IMPACT OF SOCIAL FACTORS ON THE BUSINESS OF COOPERATIVE BANKS - AN EMPIRICAL INVESTIGATION

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ABSTRACT

In Indian banking, particularly the cooperative banking system, which is not categorized specifically as a profit earning system, the social role played by them is the key in deciding the quantum of business of these banks. An attempt has been made in this paper to estimate the impact of the identified social factors on the business magnitude of cooperative banks. In an attempt to compare the role of social factors in dictating the business of cooperative banks in the state of Punjab (India) in pre-reform (1991-92 to 1993-94) versus post-reform period (2000-01 to 2002-03), a sample of six rural cooperative banks is taken. Correlation and stepwise multiple regression methods of statistics are used to analyze and arrive at conclusions. The social factors identified for the purpose of this paper are per capita loans, per capita deposits, per capita agricultural loans, number of square kilometres (kms) of area per branch office, credit to deposit (CD) ratio and number of members.

Four variables: per capita deposits, number of sq. kms of area per branch office, number of members and CD ratio have significant bearing on business volume of cooperative banks in the pre-reform period. However only per capita deposits and CD ratio continued to play significant roles in the post-reform period too. In the post-reform scenario, the social facet is playing a lesser role in defining the business volume of the cooperative banks in Punjab, that too in a negative sense.

INTRODUCTION

An age old criteria for measuring the performance of any financial institution has been judging its profitability through the financial ratios. But financial analysis alone is not sufficient for assessing the performance of rural financial intermediaries. Social factors also play a key role in Indian banking performance. Indian banks, particularly after their nationalisation have been playing a key role in the economic and social transformation of the country. They are being used as an effective vehicle to attain socio economic goals. In view of the importance associated with banking in India, certain social responsibilities are expected to be performed by them. These social responsibilities are: assisting the government in the process of socio-economic development, mobilizing the savings and inculcating the savings habit among individuals, extension of banking facilities in unbanked areas and reorientation of credit deployment in favour of neglected areas, especially the priority sector. Until the nationalization of banks in India, which imposed the social clause on them, rural financing was largely overlooked by formal bankers and therefore dictated by moneylenders who left no stone unturned to manipulate the farmer and rural common man. The bankers are now required to open a prescribed percentage of their branch offices in rural areas and have to finance the agricultural sector on a priority basis. In addition to the normal business performance factors such as profit, business volume, market share, etc., various social performance factors are also considered for performance of banks in India. These social factors are outreach, providing banking facilities to rural areas, utilizing the funds raised (deposits) from a specific area in that area only in the form of loans advanced, etc.

The cooperative credit societies have been established for attaining the social objective of equitable rural development. In the attainment of these objectives, the rural cooperative banks play a judicious and prominent role. As one of the essential ingredients in the analysis of a rural cooperative credit organization is the extent to which they have been able to carry out the social goals entrusted to them, these goals dictate the business performance of these organisations to a great extent. Thus, the role of social factors in the rural cooperative credit institutions become more important to be discussed, particularly in the state of Punjab which is a leading state in the field of agriculture and rural development in India (Dutt and Sundram, 2006).

In this paper, an attempt has been made to estimate the impact of the identified social factors on the business magnitude of cooperative banks in the state of Punjab. An attempt has also been made to see the impact of identified social variables on the business magnitude of cooperative banks in Punjab during the 'pre-reform period' as well as 'post- reform period'.

REVIEW OF LITERATURE

Aggarwal (1991) observed that since a large segment of social banking operations is done through concessional interest rates, subsidies and waiving of loans, the profitability is marred by all this. He observed that bank size is a determinant of its profitability level through working of economies of scale. He also revealed that social factors like, proportion of rural and semi-urban branches to total number of branches, proportion of priority sector advances and proportion of DRI advances in total advances have non-significant coefficients of correlation with profitability of banks. He used Spearman's Rank Correlation Coefficient method to prove this.

Amandeep (1993) attempted to estimate the impact of priority sector lending, credit policies, geographical expansion, industrial sickness, competition, deposit composition, establishment expenses, ancillary income, as well as spread and burden on bank profitability. For this purpose, correlation and regression analysis was used. The problem of multicollinearity was felt because the spread and burden were highly correlated (0.946) with each other. This problem was removed by dropping spread and then dropping burden from the analysis to get better estimates.

Garg (1994), in his empirical study on 'Social Banking' assessed the performance of banks in terms of social banking parameters. The study was conducted on various parameters such as branch expansion, deposit mobilization, advances, CD ratio and priority financing sector for the period of 1981-89. The study concluded that there is a need for changing the existing system of credit regulations, branch expansion, credit deployment etc. so as to help the banks in maintaining their commercial character and fulfilling the social obligations.

Basu (1965) in his work 'Determinants of Regional Imbalances in Banking Developments' has evaluated the inter district variations in per capita credit and deposits. He concluded that other factors remaining constant at their respective average values, the automatic tendency for per capita credit and per capita deposits is to cover their respective average values. An increase in the number of bank offices in relation to population raises per capita deposits more than it does per capita credit.

From Table 2 it can be seen that Per Capita Deposits have a significant positive and CD Ratio have a significant negative relationship with Business Volume. All other variables are insignificantly related to Business Volume. As far as correlation among the independent variables is concerned, there is significant correlation among some of the variables, but this is not so high that the problem of multicollinearity can be felt.

From Table 1 and Table 2, it can be seen that the CD Ratio remained negatively and significantly correlated with Business Volume in both the time periods under study. Per Capita Deposits, which has a positive correlation with Business Volume in 1991-92 to 1993-94, keep its correlation as such but became more significant in 2000-01 to 2002-03. Number of Sq. kms of area per Branch Office and Number of Members lost their significance, when correlated with Business Volume in 2000-01 to 2002-03. Per Capita Loans and Per Capita Agriculture Loans, which has insignificant correlations with the business volume of the cooperative banks in Punjab, dramatically changed their signs but remained insignificant in 2000-01 to 2002-03, as compared to 1991-92 to 1993-94.

Table 1 : Correlation Coefficient Matrix (1991-92 to 1993-94)

	Y	X1	X2	X3	X4	X5	X6
Y	1						
X1	-0.066	1					
X2	0.436*	0.385	1				
X3	0.021	0.959**	0.384	1			
X4	-0.462*	-0.445*	-0.561**	-0.430*	1		
X5	-0.553**	0.520**	-0.530**	0.497*	0.233	1	
X6	0.447*	0.127	-0.250	0.106	-0.313	0.173	1

* Significant at 5%

** Significant at 1%

Table 2 : Correlation Coefficient Matrix (2000-01 to 2002-03)

	Y	X1	X2	X3	X4	X5	X6
Y	1						
X1	0.207	1					
X2	0.532**	0.689**	1				
X3	-0.135	0.751**	0.228	1			
X4	-0.356	-0.574**	-0.562**	-0.336	1		
X5	-0.614**	0.242	-0.455*	0.572**	0.042	1	
X6	0.074	-0.413*	-0.452*	-0.265	0.359	-0.054	1

* Significant at 5%
** Significant at 1%

Regression Analysis

The correlation analysis helps to understand the relationship between the independent variables and the dependent variables. The relationship that the independent variables have among each other is also very well explained by correlation matrices.

Table 3 : Stepwise Multiple Regression Analysis (1991-92 to 1993-94)

Step	Intercept	X5	X6	X3	X1	X2	X4	R2	Adj R2	F- Ratio
1	14671.87	-37.544*						0.306	0.275	9.715
	(9.569)	(3.117)								df (1,22,23)
2	8481.208	-44.088*	6.483*					0.610	0.572	16.398
	(4.389)	(4.695)	(4.040)							df (2,21,23)
3	7691.544	-56.734*	6.391*	750382.7*				0.717	0.675	16.917
	(4.500)	(6.047)	(4.565)	(2.760)						df (3,20,23)
4	7846.818	-53.663*	6.572*	2266558*	-1720583*			0.770	0.721	15.873
	(4.952)	(6.088)	(5.058)	(2.937)	(2.078)					df (4,19,23)
5	4254.184	-25.130	7.558*	2158512*	-2440501	498555.5		0.785	0.725	13.145
	(1.202)	(0.943)	(4.858)	(2.796)	(2.350)	(1.1337)				df (5,18,23)
6	3787.084	-27.910	7.737*	2168376*	-2357771*	490685.4	2.974	0.786	0.710	10.407
	(0.948)	(0.959)	(4.498)	(2.733)	(2.131)	(1.084)	(0.281)			df (6,17,23)

* significant at 5%

Figures in parenthesis are the calculated t values

It is the regression analysis which studies the functional relationships between the variables and provides a basis for prediction. As the business of the CCBs is a result of several variables under study, the impact of each such selected variable on the business volume is studied through the multiple regression analysis. In order to study the contribution of each of the identified independent variables towards banks' business, the stepwise multiple regression analysis is used.

The result of stepwise multiple regression analysis for the period 1991-92 to 1993-94 is presented in Table 3. All the five variables namely, Per Capita Loans, Per Capita Deposits, Per Capita Agriculture Loans, CD Ratio and Number of Members, collectively influence 78.50% of the total business volume of Cooperative Banks. However only Per Capita Agriculture Loans, Number of Members and Per Capita Loans remained significant contributors.

Table 4 : Stepwise Multiple Regression Analysis (1991-92 to 1993-94) After Dropping X1

Step	Intercept	X5	X6	X3	X4	X2	R2	Adj R2	F- Ratio
1	14671.87	-37.544*					0.306	0.275	9.715
	(9.569)	(3.117)							df (1,22,23)
2	8481.208	-44.088*	6.483*				0.610	0.572	16.398
	(4.389)	(4.695)	(4.040)						df (2,21,23)
3	7691.544	-56.734*	6.391*	750387.7*			0.717	0.675	16.917
	(4.500)	(6.047)	(4.565)	(2.760)					df (3,20,23)
4	6071.824	-63.629*	7.025*	972802*	9.309		0.728	0.671	12.713
	(2.385)	(5.145)	(4.421)	(2.589)	(0.863)				df (4,19,23)
5	6810.466	-68.442*	6.833*	1102705	8.971	-92659.1	0.729	0.653	9.675
	(1.667)	(2.841)	(3.747)	(1.636)	(0.804)	(0.235)			df (5,18,23)

* significant at 5%
Figures in parenthesis are the calculated t values

In the discussion on correlation analysis, it was found that some of the independent variables were significantly correlated to each other. Per Capita Loans and Per Capita Agriculture Loans had a high correlation coefficient (0.959), which indicates the problem of multicollinearity. Thus, it becomes necessary to shed either of these two variables in order to arrive at good estimates.

In step 1, it is opted to drop Per Capita Loans. It is quite obvious from Table 4 that the Adj. R^2 keeps increasing until step 3. Therefore, it is the CD Ratio, Number of members and Per Capita Agriculture Loans, which are the significant contributors towards prediction of business volume with 71.70% of coefficient of determination. It is quite interesting to note that the CD Ratio, which was not a significant contributor in the company of Per Capita Loans, becomes a significant negative contributor with the exclusion of Per Capita Loans.

Table 5 : Stepwise Multiple Regression Analysis (1991-92 to 1993-94) After Dropping X3

Step	Intercept	X5	X6	X2	X1	X4	R2	Adj R2	F- Ratio
1	14671.87	-37.544*					0.306	0.275	9.715
	(9.569)	(3.117)							df (1,22,23)
2	8481.208	-44.088*	6.483*				0.610	0.572	16.398
	(4.389)	(4.695)	(4.040)						df (2,21,23)
3	5065.368	-32.748*	7.113*	383649.9*			0.687	0.640	14603
	(2.155)	(3.266)	(4.740)	(2.216)					df (3,20,23)
4	3203.129	-16.472	7.659*	650451.6	-504375		0.692	0.627	10.654
	(0781)	(0.534)	(4.225)	(1.278)	(0.559)				df (4,19,23)
5	2934.153	-18.034	7.762*	646361.4	-452177	1.695	0.692	0.606	8.087
	(0.632)	(0.536)	(3.870)	(1.235)	(0.452)	(0.138)			df (5,18,23)

* significant at 5%
Figures in parenthesis are the calculated t values

If we go for the second option of excluding Per Capita Agriculture Loans from the analysis of 1991-92 to 1993-94 the result, as shown in Table 5, is different from that shown in Table 4. This is step 3, after which the Adj R^2 starts reducing. So, at step 3, CD Ratio, Number of Members and Per Capita Deposits are having significant coefficients of regression. These three variables collectively contribute to 68.70% of the variations in the business volume.

The results of stepwise multiple regression analysis for the period 2000-01 to 2002-03 are presented in Table 6. At the last step, the sixth one, all the variables are seen to be contributing 59.30 % towards the business of the Central Cooperative Banks in Punjab. But here the Adj. R^2 gets reduced from the previous step. Therefore the fifth step shall constitute the final equation in the regression analysis. Only the CD Ratio has emerged as the statistically significant negatively contributing variable.

Table 6 : Stepwise Multiple Regression Analysis (2000-01 to 2002-03)

Step	Intercept	X5	X1	X2	X4	X6	X3	R2	Adj R2	F- Ratio
1	59108.905	-153.165*						0.377	0.348	13.287
	(9.411)	(3.645)								df (1,22,23)
2	51145	-175.974*	972445.2*					0.511	0.464	10.962
	(7.760)	(4.482)	(2.400)							df (2,21,23)
3	57600.286	-246.593*	1909144*	-669554				0.532	0.462	7.574
	(6.077)	(2.931)	(1.790)	(0.950)						df (3,20,23)
4	66970.929	-250.559*	1760076	-802673	-60.151			0.559	0.466	6.021
	(5.227)	(2.988)	(1.643)	(1.126)	(1.081)					df (4,19,23)
5	50646.733	-210.471*	1413417	-406877	-66.032	11.195		0.591	0.477	5.195
	(2.699)	(2.347)	(1.285)	(0.521)	(1.195)	(1.180)				df (5,18,23)
6	50255.574	-205.277*	1634934	-450824	-65.677	11.103	-304464	0.593	0.449	4.130
	(2.605)	(2.196)	(1.233)	(0.554)	(1.158)	(1.140)	(0.318)			df (6,17,23)

* significant at 5%
Figures in parenthesis are the calculated t values

CONCLUSION

It can be concluded from the above discussion that Per Capita Deposits, Number of Sq. kms of area per Branch Office, Number of Members and CD Ratio were significantly correlated with Business Volume in the 1991-92 to 1993-94 period. Only Per Capita Deposits and CD Ratio continued to play a significant role, as far as their relation with Business Volume is concerned in the 2000-01 to 2002-03 period. In the period of 1991-92 to 1993-94, Per Capita Loans, Per Capita Agriculture Loans and Number of Members were statistically significant but, during 2000-01 to 2002-03, only CD Ratio is seen to be significant in explaining 59.10 % of the business volume. **This helps us to conclude that in the post reform scenario, the social facet is playing a lesser role in defining the business volume of the rural cooperative banks in Punjab, that too in a negative sense.** The reduction in CD ratio will help improve business volume of Cooperative Banks in Punjab. It is now the deposit base and not the credit of the Cooperative Banks, which is playing an important role in increasing the business volume of banks. Though, there are other factors but it is the increase in inverse of the CD Ratio, which is to be emphasized for growth in business volume of Cooperative Banks in Punjab.

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