Volume 2, Issue 3 (March, 2012) ISSN: 2249-7307

A Peer Reviewed International Journal of Asian Research Consortium

AJRBEM: ASIAN JOURNAL OF RESEARCH IN BUSINESS ECONOMICS AND MANAGEMENT

DETEMINANTS OF BORROWING BEHAVIOUR OF FARMERS

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ABSTRACT

Agriculture contributed 19 percent of gross domestic product in India. Agricultural credit is the major input in agriculture (Economic Survey, 2009). There is a strong relationship between agricultural credit and agricultural production. Many of the studies had established this relationship (Feder et al, 1990, Foldz,2004). The Reserve Bank of India fixed a target lending of 18 percent net bank credit to the agricultural sector (Report on trend and progress of banking, 2009). The Approach Paper to the Eleventh Five Year Plan has set a target of 4 per cent for the agriculture sector within the overall GDP growth target of 9 per cent. In this context, the need for affordable, sufficient and timely supply of institutional credit to agriculture has assumed critical importance. In India a multi-agency approach comprising co-operative banks, scheduled commercial banks and RRBs has been followed for purveying credit to agricultural sector. The policy of agricultural credit is guided mainly by the considerations of ensuring adequate and timely availability of credit at reasonable rates through the expansion of institutional framework, its outreach and scale as also by way of directed lending.

The demand for agricultural credit arises due to i) lack of simultaneity between the realisation of income and act of expenditure; ii) lumpiness of investment in fixed capital formation; and iii) stochastic surges in capital needs and saving that

accompany technological innovations. Credit, as one of the critical non-land inputs, has two-dimensions from the viewpoint of its contribution to the augmentation of agricultural growth viz., availability of credit (the quantum) and the distribution of credit. In backdrop, an attempt was made to identify the determinants of borrowing behaviour of farmers.

To conclude, the per borrower crop loan was higher for the medium farmers and lower for the marginal farmers. It was found that there was positive relationship between the amount of loan and farm size except for the semi-medium and large farmers. The amount of Per borrower investment loan was found to be highest for large farmers. The estimated borrowing function explained 67 percent of the variations in the amount borrowed in terms of the socio-economic characteristics of the farmers. Of the variables taken into account, only the land size emerged as significant variable in explaining the variations in the borrowing behavior in the study area.

INTRODUCTION

Agriculture contributed 19 percent of gross domestic product in India. Agricultural credit is the major input in agriculture. (Economic Survey, 2009). There is a strong relationship between agricultural credit and agricultural production. Many of the studies had established this relationship(Feder et al, 1990, Foldz,2004). The Reserve Bank Of India fixed a target lending of 18 percent net bank credit to the agricultural sector(Report on trend and progress of banking, 2009). The Approach Paper to the Eleventh Five Year Plan has set a target of 4 per cent for the agriculture sector within the overall GDP growth target of 9 per cent. In this context, the need for affordable, sufficient and timely supply of institutional credit to agriculture has assumed critical importance. In India a multi-agency approach comprising co-operative banks, scheduled commercial banks and RRBs has been followed for purveying credit to agricultural sector. The policy of agricultural credit is guided mainly by the considerations of ensuring adequate and timely availability of credit at reasonable rates through the expansion of institutional framework, its outreach and scale as also by way of directed lending. Over time, spectacular progress had been achieved in terms of the scale and outreach of institutional framework for agricultural credit. Some of the major discernible trends are as follows:

Over time the public sector banks have made commendable progress in terms of putting in place a wide banking network, particularly in the aftermath of nationalisation of banks. The number of offices of public sector banks increased rapidly from 8,262 in June 1969 to 68,355 by March 2005 (Goliat, 2007).

The demand for agricultural credit arises due to i) lack of simultaneity between the realisation of income and act of expenditure; ii) lumpiness of investment in fixed capital formation; and iii) stochastic surges in capital needs and saving that accompany technological innovations. Credit, as one of the critical non-land inputs, has two-dimensions from the viewpoint of its contribution to the augmentation of agricultural growth viz., availability of credit

Y – Amount borrowed (in Rs.)
X_1 – land holdings (in hectares)
X_2 – Consumption expenditure (in Rs.)
X_3 – Capital expenditure (in Rs.)
X_4 – Farm income (in Rs.)
X_5 – Non-farm income (in Rs.)
X_6 – Total variable cost (in Rs.)
U – Random term

IV. RESULTS AND DISCUSSION

DISTRIBUTION OF CREDIT

Credit is one of the pre-requisites for farmers to increase the agricultural output in the process of agricultural development of a country. Provision for institutional credit to agriculture has assumed growing significance in the new strategy for agricultural development. Thus an analysis was undertaken to analyse the distribution of credit.

FARMER CATEGORY WISE AND PURPOSIVE WISE DISTRIBUTION OF AGRICULTURAL CREDIT

TABLE 1 SHOWS THE DETAILS REGARDING CROP LOAN AND INVESTMENT LOAN

TABLE 1

FARMER CATEGORYWISE DISTRIBUTION OF CROP LOAN AND INVESTMENT LOAN

Farmer category	Crop Loan		Investment loan	
	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)
Marginal	1	20,000 (1.62)	–	–
Small	8	2,32,000 (18.85)	5	1,25,000 (8.01)
Semi-Medium	12	3,09,000 (25.10)	7	4,95,000 (31.73)
Medium	4	3,95,000 (32.09)	4	3,00,000 (19.23)
Large	4	2,75,000 (22.34)	5	6,40,000 (41.03)
Total	29	12,31,000 (100)	21	15,60,000 (100)

Note: Figures in parentheses indicate percentages.

Of the 50 farmer respondents in the village, 29 had availed crop loan of Rs.12,31,000, 21 had borrowed for investment purpose in agriculture. The number of accounts in crop loan was higher for semi-medium farmers. However the total amount sanctioned was higher for the

On the other hand, the amount of Per borrower investment loan was found to be highest for large farmers. The investment loan is fixed by NABARD according to the unit cost and also on the basis of security. The availability of per hectare crop loan was higher for marginal farmers as compared with other categories of farmers. This implies that marginal farmers utilize all the land holdings and accordingly the availability of crop loan propertly. The highest amount of per hectare investment loan was Rs.9,519.23 for semi-medium farmers as compared with other categories of farmers, which was due to large amount of loan demanded towards the purchase of tractor, dug well and purchase of livestock and bullock carts.

The amount of per capita crop loan for semi-medium farmers was amounted Rs.4,120 which was the least amount as compared with other category of farmers. The per capita investment loan on the part of the large farmers was high which implies that this category of farmers demanded more amount of investment loan as compared with other category of farmers.

DETERMINANTS OF CREDIT

The factors determining the borrowing behavior of the farmers had been identified on the assumption that the socio-economic factors associated with the farm households are influencing the farmers to borrow from the financial institutions. Hence an attempt has been made to identify the determinants of credit at the micro level.

BORROWING FUNCTION OF THE FARMERS

The factors determining the demand for bank credit at household level had been identified on the assumption that the households try to maximize their utility subject to the constraint to their time and budget. To test this hypothesis initially nine socio-economic variables namely age of the farmer, size of land holding, family size, capital expenditure, farm income, non-farm income, education, total variables cost, consumption expenditure were put in the regression analysis. However, the age of the farmer, family size and educational qualification of the farmers were found to be insignificant in the pre test analysis. Thus those variables were excluded and the remaining variables were put into the analysis, the result of which is presented in Table 7.

In the investment loan provided by the commercial banks, both the number of farmers and amount obtained was higher for the purchase of livestock / bullock carts followed by the amount distributed was higher for land development. Large farmers had availed larger amount of loan for all investment purposes except for dug well, fertilizer and tractor. Both the medium and large farmers had availed equal amount of loan for the purchase of electric motor and land development purposes. Marginal farmers did not obtain loan for any investment purposes. It was due to the small land holdings and less capacity to repay.

THE COVERAGE AND QUANTUM OF CREDIT

In order to understand the coverage and quantum of credit, per account, per hectare and per capita loan for all purposes for all category of the farmers were computed. Table 6 shows the distribution of per borrower, per hectare and per capita crop and investment loans.

TABLE 6

FARMER CATEGORYWISE DISTRIBUTION OF PER BORROWER, PER HECTARE, PER CAPITA CROP LOAN AND INVESTMENT LOAN

Farmer category	Per borrower		Per hectare		Per capita	
	Crop loan	Investment loan	Crop loan	Investment loan	Crop loan	Investment loan
Marginal	20,000	–	24,691.36	–	6,666.67	–
Small	29,000	25,000	12,327.31	6,641.87	5,395.35	2,906.98
Semi-Medium	25,750	70,714.29	9,942.31	9,519.23	4,120.00	6,600
Medium	98,750	75,000	11,621.07	8,826.13	13,166.67	10,000
Large	68,750	1,28,000	3,928.01	9,141.55	6,875	16,000

The per borrower crop loan was higher for the medium farmers and lower for the marginal farmers and it was found that there was positive relationship between the amount of loan and farm size except for the semi-medium and large farmers. It was because the loans are given to the farmers on the basis of scale of finance of the different crops and also the size of operational land holdings. Under crop loan system, the amount of loan is fixed according to the scale of finance prescribed for different crops are prepared by the District Level Consultative Committee. It also reveals that on an average, the different categories of farmers had received their crop loan according to the guidelines of the credit policy of the banking sector.

TABLE 5
PURPOSE WISE AND FARMER CATEGORY WISE DISTRIBUTION OF INVESTMENT LOAN

Crop	Marginal		Small		Semi-medium		Medium		Large	
	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)
Dug well	–	–	–	–	1	75,000 (15.15)	–	–	–	–
Electric motor	–	–	–	–	–	–	1	1,00,000 (33.33)	1	1,00,000 (15.63)
Land development	–	–	1	40,000 (32)	1	40,000 (8.08)	1	1,00,000 (33.33)	1	1,00,000 (15.63)
Tractor	–	–	–	–	1	2,00,000 (40.41)	–	–	–	–
Purchase of livestock/ bullock cart	–	–	4	85,000 (68)	3	1,55,000 (31.31)	–	–	2	3,90,000 (45.31)
Drip irrigation	–	–	–	–	–	–	1	75,000 (25)	1	1,50,000 (23.43)
Fertilizer	–	–	–	–	1	25,000 (5.05)	1	25,000 (8.34)	–	–
Total	–	–	5	1,25,000 (100)	7	4,95,000 (100)	4	3,00,000 (100)	5	6,40,000 (100)

Note: Figures in parantheses denote percentages.

medium farmers. The factor behind this was that the availability of loan depends on the area under cultivation. On the other hand, the investment loan demand was high, among the large farmer categories as they use modern methods for cultivation such as tractors power tillers, thresher, high yielding varieties of seeds, heavy dose of fertilizers, etc.

CROP LOAN

The crop loan is provided for all types of crops, it is a short term loan covering a maximum period of one year. The crop wise and farmer category wise distribution of crop loans are shown in Table 2 and Table 3.

TABLE 2

CROP WISE DISTRIBUTION OF CROP LOAN

Type of crop	No. of Accounts	Amount (in Rs.)	Percentage
Sugarcane	11	7,15,000	58.08
Banana	11	3,64,000	29.57
Coconut	5	1,35,000	10.97
Cholam	1	5,000.00	0.41
Groundnut	1	12,000	0.97
Total	29	12,31,000	100

TABLE 3
CROP WISE AND FARMER CATEGORY WISE DISTRIBUTION OF CROP LOAN

Crop	Marginal		Small		Semi-medium		Medium		Large	
	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)	No. of Accounts	Amount (in Rs.)
Sugarcane	–	–	3	1,20,000 (51.73)	3	65,000 (21.03)	3	3,70,000 (93.67)	2	1,60,000 (58.18)
Banana	1	20,000 (100)	2	50,000 (21.55)	5	1,54,000 (49.84)	1	25,000 (6.33)	2	1,15,000 (41.82)
Coconut	–	–	2	50,000 (21.55)	3	85,000 (27.51)	–	–	–	–
Cholam	–	–	–	–	1	5,000 (1.62)	–	–	–	–
Groundnut	–	–	1	12,000 (5.17)	–	–	–	–	–	–
Total	1	20,000 (100)	8	2,32,000 (100)	12	3,09,000 (100)	4	3,95,000 (100)	4	2,75,000 (100)

Note: Figures in parantheses indicate percentages.

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It is evident from the table that, most of the farmers had availed loan for sugarcane and banana. The loan availed for sugarcane was higher as compared with other crops. It was noted that the sugarcane cultivators have a tie up with Bannari Amman Sugars and the repayment is made through the Bannari Amman Sugars. Thus, this organizational tie up with the factory is the major cause for the dominance of sugarcane in the cropping pattern.

INVESTMENT LOAN

Investment loans are provided in agriculture to meet the fixed capital requirements for creating adequate infrastructure to adopt new strategy of production. The core of the new production strategy implies the application of heavy doses of fertilizers, intensive irrigation etc., which essentially assume the development of an adequate infrastructure on the farm investment loans are sanctioned for land development, dug well, purchase of electric motor, livestock / bullock carts, tractor and installing drip irrigation. Table 4 and Table 5 shows the purpose wise farmer category wise distribution of investment loan respectively.

TABLE 4

PURPOSE WISE DISTRIBUTION OF INVESTMENT LOAN

Type of crop	No. of Accounts	Amount (in Rs.)	Percentage
Dug well	1	75,000	4.81
Electric motor	2	2,00,000	12.82
Land development	4	2,80,000	17.95
Tractor	1	2,00,000	12.82
Purchase of livestock/ bullock cart	9	5,30,000	33.97
Drip irrigation	2	2,25,000	14.42
Fertilizer	2	50,000	3.21
Total	21	15,60,000	100

TABLE 7

ESTIMATED REGRESSION CO-EFFICIENTS – BORROWING FUNCTION

S.No.	Variables	Co-efficients
1.	a. Land in hectares (X_1)	20,987.651 (3.653)*
	b. Consumption expenditure (X_2)	-0.270 (-0.344)
	c. Capital expenditure (X_3)	-1.00212 (-0.024)
	d. Farm income (X_4)	-4.00763 (-0.826)
	e. Non farm income (X_5)	-0.352 (-0.723)
	f. Total variable cost (X_6)	-0.337 (-1.068)
2.	R^2	0.67
3.	F Ratio	3.317*

Note: Figures in parantheses indicate 't' values

* - Significant at 5 percent level.

The estimated borrowing function explained 67 percent of the variations in the amount borrowed in terms of the socio-economic characteristics of the farmers and only 33 percent of the variation was explained by the other set of factors. This implies that the farmers were rational in availing the credit facilities provided by the banks. Of the variables taken into account, only the land size emerged as significant variable in explaining the variations in the borrowing behavior in the study area. It had the positive impact on the amount of credit, as the size of land holding increased, the amount of credit had also increased and vice versa. The value of F (3.317) shows that all the selected variables together were significant to influence the amount of credit.

V. CONCLUSION

There was positive relationship between the amount of loan and farm size except for the semi-medium and large farmers. It was because the loans are given to the farmers on the basis of scale of finance of the different crops and also the size of operational land holdings. Under crop loan system, the amount of loan is fixed according to the scale of finance prescribed for different crops are prepared by the District Level Consultative Committee. It also reveals that on an average, the different categories of farmers had received their crop loan according to the guidelines of the credit policy of the banking sector. On the other hand, the amount of Per borrower investment loan was found to be highest for large farmers. The estimated borrowing function explained 67 percent of the variations in the amount borrowed in terms of the socio-economic characteristics of the farmers. Of the variables taken into account, only the land size emerged as significant variable in explaining the variations in the borrowing behavior in the study area.

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