AN ECONOMIC ANALYSIS OF INSTITUTIONAL AGRICULTURAL CREDIT IN INDIA

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ABSTRACT
Agricultural credit plays an important role in maintaining agricultural production by meeting the credit need of producers during the entire cycle of crop production. In order to analyse whether formal credit has reached the targeted group, it is essential to study about various institutional agencies involved in agricultural credit. The objective of this study is to analyse the growth rate, mean, coefficient of variation and percentage share of various institutional sources involved in agriculture credit as well as their loan outstanding in India. The results of descriptive statistics has shown that over the years scheduled commercial banks has played a major role in credit disbursement to agriculture both in short and long term loans.

KEY WORDS: Loan outstanding, disbursement, Growth rate, Coefficient of variation.

INTRODUCTION
In the era of commercialization, use of modern inputs in agriculture is growing rapidly. Access to capital is a pre requisite for market-led agricultural production activities against conventional farming system. Credit reduces the risk against weather failure and increase the resource use efficiency to maximize farm output (Carter, 1989). Credit is considered as an effective mechanism to enhance production and consumption activity of majority households (*e.g.* Zeller et al. 1997; Robinson, 2001; Armendariz and Morduch, 2005; Conning and Udry, 2005; Swain et al. 2008). Hence farmers have to avail credit either from institutional sources or from non- institutional sources like private money lenders. Loans from non-institutional sources are often unfair, with very high interest rate, and hence borrowers repeatedly fall into debt trap. Hence to overcome this, Indian Government has initiated several measures to stimulate the institutional credit system to make it more receptive to the needs of farmers. The objective of the Agricultural Credit Policy in India has been gradual replacement of moneylenders by institutional sources and a lowering of interest rates.

Until banks were nationalized, cooperative institutions were the only source of institutional credit in rural areas. Since nationalization, scheduled commercial banks (SCB's) and regional rural banks (RRBs) have also been part of the formal credit system. Keeping in view the importance of flow of credit to agriculture in India, the study has used secondary data collected from sources like Reserve Bank of India and National Bank for Agricultural and Rural Development pertained to the period 1999-00 to 2012-13. The objectives of the study were to analyse the growth rate of various institutional credit involved in agriculture, estimate the share of institutional agencies in credit disbursement and loan outstanding and to find out the coefficient of variation of various institutional credit systems involved in agriculture credit

METHODOLOGY
Conventional method of analysis
The percentage and average analysis were carried out to estimate the share of each institutional agencies in credit disbursement and outstanding loans.

Compound Growth Rate
To analyse the changes in agricultural credit disbursement as well as loan outstanding by various institutional agencies in India during the period from 1999-00 to 2012-13, compound growth rates were estimated using the semi log linear function form

$$Y_t = A (1+ r)^t U_t \ldots\ldots\ldots\ldots \ldots\ldots(1)$$

When linearalised it becomes
$$\ln Y_t = \quad + \quad _t + v_t \ldots\ldots\ldots\ldots\ldots(2)$$

can be calculated using OLS regression from which r can be estimated as follows:
$$r = (\ln \quad -1) * 100 \ldots\ldots\ldots\ldots\ldots (3)$$

Where Y_t = Agricultural credit and loan outstanding in time t.

　　　　r　=　Annual compound growth rate
　　　　vt　=　ln U_t = error term
　　　　t　=　Time in discrete years

Instability Analysis
In order to compute the instability in agricultural credit disbursement by various institutional agencies, coefficient of variation (CV) was computed. The form of equation to compute CV is as follows,

$$CV = \frac{\text{Standard deviation}}{\text{Mean}} * 100$$

RESULTS & DISCUSSION

In order to analyse the growth and share of Institutional agencies, data pertained to the period 1999-00 to 2012-13 were analysed. The data since 1999-2000 are strictly not comparable with the earlier years as it cover not only Primary Agricultural Credit Societies (PAC's) but also State Co-operative Agricultural Rural Development Banks and Primary Co- operative Agricultural Rural Development Banks, while the earlier period covers (PAC's) only. Institutional Credit for Agriculture and Allied Activities is shown in table1.

TABLE 1: Institutional Credit for Agriculture and Allied Activities

Particulars	Co-operatives	SCBs	RRBs	Total
Growth rate (%)	11.01	31.10	27.41	22.94
Mean (Rs in billion)	544.28	1314.07	227.61	2087.00
CV (%)	45.30	103.31	86.69	85.93
% share	16.84	73.37	9.79	100.00

The result from the table 1 showed that Institutional Credit for Agriculture and Allied Activities had shown a growth rate of 22.94 per cent. Among the three institutional agencies involved in credit disbursement, Scheduled Commercial Banks had shown a greater growth, higher credit payment, coefficient of variation and percentage share. The average credit disbursement from 1999-00 to 2012-13 was Rs.2087 billion. The coefficient of variation was higher as shown by the value 85.93 per cent. In case of Co-operatives, variation in credit disbursement over the years was minimal. The percentage share of Scheduled Commercial Banks in the total credit disbursement was 73.37 per cent, followed by Co-operatives (16.84 %) and Regional Rural Banks (9.79 %). The Institutional loan outstanding for Agriculture and Allied Activities is given in table 2.

TABLE 2: Institutional loan outstanding for Agriculture and Allied Activities

Particulars	Co-operatives	SCBs	RRBs	Total
Growth rate (%)	4.56	25.35	22.52	18.36
Mean (Rs in billion)	694.27	1954.70	299.71	2948.68
CV (%)	26.42	82.36	75.41	66.33
% share	15.79	73.68	10.53	100

The analysis from the table 2 showed that growth rate in the study period was 18.36 per cent, with the mean loan outstanding of Rs. 2948 billion. The coefficient of variation was 66.33 per cent. As like in credit disbursement, SCB's also leads in loan outstanding with 73.68 per cent and RRB's with minimal of 10.53 per cent.The individual analysis of short term and long term credit for agriculture and allied activities is given in table 3.

TABLE 3: Institutional Short-Term and Long Term Credit for Agriculture and Allied Activities

Particulars	Short-Term				Long -Term			
	Co-operatives	SCBs	RRBs	Total	Co-operatives	SCBs	RRBs	Total
Growth rate (%)	14.06	31.21	28.66	20.23	-1.60	29.72	20.99	12.42
Mean (Rs in billion)	446.11	676.39	197.84	1272.03	98.17	366.07	29.77	467.87
CV (%)	56.98	95.06	89.38	74.66	22.27	81.85	69.65	66.69
% share	23.60	62.84	13.56	100.00	5.72	88.63	5.64	100.00

TABLE 4: Institutional Short-Term and Long Term loan outstanding for Agriculture and Allied Activities

Particular	Short-Term				Long -Term			
	Co-operative	SCB	RRB	Total	Co-operative	SCB	RRB	Total
Growth rate (%)	9.94	29.91	26.25	23.10	-1.92	20.76	16.36	13.29
Mean (Rs in billion)	365.39	1061.91	210.43	1637.73	323.31	892.78	89.29	1305.38
CV (%)	42.62	98.96	81.75	83.17	32.11	66.25	60.71	47.23
% share	15.79	72.83	11.39	100	12.77	78.25	8.98	100

It is evident from the table 3 that in case of short term credit, the average growth rate was 20.23 per cent in the study period, with the mean loan disbursement of Rs.1272 billion and CV 74.66 per cent. Compared to short term credit, the growth rate (12.42 per cent), loan disbursement (Rs.467 billion) and CV (66.69 per cent) was lower in case of long term credit. Among the credit institutions, Scheduled Commercial Banks play a major role by disbursing about 62. 84 per cent and 88. 63 per cent of short term and long term loans respectively. Whereas the RRB's share in agricultural and allied activities credit was only 13.56 per cent and 5.64 per cent in short and long term loans respectively. The analysis of short and long term loan outstanding for agriculture and allied activities is given in table 4.

It has been observed from the table 4 that growth in short term loan outstanding (23.10%) was more than that of long term loan outstanding (13.29%). The average loan outstanding in agriculture was Rs.1637 billion and Rs.1305 billion in short term and long term loan respectively. Similarly the coefficient of variation was also higher in case of short term loan outstanding with 83.17 per cent when compared to long term loan outstanding of 47.23 per cent. The percentage share of scheduled commercial banks in institutional short term loan outstanding was 72.83 per cent and it was higher in case of long term loan outstanding with 78.25 per cent. The share of Co-operatives (15.79 per cent) and Regional Rural Banks (11.39 per cent) in short term loan outstanding was more when compared to long term loan outstanding of Co-operatives (12.77 per cent) and Regional Rural Banks (8.98 per cent).

Conclusions and policy implications
1. From the analysis it was observed that among the institutional agencies involved in agricultural and other allied activities, Scheduled Commercial Banks is ahead in both credit disbursement and outstanding loans.
2. It is clear that the rate of growth and mean disbursement of short term credit was more when compared to long term credit payment.
3. Government can make necessary arrangements so that Co-operatives and Regional Rural Banks will also acquire active role in credit disbursement as like that of Commercial Banks.

4. As the reach of short term credit was more when compared to long term credit, Scheduled Commercial Banks can also concentrate more on long term loans since it has the ability to bring out new technological changes in existing farming practices.

REFERENCES

Armendariz B.A. and Jonathan Morduch (2005) *The economics of microfinance*. London: MIT Press. Asia Development Bank: Annual report, 2005.

Carter, M.R. (1989) The impact of credit on peasant productivity and differentiation in Nicaragua. *Journal of Development Economics*, 31, 13-36.

Conning, Jonathan, and Christopher Udry (2005) Rural Financial Markets in Developing Countries, Economic Growth Centre. Yale University and Centre Discussion Paper No. 914.

Robinson Marguerite (2001) The Micro-finance Revolution: Sustainable Finance for the Poor, Washington D.C. World Bank.

Swain, R.B., Sanh, N.V. and Tuan V.V. (2008) Microfinance and Poverty Reduction in Mekong Delta in Vietnam. African and Asian Studies.7 (2-3): 191-215.

Zeller, Manfred (1997) Participation of Rural Households in Informal and Formal Credit Marketsin Madagascar. Washington, D.C.: IFPRI.