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Effect of Liberalization on Institutional Agricultural Credit Flow and its Relationship with Average Cost of Cultivation in Indian Agriculture

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Abstract

This paper has examined (i) the nature and extent of inter-state disparities in per hectare flow of short-term institutional credit to agriculture, and (ii) its relationship with average cost of cultivation across states. It has covered all the six regions of the country comprising seventeen agriculturally most important states having about 96 per cent agricultural land in the country. It has revealed that inter-regional disparities in per hectare flow of institutional credit as measured through coefficient of variation (CV) had increased during the pre-liberalization period between 1980-81 and 1990-91. During the post-liberalization era (1991-92 to 2001-02), the inter-regional disparities have reduced. The per hectare institutional credit flow has shown that in most of the states across the country the coverage has increased though in different degrees during the post-liberalization stage over the pre-liberalization period. But, the coverage has still remained very low (below 20 per cent of cost of cultivation), except in the four states of southern region and Punjab and Himachal Pradesh in the northern region in 2001-02.

Introduction

Credit is seen as a powerful instrument in promoting economic development with equity and social justice and more particularly to increase

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agricultural production and improve the standard of living of rural population. This is why credit to agricultural sector has always commanded special attention in terms of both policy issues and institution building (Gadgil, 1994). Increasing commercialization and diversification through the use of modern technologies have enhanced the credit need in the agricultural sector. Therefore, ensuring the access to rural credit and improving the efficiency of the rural credit delivery system for augmenting agricultural production has been an area of constant focus in the planning process in our country. The institutional agricultural credit agencies have gone a long way in financing agriculture, specially after the nationalization of commercial banks in 1969 and its follow-up in 1980. However, several issues have sprung up during their increasing participation in agricultural credit. This paper has examined two core issues, namely (i) the nature and extent of inter-state disparities in the per hectare short-term (ST) institutional credit flow to agriculture, and (ii) its relationship with average cost of cultivation across the states of India.

Data and Methodology

The study has covered all the six regions of the country, namely, northern, north-eastern, eastern, central, western and southern and pertains to the period 1980-81 to 2001-02, viewed as pre-liberalization period up to 1990-91 and post-liberalization period starting from 1991-92. The relevant data were collected from various issues of RBI publications (1980-2002); *Agricultural Statistics at a Glance*, *Indian Agriculture in Brief*, Directorate of Economics and Statistics, Government of India; and various issues of *Economic Survey*, Government of India.

According to the availability of consistent time series data, the present study considered six regions, comprising seventeen agriculturally most important states covering approximately 96 per cent agricultural land. The northern region comprises states of Punjab, Haryana, Jammu & Kashmir, Rajasthan and Himachal Pradesh; the eastern region comprises Bihar (including Jharkhand), West Bengal and Orissa; the central region comprises Uttar Pradesh (including Uttaranchal) and Madhya Pradesh (including Chattisgarh); the western region includes Gujarat and Maharashtra; the southern region is consisted of Andhra Pradesh, Karnataka, Tamil Nadu and Kerala and the north-eastern region includes only Assam.

Inter-state disparities in the estimated per hectare flow of short-term institutional agricultural credit were examined by estimating the coefficient of variation (CV) for each year across the states. The per-hectare flow of credit for each state was estimated by dividing the total disbursement in each state with respective gross cropped area. This disbursement included commercial bank, RRB and co-operative credits.

The relationship between per hectare flow of short-term institutional credit and average cost of cultivation in agriculture across states, has been examined. The average cost of cultivation for a state in a given year was worked out using formula (1):

$$\text{Average cost of cultivation} = \sum_i^n C_i P_i \quad \dots (1)$$

where,

C_i = Cost of cultivation of the i th crop in a state

P_i = Proportion of gross cropped area in the state under the i th crop ($0 \leq P_i \leq 1$), and

n = Number of crops cultivated in the state during a year.

Data on cost of cultivation of certain crops grown in a state in a given year were not generally available. All such crops were grouped as “other crops”. Simple average of cost of cultivation of crops for which data were available for a given state in a given year was then used as an estimate of average cost of cultivation for “other crops” in the state for the year. Proportion of area under “other crops” was derived by formula (2):

$$\text{Proportion of area under “other crops”} = 1 - \sum_i^n P_i \quad \dots (2)$$

where, n = Number of crops for which data on cost of cultivation were available

Results and Discussion

(i) Disparities in Flow of Short-term Institutional Credit

The data given in Table 1 show that the magnitude of CV for inter-state variations in the per hectare flow of short-term institutional credit to agriculture was 83.4 per cent in 1980-81, which increased gradually to 124.8 per cent in 1985-86 and further to 135.92 per cent in 1990-91. Thus, during the pre-liberalization period, the inter-state disparities in the flow of short-term institutional credit to agriculture increased across states. In the post-liberalization period, the magnitude of CV, which was 139.3 per cent in 1991-92, declined to 130.5 per cent in 1995-96 and further to 91.3 per cent in 2001-02. Thus, during the post-liberalization period the inter-state disparities in the flow of short-term institutional credit to agriculture decreased across the states.

Table 1. State-wise per hectare flow of short-term institutional credit to agriculture (Rs)

State	Pre-liberalization period			Post-liberalization period		
	1980-81	85-86	90-91	91-92	95-96	2001-02
Northern region						
Haryana	218	317	311	435	1193	2964
Himachal Pradesh	87	166	157	163	412	2555
Jammu & Kashmir	51	101	171	189	253	764
Punjab	300	526	461	602	1468	5352
Rajasthan	53	82	73	72	176	667
North-Eastern region						
Assam	4	8	7	6	9	311
Eastern region						
Orissa	103	74	73	82	228	479
Bihar	38	97	167	171	173	1075
West Bengal	63	87	97	106	253	1708
Central region						
Madhya Pradesh	53	71	110	109	134	698
Uttar Pradesh	75	111	127	120	373	1529
Western region						
Gujarat	121	299	440	426	1132	2809
Maharashtra	112	216	341	417	756	1352
Southern region						
Andhra Pradesh	160	510	645	739	1537	4604
Karnataka	123	277	222	215	900	3432
Kerala	458	1715	2296	2703	5101	7666
Tamil Nadu	181	911	1478	1668	4468	9403
CV (%)	83.4	124.8	135.9	139.3	130.5	91.3

In 2001-02, the flow of short-term institutional credit per hectare was below Rs 500 in Assam and Orissa; between Rs 500 to Rs 1000 in J&K and Rajasthan; Rs 1000 to Rs 2000 in Bihar, West Bengal, Uttar Pradesh and Maharashtra; Rs 2000 to Rs 3000 in Haryana, Himachal Pradesh, and Gujarat; Rs 3000 to Rs 5000 in Karnataka and Andhra Pradesh, and above Rs 5000 per hectare in Punjab, Kerala and Tamil Nadu. The lowest per hectare flow of short-term institutional credit was in Assam (Rs 311) and the highest in Tamil Nadu (Rs 9403).

For equitable and sustainable growth and development of agriculture across different regions of the country, different institutional agricultural credit agencies within multi-agency system need to refocus their attention

on disbursement of short-term credit to agriculture through proper coordination so that inter-regional disparities could be further reduced.

(ii) Cost of Cultivation and Flow of Short-term Institutional Credit

Agricultural credit advanced by the institutional agencies can be either in the form of short-term loan to meet the operating expenses of the existing business or medium / long- term (combinedly expressed as term credit) loan to meet the capital expenditure of the business. Farmers use short-term credit to purchase inputs such as seed, fertilizer, plant protection chemicals, etc. for raising the crop. Therefore, cost of cultivation of any crop is expected to have strong relationship with short-term credit (usually called production credit or crop loan). Examining such relationship between per hectare flow of ST institutional agricultural credit and average cost of cultivation is of policy interest. It conveys the degree of financial support available to the farm sector for adoption of new and improved technologies.

Table 2 presents the results of state-wise per hectare flow of short-term institutional credit to agriculture as a percentage of average cost of cultivation for the period 1980-81 to 2001-02. Since the estimates of per hectare flow of short-term credit to agriculture from the institutional agencies have already been given in Table1, therefore, these have not been included in Table 2. The results indicate that in most of the states in northern region, the average amount of short-term credit as a percentage of average cost of cultivation varied between 1 per cent and 3 per cent (except in Punjab) during 1980-81 to 1990-91 (pre-liberalization period); in Punjab it was between 3 and 5 per cent. During 1991-92 to 2001-02 (post-liberalization period), the coverage of cost of cultivation by short-term institutional credit increased in all the northern states, but more noticeably in Punjab and Himachal Pradesh, where the per hectare credit flow covered about one-fourth of the cost on cultivation in 2001-02. In Haryana, the coverage rose to 15 per cent in 2001-02.

In the north-east region (Assam), the per hectare production credit disbursed by the institutional agencies covered about 0.1 per cent of the average cost of cultivation during the pre-liberalization period and remained stagnant at the same level during most part of the post-liberalization period. However, the coverage rose to 3.3 per cent in 2001-02, but still it was very low.

In the eastern region, 1-3 per cent of average cost of cultivation could be met through the per hectare production credit disbursed by the institutional agencies during 1980-81 to 1990-91. The same level of coverage continued during most part of the post-liberalization period. But, the coverage increased

Table 2. Percentage coverage of average cost of cultivation by per hectare flow of short-term institutional credit to agriculture across states

State	Pre-liberalization period			Post-liberalization period			
	1980-81	85-86	90-91	91-92	95-96	2001-02	
Northern region							
Haryana	A	7693	10608	14104	14682	17231	19743
	B	2.8	3.0	2.2	3.0	6.9	15.0
Himachal Pradesh	A	3807	4755	6333	6751	8721	10586
	B	2.3	3.5	2.5	2.4	4.7	24.0
Jammu and Kashmir	A	3105	3982	5643	5959	7008	8135
	B	1.6	2.5	3.0	3.2	3.6	9.4
Punjab	A	8281	12289	16589	17686	18984	20907
	B	3.6	4.3	2.8	3.4	7.7	25.6
Rajasthan	A	2882	5101	6234	6954	7780	9397
	B	1.8	1.6	1.2	1.0	2.3	7.1
North- Eastern region							
Assam	A	3174	3878	5002	5443	6737	9560
	B	0.1	0.2	0.1	0.1	0.1	3.3
Eastern region							
Bihar	A	4971	6014	6574	6927	7458	9525
	B	0.8	1.6	2.5	2.5	2.3	11.3
Orissa	A	3842	5727	7813	7400	8663	10359
	B	2.7	1.3	0.9	1.1	2.6	4.6
West Bengal	A	4407	5786	6320	6943	8111	9822
	B	1.4	1.5	1.5	1.5	3.1	17.4
Central region							
Madhya Pradesh	A	2982	4830	6667	6818	8754	12072
	B	1.8	1.5	1.6	1.6	1.5	5.8
Uttar Pradesh	A	4721	6732	8443	8774	9712	13158
	B	1.6	1.6	1.5	1.4	3.8	11.6
Western region							
Gujarat	A	5701	7431	8223	9309	11736	13936
	B	2.1	4.0	5.4	4.6	9.6	20.1
Maharashtra	A	4349	6134	8134	8992	11616	14108
	B	2.6	3.5	4.2	4.6	6.5	9.6
Southern region							
Andhra Pradesh	A	5808	7253	8923	8992	11897	14627
	B	2.8	7.0	7.2	8.2	12.9	31.5
Karnataka	A	4908	6543	9054	9668	11332	14953
	B	2.5	4.2	2.5	2.2	7.9	23.0
Kerala	A	5886	8698	11283	12108	15331	19591
	B	7.8	19.7	20.3	22.3	33.2	39.1
Tamil Nadu	A	5486	6535	9439	10879	13113	19268
	B	3.3	13.9	15.7	14.4	34.1	48.8

A= Average cost of cultivation in Rs/ha.; B= Per ha flow of short-term institutional credit as percentage of average cost of cultivation

markedly in Bihar and West Bengal, reaching the level of 11.3 per cent and 17.4 per cent, respectively in 2001-02.

The trend in Madhya Pradesh and Uttar Pradesh (central region) was similar to that in the eastern region states and covered only 1-2 per cent of the average cost of cultivation during the pre-liberalization period. But, the credit support increased during the post-liberalization period and reached about 6 per cent of average cost of cultivation in Madhya Pradesh and about 12 per cent in Uttar Pradesh in 2001-02

In Gujarat and Maharashtra (western region), the relevant coverage oscillated in the range of 2-6 per cent during pre-liberalization period. During post-liberalization period, both Gujarat and Maharashtra experienced a steady increase in the percentage coverage of average cost of cultivation by the per hectare short-term institutional credit flow. It increased to the level of about one-fifth of the cost on cultivation in Gujarat and one-tenth in Maharashtra in 2001-02.

A relatively different picture regarding the relationship between average cost of cultivation and per hectare short-term institutional credit flow to agriculture could be seen in the southern region. In the four southern states, the coverage rose to two-to-four fold during the post-liberalization period in comparison to that during the pre-liberalization period. In Kerala, the coverage which had reached around 20 per cent during pre-liberalization phase, rose to about 39 per cent in the post-liberalization period; in Tamil Nadu, it increased from 16 per cent to 49 per cent ; in Andhra Pradesh, from about 7 per cent to 32 per cent and; in Karnataka, from about 3 per cent to 23 per cent. Thus, the short-term institutional credit support during post-liberalization period was highly impressive in southern region of the country.

These results indicate that in most of the states across the country the percentage coverage of average cost of cultivation by per hectare short-term institutional agricultural credit flow increased, though in different degrees during the post-liberalization period over the pre-liberalization period. But, this coverage of cost of cultivation through short-term credit flow, in general, remained very low.

Conclusions

The study has revealed that inter-state disparities in the short-term institutional credit flow to agriculture increased during the pre-liberalization period, but declined during the post-liberalization period. The percentage coverage of average cost of cultivation by short-term institutional credit flow in most of the states has been found abysmally low during the pre-liberalization period. The coverage improved in all the states in the post-

liberalization period but it still remained, by and large, very low, except in the four states of southern region and Punjab and Himachal Pradesh in northern region in the year 2001-02. In the other 11 states out of the 17 states included in the study, the coverage has been below 20 per cent of the cost on cultivation in 2001-02.

Under such circumstances, the institutional credit agencies should make concerted efforts in the disbursement of production credit to keep pace with the rising cost on cultivation so as to provide an incentive to the farmers to adopt the latest agro-techniques for achieving higher productivity. In this connection, the financial institutions need to intensify their focus on agriculture and should regularly update the crop-wise scale of finance in line with the rising cost of cultivation. The renewed policy thrust given to the institutional agricultural credit in the union budgets of 2005-06 and 2006-07 is expected to be helpful in this context.

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