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DETERIMINANTS OF CREDIT ALLOCATION IN ARICULTURAL SECTOR IN COIMBATORE DISTRICT

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ABSTRACT

The diversification of a large fraction of bank credit from the traditional sector to the priority sector is a remarkable feature of credit deployment in the post nationalization era. Due to various policy measures of the government, the priority sector lending had increased considerably. The priority sector lending witnessed a growth of 18 per cent in 2010-11 over the year 2009-2010. However, the growth of agricultural advances decelerated to 9 per cent in 2010-11 as compared with the growth of 23 per cent in

2009-2010. In 2010-11, at the aggregate level, banks have lent more than 40 per cent of their Adjusted Net Bank Credit to priority sectors. The sub-target prescribed for agriculture at 18 per cent of Adjusted Net Bank Credit was also achieved by banks in 2010-11(Report on trend and progress of banking, 2011). The bank-wise data on priority sector advances as per cent of ANBC, however, indicated that seven out of 26 public sector banks were not able to meet the priority sector lending target of 40 per cent of ANBC in 2010- 11. Further, it is a concern that 18 out of 26 public sector banks could not meet the target set for agricultural advances in 2010-11. Among the private sector banks, only one bank could not meet the priority sector lending target in 2010-11. However, ten private sector banks did not meet the target set for agricultural advances in 2010-11 . Foreign banks have a slightly different norm for priority sector lending as the target for them is set at 32 per cent of ANBC. Further, export credit is a part of priority sector lending of foreign banks. In 2010-11, at the aggregate level, foreign banks achieved the target of priority sector lending. However, at the bank-level, a few banks could not meet the priority sector lending cent as compared with the industry average of 22 per cent in 2010-11 (Report on trend and progress of banking, 2011).

In this backdrop, an attempt was made to identify the factors determining credit allocation in agricultural sector in Coimbatore district.

The factor analysis shows that,among the ten variables, only the number of marginal farmers, the number of agricultural labourers, the number of large farmers and the total area under cultivation could be selected to represent the respective factor components. The Bankers must consider the above four factors in credit allocation to the blocks. Among these factors, only the variables such as the number of large farmers was statistically significant to influence credit allocation among blocks

INTRODUCTION

Availability of cheap and adequate credit is a boon for the Economic Development of a country. By providing credit to farmers, industries, traders and businessmen the economic progress can be achieved. The banking system can influence economic growth by enhancing resources in the direction of national objectives and priorities.

The diversification of a large fraction of bank credit from the traditional sector to the priority sector is a remarkable feature of credit deployment in the post nationalization era. The concept of priority sector lending (PSL) is mainly intended to ensure that assistance from the banking system in an increasing manner to those sectors of the economy which has not received adequate support of institutional finance. The Reserve Bank of India (RBI) emphasized that the priority sector comprised of agriculture (direct and indirect finance), small scale industries (SSI), small road and water transport operators, small business, professional and self-employed persons, education, housing, micro-credit, weaker sections etc. RBI monitors the PSL by commercial banks through periodical return received from the banks and the performance of banks is reviewed in various foray set up under the lead bank scheme (RBI, weblink, 2009)2. Since seventies, RBI and government of India have stipulated some guidelines viz, financing in the priority sector on an increasing scale, more deployment of credit backward regions, preparation and implementation of credit plan and measures for enhancing productivity, employment and economic growth with social justice (Narasimham, 1991).

Due to various policy measures of the government, the priority sector lending had increased considerably. The priority sector lending witnessed a growth of 18 per cent in 2010-11 over the year 2009-2010. However, the growth of agricultural advances decelerated to 9 per cent in 2010-11 as compared with the growth of 23 per cent in 2009-2010. In 2010-11, at the aggregate level, banks have lent more than 40 per cent of their Adjusted Net Bank Credit to priority sectors. The sub-target prescribed for agriculture at 18 per cent of Adjusted Net Bank Credit was also achieved by banks in 2010-11(Report on trend and progress of banking, 2011).

The bank-wise data on priority sector advances as per cent of ANBC, however, indicated that seven out of 26 public sector banks were not able to meet the priority sector lending target of 40 per cent of ANBC in 2010- 11. Further, it is a concern that 18 out of 26 public sector banks could not meet the target set for agricultural advances in 2010-11. Among the private sector banks, only one bank could not meet the priority sector lending target in 2010- 11. However, ten private sector banks did not meet the target set for agricultural advances in 2010-11.

Foreign banks have a slightly different norm for priority sector lending as the target for them is set at 32 per cent of ANBC. Further, export credit is a part of priority sector lending of foreign banks. In 2010-11, at the aggregate level, foreign banks achieved the target of priority sector lending. However, at the bank-level, a few banks could not meet the priority sector lending cent as compared with the industry average of 22 per cent in 2010-11 (Report on trend and progress of banking, 2011).

In this backdrop, an attempt was made to identify the factors determining credit allocation in agricultural sector in Coimbatore district. The following are the specific objectives of the study.

OBJECTIVES

1. To assess the target and achievement in the priori sector advances in Coimbatore district.
2. To identify the factors determining credit allocation to agriculture among blocks in the district.

METHODOLOGY

The study was conducted in Coimbatore district. The study is based on secondary data collected from Annual Credit Plan, Coimbatore District, various issues from 1984-2004.

The factor analysis and co-integration regression analysis were used to fulfill the objectives.

The specification of econometric model is under.

FACTOR ANALYSIS

The variables such as number of cultivators , agricultural labourers , number of marginal farmers, small farmers, semi medium farmers, medium farmers, large farmers, area under cultivation and net cultivated area were hypothesised to

determine the credit allocation among blocks in the district. The above specified factors were large in number. Hence they were put into the factor analysis. The principal component method was used to estimate the factors.

Below is the general form for the formula to compute scores on the first component extracted (created) in the principal component analysis:

C1 = b 11(X1) + b12(X 2) + ... b1p(Xp)

where

C1 = the subject's score on principal component 1 (the first component extracted)

b1p = the regression coefficient (or weight) for observed variable p, as used in creating principal component 1

Xp = the subject's score on observed variable p. (Number of cultivators(X1), Agricultural labourers, (X2), Marginal farmers X3), Small farmers (X4), Semi-medium farmers (X5), Medium formers (X6), Large farmers (X7), Total area (X8), Net cultivated area (X9), Double and multiple Cropped area (X10).

AUGMENTED DICKEY – FULLER TEST AND MULTIPLE REGRESSION ANALYSIS

Econometric and time series models have been based on the assumption that the underlying data process is stationary. Empirically it had been shown that most of the macro variables are non-stationary in nature. Hence, the analysis of non-stationary series with conventional techniques gave rise to a fair possibility of spurious co-movement between variables.

In the present study, non stationary or the presence of a unit root was tested using the Augmented Dickey-Fuller (1979, 1981) test. To test if a sequence Y_t contains a unit root, two different regression equations are considered.

$$\Delta Y_t = \alpha + \gamma Y_{t-i} + \theta_t + \sum_{i=2} \beta_i \Delta Y_{t-i} + \varepsilon_t \ldots \quad (1)$$

$$\Delta Y_t = \gamma Y_{t-i} + \sum_{i=2} \beta_i \Delta Y_{t-i} + \varepsilon_t \ldots \quad (2)$$

The first equation included both a drift term and a deterministic trend and the second does not contain an intercept but include a deterministic trend. In both equations, the parameter of intercept is γ. If $\gamma = 0$, the Y_t sequence has a unit root. The estimated t-statistics is compared with the appropriate critical value in the Dickey-Fuller tables to determine whether the null hypothesis is valid.

In factor analysis ,the variables such as the number of marginal Farmers, Number of Agricultural labourers, Number of large Farmers, total Area under cultivation were identified as the significant factors to deterimine credit allocation. Only the above factors were put into the **Augmented Dickey – Fuller Test.** However, as the variables were stationary, the following form of the regression equation was specified to estimate credit allocation function.

Y = bo + b1x1 +b2X2 + b3x3 +b4x4 + b5x5

Y = Credit allocation across blocks (in crores)

Xi = Number of marginal Farmers, Number of Agricultural labourers, Number of large Farmers, total Area under cultivation (Hectares).

RESULTS AND DISCUSSION

PRIORITY SECTOR ADVANCES IN COIMBATORE DISTRICT – Target and Achievement (1985-2004)

The Coimbatore district had the unique distinction of achieving the allocations under the annual credit plans over the years. Even though there were slight variation in sector wise allocations and achievements, the over all performance of financial institutions was highly satisfactory. This clearly projected that the banking system translate the potentials available in the district in to projections and justified the projections by achieving the same (Annual Credit Plan, 2003-2004).

Thus to test the above stated banking performance in allocation and achievement in priority sector advances in the district for the period 1985-2004, the same was carried out for both the decades. The sector wise allocation and achievement in priority sector advances for the period 1985-1994 is shown in Table I.

TABLE - I

PRIORITY SECTOR ADVANCES IN COIMBATORE DISTRICT – TARGET AND ACHIEVEMENT (1985-2004)

Year		Agri & Allied	SSI	Trade & Services	Total
1985	Target	31.9021	23.5399	16.0738	71.5158
		(100)	(100)	(100)	(100)

	Achievement	47.0735	30.9139	14.1659	92.1533
		(100)	(100)	(100)	(100)
1986	Target	44.9149	28.5666	19.0314	95.2129
		(140.7898)	(121.3539)	(118.4001)	(133.1355)
	Achievement	54.3711	32.3111	15.2569	101.9391
		(115.5026)	(104.5196)	(107.7016)	(110.619)
1987	Target	57.2747	36.6802	25.1361	119.091
		(179.5327)	(155.8213)	(156.3793)	(166.524)
	Achievement	46.4829	25.3846	11.6337	83.5011
		98.7454)	(82.1135)	(82.1247)	(90.6111)
1988	Target	63.55	41.27	24.59	129.41
		(199.2032)	(175.3194)	(152.9819)	(180.953)
	Achievement	66.09	(44.45)	23.14	136.23
		(141.67207)	(153.3291)	(163.35)	(147.8298)
1989	Target	65.63	44.45	25.19	135.27
		(205.7231)	(188.8283)	(156.7147)	(189.147)
	Achievement	74.04	54.02	19.89	147.95
		(157.2859)	(174.7434)	(140.4076)	(160.5477)
1990	Target	67.7	47.62	25.79	141.11
		(212.2117)	(202.2948)	(160.4474)	(197.3130)
	Achievement	81.39	60.64	16.64	158.89

		(172.8998)	(196.1577)	(117.4652)	(172.4192)
1991	Target	78	53.86	26.01	157.87
		(244.498)	(228.803)	(161.8161)	(220.7484)
	Achievement	85.82	50.13	25.89	171.94
		(203.554)	(162.1601)	(182.7628)	(186.5804)
1992	Target	86.68	70.04	36.46	193.17
		(271.7063)	(297.5374)	(226.8288)	(270.1081)
	Achievement	114.05	57.42	28.3	199.77
		(242.2807)	(185.7417)	(199.7755)	(216.7801)
1993	Target	88.48	100.76	29.03	218.27
		(284.5739)	(428.0392)	(180.6045)	(305.2053)
	Achievement	100.64	107.61	27.26	235.51
		(213.7933)	(348.0958)	(192.4339)	(255.5633)
1994	Target	98.4	127.13	21.75	241.28
		(308.4436)	(237.4491)	(135.3134)	(337.3799
	Achievement	103.48	204.26	13.76	321.52
		(219.8264)	(660.7384)	(97.1347)	(348.8959)

Source : Annual Credit Plan, Coimbatore district, various issues

Note : Figures in Paratheses indicate index values

SSI : Small scale industries

The achievement performance in agricultural advances was fond to be better in the period 1985-1994 except during 1987. It can be seen from the comparison of achievement and targeted amount of agricultural advances and also through the increased index values of achievement In relation to small scale industries, the achievement fall short of the target in the years 1987, 1991 and 1992. The common observation as the reason for the short fall of achievement in small scale industries in 1991 and 1992 was that more funds were allocated and diverted to other priority sector namely agriculture and allied activities.

The achievement performance in trade and services showed that in almost all the years the targeted amount was not achieved. Therefore the commercial banks in the district did not perform well in relation to credit to trade and services which was indicated by the declining index value (97.13 percent) in 1994 in trade and services. However the achievement performance was found to be better in the total priority sector advances in the decade except during the year 1987. It proved the unique achievement performance in the priority sector advances in the district in the period 1985-1994.

The amount planned to be given as loans and advances and the actual amount given to the priority sector for the period 1995-2004 are shown in Table II.

TABLE – II

PRIORITY SECTOR ADVANCES IN COIMBATORE DISTRICT – TARGET AND ACHIEVEMENT (1995-2004)

Year		Agri & Allied	Ssi	Trade & Services	Total
1995	Target	102.22	287.09	34.79	424.1
		(320.4178)	(1219.5889)	(216.4392)	(593.0158)
	Achievement	112.59	421.21	32.54	566.34
		(239.1792)	(1362.5662)	(229.7065)	(614.5629)
1996	Target	125.72	385.95	45.01	556.68
		(394.0806)	(1636.5567)	(280.0209)	(778.4014)
	Achievement	124.7	695.57	46.04	866.91
		(264.9049)	(2250.0234)	(325.0058)	(940.7259)
1997	Target	149.39	564.78	69.13	782.8
		(468.2764)	(2399.2455)	(430.0788)	(1094.5833)
	Achievement	145.53	1033.03	65.73	1244.29
		(309.1548)	(3341.6559)	(464.0016)	(1350.2392)
1998	Target	171.95	895.41	73.6	1140.96
		(538.9927)	(3803.7969)	(457.8879)	(1595.3957)
	Achievement	176.25	1143.18	94.87	1414.1
		(374.4145)	(3697.9482)	(668.2949)	(1534.50826)
1999	Target	212.97	1101.59	91.26	1405.82
		(667.5736)	(4679.6715)	(567.7562)	(1965.7474)
	Achievement	237.37	1311.45	78.23	1627.05
		(504.2539)	(4242.2664)	(552.2417)	(1765.5906)
2000	Target	243.45	1244.9	138.31	1626.66
		(763.1159)	(5288.4677)	(976.3587)	(2274.5063)

	Achievement	247.03	1425.15	154.59	1826.77
		(524.7751)	(4601.0621)	(1091.2826)	(1982.3164)
2001	Target	272.75	1565.18	173.21	2011.15
		(854.9594)	(6649.0512)	(1077.5921)	(2182.3961)
	Achievement	310.92	1569.12	252.01	2132.06
		(660.499)	(5075.7749)	(1178.9904)	(2313.6014)
2002	Target	315.11	1836.78	255.48	2407.37
		(987.7406)	(7802.8369)	(1589.4188)	(3366.2072)
	Achievement	389.45	1072.63	373.62	2465.72
		(827.3232)	(3469.7337)	(2637.4604)	(2675.6719)
2003	Target	366.03	1948.27	312.98	2627.28
		(1147.3539)	(8276.4583)	(1947.1438)	(3673.7057)
	Achievement	480.63	1806.81	375.86	2663.31
		(1021.0203)	(5844.6524)	(2653.273)	(2890.0864)
2004	Target	NA	NA	NA	NA
	Achievement	NA	NA	NA	NA

Source : Annual Credit Plan, Coimbatore district, various issues

Note : Figures in Paratheses indicate index values

SSI : Small scale industries

The planned amount of lending in agriculture and allied activities and increased from Rs.102.22 crore in 1995 to Rs.366.03 crore in 2003. It showed an increase of Rs.263.81 crore in the decade and it was approximately 258.08 percent to the initial period

targeted amount. Though the achievement performance revealed an increasing tend, it was fall short of the target amount during 1996 and 1997. Both target and achievement had grown in the selected decade due to increased cost of production particularly, the withdrawal of fertilizer subsidy had greater impact on cost of production.

The planned and achieved amounts for small scale industries were greater than in agriculture and allied activities. It shows that, greater share of loans and advances had gone to small scale industries. The amount of achievement in small scale industries was greater from the targeted amount between the period 1995-2001. However there was fall short of achievement from the targeted amount from 2002 onwards. The index value also shows that there was decline in it between 2001 and 2002.

In case of trade services, the achievement index was less than target index only during 1999. It shows that the increase in the credit achievement was less than that of the increase in the targeted credit amount during this period.

The total credit performance to priority sector shows that the financial agencies in the district had achieved their targeted and planned amount but from 1998 onwards, the increase in the achievement was less than the increase in the targeted amount. It would be obtained from the index value of the target and achievement.

DETERMINANTS OF CREDIT ALLOCATION – FACTOR ANALYSIS

Before analyzing the significance of the variables to influence the amount of credit by using regression analysis, the number of variables had to be reduced into limited number of factors and principal components as the included variables were large in

number and multicollinear. For this purpose, factor analysis was employed by including the above ten factors in the analysis.

In the factor analysis, the correlation matrix and the rotated factor loadings were estimated which are shown in Table III and IV.

TABLE III

FACTOR ANALYSIS – CORRELATION MATRIX

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
Cultivators (X1)	1	.407	.170	.354	.185	.099	003	300	353	353
Agri labourers (X2)	.407	1	.110	.014	.249	.433	.332	.225	.479	.479
Marginal farmers (X3)	.170	.110	1	.000	.023	.315	.190	.431	.015	.015
Small farmers (X4)	.354	.014	.000	1	.007	.309	.329	.275	.061	.061
Semi-medium farmers (X5)	.185	.249	.023	.007	1	.346	.283	.034	.079	.079
Medium formers (X6)	.099	.433	.315	.309	.346	1	.359	.199	.263	.263
Large farmers (X7)	.003	.332	.190	.329	.283	.359	1	.451	.138	.138
Tota area (X8)	.300	.225	.431	275	.034	.199	.451	1	.129	.129
Net cultivated area (X9)	.353	.479	.015	.061	.079	.283	.138	.129	1	.354
Double and multiple Cropped area (X10)	.140	.010	.241	.270	.108	.336	.490	.137	.354	1

TABLE IV

FACTOR ANALYSIS – ROTATED FACTOR LOADINGS

VARIABLES	FACTORS			
	1	2	3	4
Cultivators	.4683E.03	-6.65E.02	.861	-282
Agri Labourers	.179	.839	-9.55E.02	-3.24E.02
Marginal Farmers	.844	.199	.196	-4.34E.02
Semi-medium farmers	.797	.364	.160	4.838E.02
Medium farmers	.644	.178	-6.92E.03	.597
Large farmers	-8.34E.02	-.311	-.287	.634
Total area	.136	-9.74E.02	.889	.144
Net cultivated area	-.118	.375	9.460E.02	.793
Double and multiple	-.773	.164	-.130	.181
Cropped area	-7.59E.02	-.779	5.868E.02	-.141

The rotated factor loading formed four factors by taking the ten variables included in the analysis. The factor loading of a variable in a factor shows the correlation between the variables and the factor. The variables with the greater factor loadings from a factor. The variables in the grouping of different factors are given as follows:

TABLE V

FACTOR ANALYSIS – FACTOR COMPONENTS

Factor – I	Factor – II
Marginal farmers Small farmers Semi-medium farmers Net cultivated area	Agricultural labourers Double and multiple cropped area
Factor – III	**Factor – IV**
Cultivators Large farmers	Medium farmers Total area

The first factor included the variables namely number of marginal farmers, the number of small farmers, the number of semi-medium farmers and net cultivated area. These variables were related with size of land and therefore factor – I may be called as land related factors. The second factor included only the variables namely agricultural labourers and double and multiple cropped area. These variables were related with agricultural inputs and cropping pattern. The variables namely the number of cultivators and number of large farmers formed the third principal component, the fourth component included the variables namely the number of medium farmers and total area under cultivation.

Among these set of factors formed four principal components, the contribution of the number of marginal farmers (0.844) to the first principal component was greater, whereas in the second principal component, the contribution of the number of agriculture labourers was significant. Similarly in the third principal component, the number of large farmers, emerged as a significant factor. In the fourth component, the total area under cultivation was observed to be significant factor.

Thus to conclude among the ten variables namely the number of marginal farmers, the number of agricultural labourers, the number of large farmers and the total area under cultivation could be selected to represent the respective factor components. The Bankers must consider the above four factors in credit allocation to the blocks.

DETERMINANTS OF CREDIT ALLOCATION – REGRESSION ANALYSIS

Among ten variables only four important variables namely number of marginal farmers, agricultural labourers, large farmers and total area under cultivation representing the factors in the factor analysis were selected and put into the regression analysis, to identify the determinants of amount of credit allocation across various blocks in Coimbatore district.

The estimated regression results are shown in Table VI.

TABLE VI

DETERMINANTS OF CREDIT ALLOCATION – REGRESSION ANALYSIS

Variables	Regression co-efficients	't' statistic
Constant	178.080	.949
Marginal Farmers	-1.88E-02	-.702
Agricultural labourers	4.937E-03	1.281
Large Farmers	3.493	3.587**
Total Area	3.972E-03	1.212
F-Test	1.49	
R-Square	0.30	
Durbin Watson	2.015	

** - significant at 1% level.

The tables shows that the selected individual variables namely the number of marginal farmers in various blocks, number of agricultural labourer, and total area under cultivation were not statistically significant to influence the allocation of amount which were observed from the 't' statistics of each variables. Only the variable number of large farmers was statistically significant to influence credit allocation among blocks.

From the results of the regression analysis it was also found that the estimated R2 value was 0.3 which implies that only 30 percent of the variation in the amount of credit allocation across various blocks was explained by the selected factors and the

model. The random factors may be the cost of cultivation, income, expenditure pattern of the farmers and socio economic factors of the farmers, which were the house hold level and farmer borrowers side factors. The analysis of these factors was beyond the scope of the study in which only the block level aggregate data were analysed.

CONCLUSION

The total credit performance to priority sector shows that the financial agencies in the district had achieved their targeted and planned amount but from 1998 onwards, the increase in the achievement was less than the increase in the targeted amount. It would be obtained from the index value of the target and achievement. The factor analysis shows that,among the ten variables, only the number of marginal farmers, the number of agricultural labourers, the number of large farmers and the total area under cultivation could be selected to represent the respective factor components. The Bankers must consider the above four factors in credit allocation to the blocks. Among these factors, only the variables such as the number of large farmers was statistically significant to influence credit allocation among blocks

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