REGIONAL DISPARITY IN THE DISTRIBUTION OF AGRICULTURAL CREDIT

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ABSTRACT

The Eleventh Five year plan makes specific focus on the inclusive growth of the economy. It implies that the growth process that experienced over the years were not sufficiently inclusive of all. Although there had been substantial reduction of poverty over past few decades during the five year plans, the core content of the rural poverty remained intractable. In fact, last Ten Five year plan envisaged balanced regional development and equality and employment. But the growth of population and urban biased industrial development have left out the backward section of population and the rural sector in general un-addressed. The agricultural credit policies and the economic reform in general aim to have positive influence on the total volume of institutional credit. However, the rural banking system in India made tremendous quantitative achievement by neglecting the qualitative aspects of the credit delivery system (Shivamaggi, 2000). The inequalities in the banking system across the regions and social classes persisted (Bell, 1990). Hence an attempt was made to analyze the "Impact of economic reform on the regional disparity in the distribution of agricultural credit".

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The findings of the study showed that the Southern Region (Rs.101659 crore) dominated the other region Northern Region (Rs.69630 crore), Central region (Rs.45988 crore) Western region (Rs.61613 crore), Eastern Region (Rs.26760 crore)and Northeastern region(Rs.2436 crore). The Theils inequality index was calculated to estimate the regional disparity in the distribution of agricultural credit among states. The disparity index was higher for the agricultural loan accounts than the agricultural credit. Higher credit intensive states with higher number of villages, borrowing members of co-operatives, higher amount of commercial and co-operative banks deposits, credit deposit ratio of commercial banks as per utilization, infrastructure development fund sanction, infrastructure development fund disbursement, non performing assets of commercial banks and state domestic product were distinguished from the low credit intensive states. The state domestic product alone contributed 98.85 percent in discriminating the high credit intensive and low credit intensive states. It shows that the states with higher state domestic product had greater amount of agricultural credit distribution.

INTRODUCTION

The Eleventh Five year plan makes specific focus on the inclusive growth of the economy. It implies that the growth process that experienced over the years were not sufficiently inclusive of all. Although there had been substantial reduction of poverty over past few decades during the five year plans, the core content of the rural poverty remained intractable. In fact, last Ten Five year plan envisaged balanced regional development and equality and employment. But the growth of population and urban biased industrial development have left out the backward section of population and the rural sector in general un-addressed.

There are four specific areas suggested by the writers in order to enhance the process of inclusive growth. These areas are

1. Financial inclusion
2. Small industry expansion
3. Rural and agricultural diversification and development
4. Decentralisation of planning

Financial inclusion means extension of the formal financial structure to the rural areas, which do not have institutional credit access.

By different index, financial inclusion in India is low, even lower than China. The financial index comprising credit deposit ratio per thousand adults, availability of bank services indicates that India rank at a very low level. In West Bengal, one third of panchayat areas do not have any bank branch. It is identified that there are 108 areas where there are no bank office within 10 kilometer radius. (Amalesh Banarjee,2009)

The agricultural credit policies and the economic reform in general aim to have positive influence on the total volume of institutional credit. However, the rural banking system in India made tremendous quantitative achievement by neglecting the
qualitative aspects of the credit delivery system (Shivamaggi, 2000). The inequalities in the banking system across the regions and social classes persisted (Bell, 1990).

Elsewhere, it is also argued that the regions in India that are economically relatively backward have less access to institutional credit than those which are not (Reddy and Laxminarayana, 1997). Ramachandran and Swaminathan (2001) were also of the view that although the advances in the countryside increased substantially, such an increase was an uneven, as was the case with green revolution, across regions, crops and classes. Hence an attempt was made to analyze the "Impact of economic reform on the regional disparity in the distribution of agricultural credit". The following are the specific **objectives** of the study.

To analyse state wise distribution of agricultural credit

To assess the Regional disparity in the distribution of agricultural credit in India

To identify the determinants of regional disparity in the distribution of agricultural credit

METHODOLOGY

Data for the study were collected from the secondary sources. The secondary data on state wise distribution of agricultural credit and determinants of disparity in the distribution of agricultural credit were collected from the following sources

1. Handbook of Indian economy, (2009), Reserve Bank of India, Bombay.
2. Banking Statistics in India, (2009) Reserve Bank of India, Bombay.

3. Economic survey (2009), Government of India publication, New Delhi.

The regional disparity in the distribution of agricultural credit was analyzed based on the state wise data .The regional disparity and the determinants of regional disparity in the distribution of agricultural credit was analyzed by taking the year 2008 only (Available recent year data). To identity the variables which discriminate the states into high credit and low credit intensive states, discriminant analysis was carried out. The analysis was carried out by taking the data pertaining to the states for the year 2008.

Out of the total states in India, 8 states such as Missorem, Manipur, Tripura, Bihar, Nagaland,Himachal Pradesh, Megalaya and Sikkim were excluded from the analysis due to the non availability of data for independent variables. Only 21 states were retained for the analysis. The union territories were excluded in the analysis. The form of the Discriminant equation used in the study was

$$Z = L1X1+L2X2+L3X3+L4X4+L5X5+L6X6+L7X7+L8X8+L9+X9+L10+X10+L11X11+L12X12$$

Z= Discriminant total scores for low and high credit intensive states.

Xi = Number of primary agricultural co-operatives, number of villages in the states, ratio of primary agricultural co – operatives to number of villages, number of members of the co – operatives (Rs crore), number of borrowing members, amount of deposits of both commercial and cooperatives, amount of borrowings of both commercial – co-operative banks (Rs crore), credit deposit ratio as per sanction, credit deposit ratio as per utilization, rural infrastructure development fund sanctioned (Rs crore), rural infrastructure fund disbursed (Rs crore), non performing assets of commercial banks (Rs crore), state domestic product (Rs crore) and area under crops (Rs crore) In the process of analysis, area under crops was excluded.

RESULTS AND DISCUSSION

The regional disparity in the distribution of agricultural credit was analyzed under the following heads.

STATE-WISE DISTRIBUTION OF AGRICULTURAL OUTSTANDING ADVANCES IN INDIA IN 2008.

STATE- WISE DISTRIBUTION OF AGRICULTURAL OUTSTANDING ADVANCES IN INDIA IN 2008.

The agricultural credit policies, in general, aim to have positive influence on the total volume of institutional credit, the use of agricultural inputs, investment on machinery and irrigation, agricultural output and productivity, rural income distribution and so on. Therefore, to ensure sufficient and timely credit to agriculture

sector at reasonable rate of interest, the expansion of formal lending institutions, directed lending and subsidized credit policies were introduced at different points of time.

Undeniably, these resulted in a vast network of rural financial institutions and rapid growth of lending to all sectors including agriculture. However, the rural banking system in India made tremendous quantitative achievement by neglecting the qualitative aspect of the credit delivery system (Shivamaggi, 2000). The inequalities in the banking system across the regions and social classes persisted (Bell,1990).

The distribution of outstanding agricultural advances according to states in India in 2008 is represented in table -1

TABLE – 1 STATE WISE DISTRIBUTION OF OUTSTANDING ADVANCES IN INDIA IN 2008

(Amount in Rs. crore)

States	Number of accounts	Number of Amounts
Northern Region	**2960868**	**69630**
Delhi	31635	20641
Punjab	827615	16239
Haryana	561745	12359
Chandigarh	9451	3721
Jammu & Kashmir	56542	940
Himachal Pradesh	175465	1496
Rajasthan	1298415	14233
North-Eastern Region	**434001**	**2436**
Assam	280516	1514
Meghalaya	37553	128
Mizoram	13131	293
Arunachal Pradesh	1422	28
Nagaland	21997	148
Manipur	21139	112
Tripura	58243	213
Eastern Region	**3656089**	**26760**
Bihar	1173576	5657
Jharkhand	423835	1464
West Bengal	1106316	14105
Orissa	941486	5464
Sikkim	9022	61
Andaman& Nicobar	1854	10
Central Region	**5955639**	**45988**
Uttar Pradesh	4040993	26661
Uttarakhand	281526	2201
Madhya Pradesh	1377245	14523
Chattisgarh	255875	2603
Western Region	**2975328**	**61613**
Gujarat	1098017	14185
Maharashtra	1854880	47095
Daman &Diu	113	2
Goa	21480	323
Dadra & Nagar Haveli	838	7
Southern region	1.50+07	101659
Andhra Pradesh	5570574	32920
Karnataka	2063430	23057
Lakshadweep	774	2
Tamilnadu	5314272	30974
Kerala	1716367	14229
Puducherry	69853	477

Total	6.10E+07	616174

Source: Banking Statistics in India, Reserve Bank of India.

It was inferred that the number of agricultural loan accounts pertaining to Andhra Pradesh was 5570574. It was the highest one compared to other states and union territories. Next to Andhra Pradesh , Tamilnadu had the highest number of agricultural accounts (5314272) and Uttar Pradesh (4040993).

The state of Maharashtra dominated in the outstanding amount of agricultural credit (Rs.47095) compared to other states. Next to Maharashtra, Andhra Pradesh had the highest amount of agricultural credit (Rs.32920 crore) and Tamilnadu (Rs.30974 crore). The region wise analysis reveals that the Southern Region (Rs.101659 crore) dominated the other region Northern Region (Rs.69630 crore), Central region (Rs.45988 crore) Western region (Rs.61613 crore), Eastern Region (Rs.26760 crore)and Northeastern region(Rs.2436 crore).

The Theils inequality index was calculated to estimate the regional disparity in the distribution of agricultural credit among states. It was found that the index was 0.3807and 0.3023 for the agricultural loan accounts and for the distribution of agricultural credit outstanding respectively. It shows that the disparity was higher for the agricultural loan accounts than the agricultural credit.

DETERMINANTS OF REGIONAL DISPARITY IN THE DISTRIBUTION OF AGRICULTURAL CREDIT

To identify the factors which discriminate the states into high credit intensive and low credit intensive states, discriminant analysis was carried out. The analysis was carried out by taking the data pertaining to the states for the year 2008.

Out of 29states, 8 states such as Misorom, Manipur ,Tripura, Assam, Bihar, Nagaland, Himachal Pradesh and Mehalaya were excluded from the analysis due to the non-availability of data for some independent variables. Only 21 states were retained for the analysis. The union territories were not included. It was assumed that certain banking and credit related factors such as number of primary agricultural co-operatives societies, number of villages in the states, ratio of number of primary agricultural co-operative societies to number of villages, number of members in the

primary agricultural co – operative societies, borrowing members of co-operatives, amount of deposits of co-operatives and commercial banks, borrowings of commercial and – co-operative banks, credit deposit ratio as per sanction, credit deposit ratio as per utilization, amount of rural infrastructural development fund sanctioned, amount of rural infrastructural development fund distribution, non performing assets of commercial banks, state domestic products and area under crops

would discriminate states into high credit intensive and low credit intensive states. But in the process of analysis, area under crops was excluded.

The first step in the discriminant analysis was the estimation of the mean and standard deviation of the selected variables. The mean and standard deviation of the variables included in the discriminant analysis are shown in table - 2

TABLE - 2

MEAN AND STANDARD DEVIATION OF THE SELECTED VARIABLES IN THE DISTCRIMINANT ANALYSIS

Variables	Group 1-Mean	Group 2-Mean
Number of primary agricultural co-operative societies	1575.6364	5835.2000
Number of villages in the states	15682.727	34981.600
Ratio of Number of primary agricultural co-operative societies to number of villages	12.0909	7.0000
Number of members in the primary agricultural co-operative societies	2597.3636	9354.9000
Borrowing members of co-operatives	753.6364	3767.7000
Amount of deposits of co-operatives and commercial banks	377.8182	2033.9000
Borrowings of commercial and co-operative banks	365.0909	3804.6000
Credit deposit ratio as per sanction	41.7636	77.2700
Credit deposit ratio as per utilization	52.8273	82.3000
Amount of rural infrastructure development fund sanctioned	97.9091	195.8000
Amount of rural infrastructural development fund distribution	76.0909	178.9000
Nonperforming assets of commercial banks	407.3636	1414.400
State domestic product	51676.754	220744.80

All variables except primary agricultural co – operatives per village were higher for the states of higher credit intensity. The co-operatives per village is higher for the states with low credit intensive. Initially to test the mean differences between the selected groups, Wilk's lamda (U statistics) and its equivalent univariate 'F' test, one way analysis of variances was calculated. The value of Wilk's lamda and 'F' ratio for the selected variables are shown in table -3

TABLE – 3

TESTS OF EQUALITY OF GROUPS MEANS

Variables	Wilks' Lamda	F
Number of primary agricultural co-operative societies	.777	5.449*
Number of villages in the states	.852	3.292*
Ratio of Number of primary agricultural co-operative societies to villages	.904	2.023*
Number of members in primary agricultural co-operative societies	.729	7.071*
Borrowing members of co-operatives	.911	1.853*
Amount of deposits of co-operatives and commercial banks	.462	22.166*
Borrowings of commercial co-operative and banks	.378	31.216*
Credit deposit ratio as per sanction	.483	20.321*
Credit deposit ratio as per utilization	.378	31.216*
Rural infrastructure development fund as per disbursement	.796	4.882*
Rural infrastructure development fund as per utilization	.716	7.538*
Nonperforming assets of commercial banks	.821	4.150*
State domestic products	.498	19.157*

***-significant at 5% level.**

the value of Wilk's lamda approaches one, there is no significant differences in the means of two groups and vice versa. In the above table , the co-efficient of Wilk's lamda associated with number of primary agricultural co-operative societies, borrowing members of co-operatives , credit-deposit ratio as per sanction of the commercial banks, credit-deposit ratio as per utilization of credit, Rural infrastructure development fund sanctioned, Rural infrastructure development fund disbursed, non performing assets of both commercial and co-operative banks and state domestic product were statistically significant. It implies that there were significant differences between the above mentioned variables between high credit intensive and low credit intensive states.

The percentage of cases correctly classified was also used as an index of effectiveness of the discriminant function. The table -4 shows the classification results obtained from the multiple discriminant analysis.

TABLE - 4

CLASSIFICATION RESULTS

Actual group	Low credit intensive states	High credit intensive states
Low credit intensive states	10 (90.91%)	1 (9.09%)
High credit intensive states	1 (10%)	9 (90%)

The table –3 indicates that, in case of low credit intensive states, out of 11states, 10 were identified correctly. Similarly out of 10 high credit intensive states, 9 states were identified correctly. The overall percentage of cases classified correctly was 90.48 percent.

The table -5 exhibits the pooled within group correlation between the discriminating variables and canonical discriminant function. The correlation co – efficients were ranked according to their contributions in the discriminant function.

TABLE - 5

POOLED WITHIN – GROUPS CORRELATION BETWEEN DISCRIMINATING VARIABLES AND STANDARDIZED CANONICAL DISCRIMINANT FUNCTION

Variables	Function
Number of primary agricultural co-operative societies	.148
Number of villages in the states	.115
Ratio of number of primary agricultural co-operative societies Total number of villages	-.090
Number of members in the primary agricultural co-operative societies	.148
Borrowing members of co-operatives	.169
Amount of deposits of co-operatives and commercial banks	.087
Borrowings of commercial and co-operative banks	.299
Credit deposit ratio as per sanction	.355
Credit deposit ratio as per utilization	.287
Rural infrastructure development fund disbursement	.140
Rural infrastructure development fund as per utilization	.174
Nonperforming assets of commercial banks	.129
State domestic product	.278

It was apparent from the table -5 that credit deposit ratio of scheduled commercial banks had the highest contribution in the function with co – efficient of 0.355 followed by borrowing of commercial and co-operative banks –0.299

The other tests used in the process of discriminant analysis were the relative discriminating power of the variables. It was calculated based on the unstandardized co –efficient obtained from the analysis. The unstandardized co-efficient of the variables formed the discriminate equation which is as under,

Z =-5.779-0.001x1+0.00106x2-0.026x3-0.001x4+0.00052x5+0.000192x6-0.000788x7+0.001554x8+0.02921x9+0.04804x10+0.00018x11+0.009827x12.

The above equation indicates that higher credit intensive states with higher number of villages, borrowing members of co-operatives, higher amount of commercial and co-operative banks deposits, credit deposit ratio of commercial banks as per utilization, infrastructure development fund sanction, infrastructure development fund disbursement, non performing assets of commercial banks and state domestic product were distinguished from the low credit intensive states. The results of the other test namely relative discriminating power of the variable showing the relative contribution of the variables calculated is given in table -6

TABLE – 6

MEAN DIFFERENCE AND UNSTANDARDISED DISCRIMINANT CO-EFFICIENTS

Variables	Group 1 Mean	Group 2 Mean	Mean difference	Unstandardised Co efficient	Relative discriminant power
Number of primary agricultural co-operative societies	1575.636	5835.2	4259.56	.00057	.149005
Number of villages in the states	15682.73	34981.6	19298.9	.000106	.125545
Ratio of Number of primary agricultural co-operative societies	12.09091	7	5.090909	.02608	.008148
No of member in primary agricultural co-operative societies	2597.364	9354.9	6757.54	.00052	.0215652
Borrowing members of co-operatives	753.6364	3767.7	35.5064	.00052	.09620-2
Amount of deposites of co-operatives and commercial banks	377.8182	2033.9	1656.08	.000192	.019514
Borrowings of commercial co-operative banks	365.0909	3804.6	3439.59	.000192	.040529
Credit deposite ratio as per ssanction	41.76364	77.27	35.5064	.000788	.001717
Credit deposite ratio as per utilization	52.82727	82.3	29.4727	.001854	.003353
Rural infrastructure development fund disbursement	97.90909	195.8	97.8909	.02921	.175483
Rural infrastructure development fund as per utilization	76.09091	178.9	102.809	.04804	.303107
Nonperforming assets of commercial banks	407.3636	1414.4	1007.04	.00018	.01112
State domestic product	51676.75	220744.8	169068	.0009527	98.8506

The above table reveals that the state domestic product alone contributed 98.85 percent in discriminating the high credit intensive and low credit intensive states. It shows that the states with higher state domestic product had greater amount of agricultural credit distribution.

CONCLUSION

The region wise analysis reveals that the Southern Region (Rs.101659 crore) dominated the other region Northern Region (Rs.69630 crore), Central region (Rs.45988 crore) Western region (Rs.61613 crore), Eastern Region (Rs.26760 crore)and Northeastern region(Rs.2436 crore). The Theils inequality index was calculated to estimate the regional disparity in the distribution of agricultural credit among states. It was found that the index was 0.3807and 0.3023 for the agricultural loan accounts and for the distribution of agricultural credit outstanding respectively. Higher credit intensive states with higher number of villages, borrowing members of co-operatives, higher amount of commercial and co-operative banks deposits, credit deposit ratio of commercial banks as per utilization, infrastructure development fund sanction, infrastructure development fund disbursement, non performing assets of commercial banks and state domestic product were distinguished from the low credit intensive states. It shows that the disparity was higher for the agricultural loan accounts than the agricultural credit. The state domestic product alone contributed 98.85 percent in discriminating the high credit intensive and low credit intensive states. It shows that the states with higher state domestic product had greater amount of agricultural credit distribution.

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