

## **Determiants of Credi Gap and Financial Inclusion among the Borrowers of Tribal Farmers**

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### **Abstract**

The importance of farm credit as a critical input to agriculture is reinforced by the unique role of Indian agriculture in the macroeconomic framework and its role in poverty alleviation. Recognizing the importance of agriculture sector in India's development, the Government and the Reserve Bank of India (RBI) have played a vital role in creating a broad-based institutional framework for catering to the increasing credit requirements of the sector. After the nationalization of commercial banks in 1969, they were directed to lend more to agriculture. Several policy measures, such as introduction of Lead Bank Scheme (1969), establishment of Regional Rural Banks (1975), Service Area Approach (1989), Micro Finance Scheme (1992) and Kisan Credit Card System (1998-1999) were initiated due to which institutional credit comprising commercial bank credit and cooperative credit increased from 7.3 per cent in 1951 to 60 per cent in 1996. Credit provided by commercial, co-operative and regional rural banks reached the level of 245976 crore during 2008-2009. The share of commercial banks increased from 51.94 per cent in 1998- 1999 to 71.64 per cent in 2008-2009, but the share of cooperative banks declined from 38.67 per cent to 17.91 per cent in the same period, whereas the Regional Rural Banks were the marginal players with 7 – 9 per cent market share in agricultural credit (Hand Book of Indian Economy, 2011).

The above evidences showed the financial market imperfections in agricultural sector. The financial market imperfections were likely to affect the decision-making agents particularly the small farmers and economic development. The financial market imperfections would lead to income inequality or poverty traps. Financial market imperfections such as information asymmetries and transactions costs were likely to be binding on the talented poor and the micro and small enterprises that lacked collateral, credit histories and connections, thus limiting their opportunities and leading to persistent inequality and slower growth. In this backdrop, an attempt was made to assess the credit gap and to identify the factors determining the credit gap.

The findings of the study showed that no crop loan gap was observed for medium farmers. Highest amount of crop loan gap was estimated for marginal farmers (₹45227.3 per acre). It showed inverse relationship between size of land holding and crop loan gap among borrowers. The sign of the co-efficient pertaining to area under cultivation was in accordance with theoretical sign in the probit equation. It implied that if the area under cultivation increases, the financial inclusion could be improved. If the farm expenses, consumption expenses and the age of the respondents increased, the financial inclusion could be improved. The value of chi-square was statistically significant. It implied that the estimated model had better fit. The percentage of farmers were correctly classified as who had credit accessibility and no credit accessibility was 98 percent. It also reveals better fit of the model.

The importance of farm credit as a critical input to agriculture is reinforced by the unique role of Indian agriculture in the macroeconomic framework and its role in poverty alleviation. Recognizing the importance of agriculture sector in India's development,

the Government and the Reserve Bank of India (RBI) have played a vital role in creating a broad-based institutional framework for catering to the increasing credit requirements of the sector. The Reserve Bank has been very active in reinvigorating the co-operative credit movement in the country through a variety of initiatives (Mohan, 2006). With the acceptance of the recommendations of All India Rural Credit Review Committee (1954), efforts were directed towards the development of cooperatives. Meanwhile, the review undertaken by the All India Rural Credit Review Committee (1969) suggested that the efforts of the co-operatives had to be supplemented along with commercial bank landings. The adoption of multi-agency approach for the provision of credit to the rural areas with a larger role of the commercial banks so that the desired level of progress in agricultural production could be achieved. It was also observed from available data that the share of total agricultural credit supplied through rural branches had declined from 55.5 per cent in 1990 to 38.5 per cent in 2010. The contribution of urban and metropolitan branches to agricultural credit had increased from 14.9 per cent to 33.7 per cent during this period, indicating that credit disbursement was mainly through non-rural branches. The available data raised questions about the segments to which the credit was actually flowing and whether it was reaching the intended beneficiaries.

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The above evidences showed the financial market imperfections in agricultural sector. The financial market imperfections were likely to affect the decision-making agents particularly the small farmers and economic development. The financial market imperfections would lead to income inequality or poverty traps. Financial market imperfections such as information asymmetries and transactions costs were likely to be binding on the talented poor and the micro and small enterprises that lacked collateral, credit histories and connections, thus limiting their opportunities and leading to persistent inequality and slower growth. In this backdrop, an attempt was made to assess the credit gap and to identify the factors determining the credit gap

### **Methodology**

The study was conducted in Nilgiris district of Tamil Nadu. The data for the study is purely primary in nature. A multistage random sampling procedure was adopted in selecting the sample. In the first stage, among 4 blocks in Nilgiri district, Udhamandalam block was selected as it was one of the high agricultural credit

intensive blocks. This block had access for credit for agriculture from commercial and co-operative banks and micro finance institutions. In the next stage, the banks located in the block namely State Bank of India, Canara Bank and cooperative banks along with micro finance institutions were selected. These financial institutions had major share in the agricultural credit disbursement. From the borrowers list provided by financial institutions, one hundred and fifty borrower and non-borrower farmers during 2010-2011 were selected randomly in the next stage.

Probit regression model is used to specify a regression analysis in which the dependent variable is a dichotomous variable taking the value of one or zero. It is based on the normal cumulative distribution function given the assumption of normality, the probability that  $I^0$  is less than or equal to  $I^0$  can be compared from the standard normal cumulative distributive function as

$$\begin{aligned}
 P_i &= P(y = 1/x) = P(I_0 < I_i) \\
 &= P(z_i < \beta_1 + \beta_2 x_i) \\
 &= F(\beta_1 + \beta_2 x_i) \text{----- (1)}
 \end{aligned}$$

Where  $P(y = 1/x)$  means the probability that an event occurs given the value of  $x$  or explanatory variable where  $z_i$  is the standard normal variate  $z \sim n(0, \sigma^2)$  (Annappoorani and Gandhimathi, 2012).

The above form of probit regression equation was reduced to the following form

- $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$
- $Y =$  Financial inclusion (1- presence of financial inclusion and 0 – absence of financial inclusion)
- $X_1 =$  Area under cultivation (In acres)
- $X_2 =$  Total expenses (In ₹)
- $X_3 =$  Consumption expenses (In ₹)
- $X_4 =$  Age of the respondents (In Years)
- $X_5 =$  Education (0 – illiterates, 1 – primary, 2- secondary and higher secondary and 3-college level education)
- $X_6 =$  Type of family (1- nuclear and 2- joint).

The Probit model was estimated by using computer software Limdep 7.0 version

**Credit Gap**

Credit gap is the excess demand for credit over the availability among the tribal farmers. The borrowers had excess demand for crop loan. The borrowers did not demand in excess for investment purpose. The non-borrowers did not know the availability of credit and the benefit of borrowing. Hence, both crop loan gap and investment loan gap was not indentified for non-borrowers. The crop loan gap for borrowers is shown in Table -1.

**Table-1**  
**Crop Loan Gap**  
(₹Per acre)

S. No.	Farmer category	Amount
1	Marginal	45227.3
2	Small	6298.02
3	Medium	0
Total average		11587.8

Source: Field survey, 2011

No crop loan gap was observed for medium farmers. Highest amount of crop loan gap was estimated for marginal farmers (₹45227.3 per acre). The crop loan gap for small farmers was ₹6298.02 per acre. It showed inverse relationship between size of land holding and crop loan gap among borrowers.

**Determinants of Financial Inclusion**

The factors such as area under cultivation, farm expenses, consumption expenses, age of the respondents, education and total assets were hypothesised to determine financial inclusion. Hence, to identify the factors determining financial inclusion, the above factors were put into probit regression analysis. The results of probit regression analysis are shown in table2 and 3.

**Table-2**  
**Determinants of Financial Inclusion - Probit Regression Analysis**

Variables	Co efficient	t value	Significant level
Constant	1.422227384	5.488	Significant at 1% level
Area under cultivation	.3355946501	2.163	Significant at 5% level
Farm expenses	.4873683455	1.96	Significant at 5% level
Consumption expenses	.2050874173	3.213	Significant at 1% level
Age of the respondents	.1836309958	22.106	Significant at 1% level
Education	.1562168699	.622	Insignificant
Type of family	.1875310153	.017	Insignificant
Chi square	169.2693		Significant at 1% level

Source: Estimated from the field survey, 2011

**Table-3**  
**Classification Results**

<b>Actual</b>	<b>Farmers who had credit accessibility</b>	<b>Farmers who had no credit accessibility</b>	<b>Total</b>
Credit inaccessible farmers	74	1	75
Credit accessible farmers	2	73	75
<b>Total</b>	76	74	150

Source: Estimated from the field survey, 2011

The Probit regression coefficients associated with area under cultivation, consumption expenses, farm expenses and age of the respondents were statistically significant to determine financial inclusion. All the above significant factors had positive relationship with financial inclusion.

The sign of the co-efficient pertaining to area under cultivation was in accordance with theoretical sign. It implied that if the area under cultivation increases, the financial inclusion could be improved. If the farm expenses, consumption expenses and the age of the respondents increased, the financial inclusion could be improved.

The value of chi-square was statistically significant. It implied that the estimated model had better fit. The percentage of farmers were correctly classified as who had credit accessibility and no credit accessibility was 98 percent. It also reveals better fit of the model.

### **Conclusion**

To conclude, no crop loan gap was observed for medium farmers. Highest amount of crop loan gap was estimated for marginal farmers (₹45227.3 per acre). It showed inverse relationship between size of land holding and crop loan gap among borrowers. The sign of the co-efficient pertaining to area under cultivation was in accordance with theoretical sign. It implied that if the area under cultivation increases, the financial inclusion could be improved. If the farm expenses, consumption expenses and the age of the respondents increased, the financial inclusion could be improved. The value of chi-square was statistically significant. It implied that the estimated model had better fit. The percentage of farmers were correctly classified as who had credit accessibility and no credit accessibility was 98 percent. It also reveals better fit of the model.

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