FC) (President)	S	Contractor	College	MT Rs.3000 to purchase cow	Subsidy on cow loan
B. Swain (FC)	S	High school teacher	College	ST Rs.2000 MT Rs. 3000 to purchase cow	MT Rs.3000 subsidy on cow
Biswanath Sarap (FC)	L	Goldsmith	High school	ST Rs.8000	ST Rs.8000 MT Rs.3000
Danapati Sahu (FC)	L	—	Primary	ST Rs.3000	ST Rs.3000
Kishor Pradhan (FC)	L	—	Primary	ST Rs.3000	ST Rs.4000
Hira Lal Meher (BC)	S	Weaver	Primary	ST Rs.2000 MT Rs.3000	NA
Palau Prasad (BC)	S	Barber	Primary	ST Rs.2000 MT Rs.3000	ST Rs.4000
Linga Sahu (FC)	S	—	Upper primary	NA	ST Rs.2000

Notes: ST = Short term; MT = medium term; S = small farmer; L = large farmer; FC = forward caste; BC = backward caste; NA = not applicable (not a member of the Board during the period concerned).

* Sample year A is the period 1977–8 during the term of office lasting from 28 August 1973 to 30 January 1978.

† Sample year B is the period 1980–1 during the term of the office lasting from 31 March 1978 to 16 April 1981. Power of the Board of Directors to manage the PACS was superseded by the state Government before its term was over and the Assistant Registrar (Co-operatives) became the Administrator of the PACS.

Source: Field survey.

competition among formal and informal lenders and reduced the monopoly power of the latter. But given the interplay of a variety of factors at the level of borrowers and lenders; the growth of the formal sector has benefited the rural poor least, as is the case in the study area. As a result the rate of interest charged by the informal money-lenders particularly to the poor borrowers is still very high (see Sarap, 1990).

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