Banking Sector Reforms and Co-operative Credit Institutions in Maharashtra: A Synthesis

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Abstract

The credit cooperatives in Maharashtra have shown slower growth in their membership and institutional financing. On the other hand, a faster growth has been observed in outstandings against loan advances. A lackadaisical attitude of Primary Agriculture Cooperative Credit Societies (PACS) has been observed towards SC/ST members, particularly in terms of their coverage, pattern of loan advances to them and recovery pattern. The study has identified several issues that need to be taken cognizance of to revitalize the rural credit delivery system through the cooperatives. One of these is wide variations in total and crop loan advances across various districts and regions of Maharashtra. A decline in the loan advances with rise in GCA in the Konkan region is another issue, but the most important one among all is the mounting overdues and non-performing assets (NPAs) of the cooperatives operating in both forward and backward regions of Maharashtra. The viability of two central level credit institutions, viz. Sangli District Central Cooperative Bank and Buldana District Central Cooperative Bank, has been estimated. In order to rejuvenate the rural credit delivery system through cooperatives, the major problems facing the system, viz. high transaction cost, poor repayment performance, mounting NPAs, distributional aspect of credit, low coverage of SC/ST members, etc. need to be tackled with more fiscal jurisprudence reserving exemplary punishment for willful defaults, particularly by the large farmers.

Introduction

Credit flows through the cooperatives in rural India and their sustainability, viability and operational efficiency have become the major focus of attention of various policymakers in the era of financial sector reforms. Although reforms in the banking sector were initiated in commercial

banks much earlier (beginning 1991-92), the reform process in the cooperatives has taken a longer time to get started. It was because of the need for generating a consensus among various state governments which govern and control the cooperative credit institutions and to balance the interests of many diversified groups. However, a few major reforms, as indicated by Subrahmanyam (1999), have been introduced in the cooperative credit system.[1] Despite these reforms, the cooperatives are still too weak to face the market forces. The weakness of cooperative banking lies at the primary level. It is pertinent to note that in the majority of states neither the deposit mobilization nor the borrowing membership of Primary Agriculture Cooperative Credit Societies (PACS) is high. For instance, during 1996-97, the borrowing membership was less than a fourth of the total membership in Uttar Pradesh (20 per cent), Karnataka (17 per cent), Assam (20 per cent), and Maharashtra (24 per cent). Even in Andhra Pradesh, which initiated steps to restructure the cooperatives, the proportion of borrowing members was only 29 per cent. The average loan business per primary society was less than Rs 5 lakh in West Bengal, Orissa, Bihar, UP, Maharashtra, AP and Karnataka (Shivamaggi, 2000). Further, while some of the states like Andhra Pradesh, Kerala, Karnataka, Bihar, Rajasthan, etc., have modified their cooperative laws, certain other states like Tamil Nadu, Gujarat and Maharashtra are yet to follow suit and initiate changes in their respective cooperative laws (Elumalai, 1999).

In the present milieu when the cooperative laws are yet to be modified, the rural credit delivery through cooperatives is certainly not functioning well, as the mounting overdues and Non-Performing Assets (NPAs) show. The cooperative banks operating in Maharashtra have shown highest amount of NPAs. The share of Maharashtra in the total NPAs of State Cooperative Banks (SCBs) at all-India level was estimated at 31.76 per cent in 2002, which increased to 37.81 per cent in 2003 and further to 43.16 per cent in 2004. On the other hand, the proportion of NPAs to loans outstanding of SCB was much higher in Maharashtra than the national average, whereas recovery with respect to SCB was perceptibly lower in Maharashtra than the national average during the early 2000. These are certainly disquieting features insofar as the working of cooperative banks in Maharashtra is concerned.

One of the earlier studies conducted on the cooperative sector of Maharashtra has clearly shown better financial health for the institutions at the district level as compared to that at the primary or grass-root level (Shah, 2001). This has necessitated a relooking at the performance of cooperatives engaged in the rural credit delivery in the state, with emphasis on their growing deficiencies that require attention of policymakers to truly

restructure or transform the rural credit delivery through cooperatives. The major objective of this paper was to evaluate the credit delivery through cooperatives across all the districts and regions of Maharashtra with the extension to assessing viability of these credit institutions in the era of financial sector reforms. The paper has initially evaluated the rural credit scenario of Maharashtra with a focus on credit delivery system through PACS and other apex institutions in the state and has subsequently traversed through various deficiencies that impinge the functioning of these credit institutions.

Data and Methodology

Data for this study for the period 1980-81 to 2002-03 were collected from various secondary sources and official records, which encompassed '*Socio-Economic Abstracts of Maharashtra*, Directorate of Economics and Statistics, Government of Maharashtra, Mumbai', '*Agricultural Statistical Information*, Maharashtra State, Part-II, Pune', '*Season and Crop Report*, Commissioner of Agriculture, Department of Agriculture, Maharashtra State, Pune', and '*Cooperative Movement at a Glance in Maharashtra*, Office of the Commissioner for Cooperation and Registrar of Cooperative Societies, Maharashtra State, Pune'.

The effect of various factors on changes in loan advances through Primary Agricultural Cooperative Credit Societies (PACS) operating in Maharashtra was also studied. Though there could be several factors influencing loan advances through PACS, estimates relating to membership of these credit institutions and gross cropped area (GCA) for the concerned districts were collected for the period 1980-81 to 2002-03, due to inconsistency in availability of data on other parameters. The following model was considered for this purpose:

LOAN = f (MEMB, GCA)

where, LOAN = Total loan advances (ST+MT+LT) through PACS in thousand rupees

MEMB = Total membership of PACS in absolute numbers, and

GCA = Total gross cropped area in hundred hectares.

The period between 1980-81 and 2002-03 was divided into two sub-periods, viz. 1980-81 to 1990-91 and 1991-92 to 2002-03. Three alternative specifications (linear, semi-log and Cobb-Douglus) were estimated. Among various specifications, the results of only linear specification of the equations have been furnished in this study considering R^2 and statistical significance of variables.

To evaluate viability of credit institutions, two district level central cooperative banks belonging to forward and backward regions of Maharashtra were selected. For the selection of these districts, a *composite index* was computed for each district.[2] The district of Sangli showed the highest composite score on the scale developed for forward districts. On the other hand, the district of Buldana showed one of the lowest scores on the scale developed for backward districts. These two districts were selected to evaluate their viability during pre- and post-reform periods. The viability of these central level institutions was evaluated through estimation of break-even levels of their loan advances and deposits[3] and various financial ratios, which encompassed liquidity ratios, profitability ratios, financial leverage ratios, efficiency ratios, income ratios, and other diagnostic tools and ratios.[4]

Results and Discussion

Diversification of agriculture over the years has accentuated the need for rapid development of rural infrastructure and a larger flow of credit. Various credit cooperatives, commercial banks and RRBs are by far the major financial institutions engaged in meeting the capital requirements for diversified activities and developing the rural sector of the state. Besides, Land Development Banks (LDBs) are also playing a crucial role in meeting the increasing capital needs of the farmers of this state. Although there has been multi-agency set-up for rural banking, the major institutional finance to farming community in Maharashtra comes from commercial banks and credit cooperatives, with the latter having a significant share in the total rural credit delivery.

Cooperatives Finances

Short- and medium-term set-ups constitute the credit cooperative structure in Maharashtra. A 3-tier system is central to the structure of both short-term and medium-term credit cooperatives. This 3-tire system consists of a Co-operative apex bank at the state level, Central Co-operative banks at the district level and PACS at the village level. The three-tier set-up is meeting the credit requirements of the farmers for not only seasonal agricultural operations (crop loans) but also investing on farm assets that do not entail huge capital outlay. Although there has been a substantial increase in the membership of credit cooperatives in Maharashtra, the trend over the past two decades in terms of cooperative finance has not been very encouraging, especially in recent times.

A slower growth has been observed in institutional finance through credit cooperatives during the decade of economic reforms (1991-2000) as against

Table 1. Cooperative bank finances in Maharashtra: 1980-2000

(Amounts in crore Rs)

Particulars	Period			CGR (%)		
	TE 1982/ 83	TE 1990/ 91	TE 1999/ 2000	1980- 1990	1991- 2000	1980- 2000
No. of cooperative institutions/societies						
Apex	31	34	34	1.33	-	0.37
PACS	18565	19664	20378	-0.03[NS]	0.48	0.65
Total	18596	19728	20412	-0.03[NS]	0.48	0.65
No. of members ('000)						
Apex	1109	1523	1340	1.01[NS]	-1.91	1.65
PACS	5595	7910	10432	4.90	3.48	3.35
Total	6704	9433	11772	4.33	2.72	3.15
Loan advances						
Apex	3318	9298	22195	14.47[NS]	7.12	8.64
PACS	288	929	2280	13.64	9.36	12.93
Total	3606	10227	24475	14.08[NS]	9.74	10.76
Deposit mobilization						
Apex	1224	4618	19913	17.59	18.15	17.28
PACS	12	20	66	7.56	15.42	10.12
Total	1236	4638	19979	17.51	18.14	17.24
Outstanding loans						
Apex	1507	4811	15274	23.97[NS]	13.52	14.57
PACS	431	1521	3456	12.59	9.07	12.92
Total	1938	6332	18730	18.50	12.98	14.64

Source: Computations are based on figures obtained from various issues of '*Economic Survey of Maharashtra*' and '*Cooperative Movement at a Glance in Maharashtra*, Office of the Commissioner for Cooperation and Registrar of Cooperative Societies, Maharashtra State, Pune.

Notes: 1) CGR = Compound Growth Rates
2) All growth rates are significant at 1 per cent level of probability
3) NS: Growth rates not significant at 1 per cent level of probability
4) Apex institutions include SCBs and DCCBs

the decade preceding it (1980-1990), the decade of reform is also marked with higher growth in deposit mobilization of these credit institutions (Table 1).

The reform period has also shown a slower growth in the membership of credit cooperatives in Maharashtra. On the other hand, the outstanding loans of these cooperatives grew at a much faster rate as compared to their loan advances during both pre- and post-economic reform periods, although the post-economic reform period had a slowing down in outstanding loans. One of the reasons for such a slow down could be the prudential discipline

extended to the cooperatives and expression of inability by a large number of banks in meeting Section 11 of Banking Regulation Act, 1949. This had restricted the loaning business of co-operatives to a large extent, as their capital base had eroded. As a result of this precautionary step of banks, the growth in cooperative lending was slower during the period 1991-2000.

Another interesting feature of credit cooperatives, particularly of PACS in Maharashtra, was the increasing trend in their share of medium- and long-term (MT & LT) advances and decline in their share of short-term (ST) advances (Table 2). The trends in recovery and outstanding loans of PACS were similar to their loan advances, i.e. a declining share in short-term recovery and outstanding loans in the face of an increasing trend in their share of MT and LT recovery and outstanding loans during the period between TE 1985 and TE 2000. This is a pointer to the fact that in recent times, MT and LT loans have become the major focus of farm finance.

The main business of PACS in Maharashtra is crop loans. A few of them extend to MT and LT credits also. The increase in MT and LT credits during the period between TE 1985 and TE 2000 could be due to the conversion of ST loans or rescheduling of loans, particularly during the years of climatic adversities. The increase in MT and LT loans through cooperatives was an indication of diversification of cooperative business, which could be an effort made by them to reduce duplication of co-operative finances and transaction cost. Nonetheless, the PACS in Maharashtra are beset with several deficiencies in their functioning. These included their low operational efficiency, high incidence of overdues, low level of recovery, low distribution of ST and MT loans, low coverage of SC/ST members, etc. (Shah, 2000).

During the past two decades (1980-2000), a decline has been observed in the proportion of SC/ST members to the total membership of PACS in Maharashtra (Table 3). Similarly, the percentage of SC/ST in total borrowing members of PACS as well as loan share of SC/ST in total loan advancement has shown a decline.

The scenario in respect of share of SC/ST in total loan recovery, outstanding loans and loans overdue has depicted a declining trend. Thus, the PACS generally did not pay enough attention to their SC/ST members, particularly during the period between the early- and the late-1990s. Therefore, PACS should initiate measures to increase the ST/ST membership in the state of Maharashtra.

Among various types of loans extended by PACS, crop loan is the most important one as farmers' crop activity largely depends on it. Structural changes in crop loan issued by PACS at the aggregate level and also on per borrowing member basis during the period between early-1980s and the late-1990s have been depicted in Table 4.

Table 2. Progress of PACS according to type of loan advances, recovery and outstanding loans in Maharashtra

(Amount in crores Rs)

Period	Short-term	Medium-term	Long-term	Total
		Loan Advances		
TE 1985	280	59	3	342
	(81.79)	(17.35)	(0.86)	
TE 1990	594	185	38	817
	(72.67)	(22.63)	(4.71)	
TE 1995	790	162	29	981
	(80.51)	(16.55)	(2.94)	
TE 2000	1902	543	57	2502
	(76.05)	(21.69)	(2.26)	
		Recovery		
TE 1985	255	34	1	290
	(87.75)	(11.85)	(0.40)	
TE 1990	485	114	24	623
	(77.85)	(18.32)	(3.83)	
TE 1995	656	124	15	795
	(82.51)	(15.64)	(1.85)	
TE 2000	1567	325	33	1925
	(81.37)	(16.90)	(1.73)	
		Outstanding Loan		
TE 1985	381	140	7	528
	(72.23)	(26.53)	(1.24)	
TE 1990	739	388	65	1192
	(61.97)	(32.58)	(5.45)	
TE 1995	1074	631	110	1815
	(59.18)	(34.76)	(6.06)	
TE 2000	2122	1219	190	3531
	(60.09)	(34.52)	(5.39)	

Source: Computations are based on figures obtained from various issues of '*Co-operative Movement at a Glance in Maharashtra*, Office of the Commissioner for Co-operation & Registrar of Co-operative Societies, Maharashtra State, Pune

Notes: i) Figures within the parentheses are percentages to the total
ii) TE: Triennium Ending; ST: Short-term; MT: Medium-term; LT: Long-term

It could be noticed that commercial crops, viz. sugarcane and cotton and the important staple food crops like paddy and millets accounted for about 80 per cent share in total crop loan advances of PACS all through the period between early-1980s and the late-1990s with other field crops like wheat, pulses, oilseeds, etc. accounting for the remaining 20 per cent share.

Table 3. Structural changes in coverage of scheduled casts/scheduled tribes by PACS in Maharashtra: 1981-2000

(Amount in lakh Rs; Members in '000)

Particulars	Triennium Average			Change, %		
	Period 1	Period 2	Period 3	2 over 1	3 over 2	3 over 1
1. Total number of societies	18383	19626	20349	6.77	3.68	10.70
2. Members	5570	7782	9594	39.71	23.29	72.25
- Total SC/ST	1148	1379	1495	20.09	8.41	30.19
- Percentage of SC/ST in total members	20.61	17.72	15.58			
3. Total borrowing members	1520	1885	2561	23.99	35.89	68.49
- Total SC/ST	239	289	323	21.09	11.65	35.20
- Percentage SC/ST in total borrowing members	15.72	15.33	12.61			
4. Total members with outstanding loans	2764	3471	4089	25.58	17.79	47.92
- Total SC/ST	535	277	598	-48.22	116.00	11.84
- Percentage of SC/ST in total members with outstanding loan	19.36	7.98	14.62			
5. Total loans advanced	28832	72375	250126	151.02	245.60	767.53
- Total SC/ST	1710	3335	11336	95.02	239.89	562.81
- Percentage of SC/ST in total loans advanced	5.93	4.61	4.53			
6. Total loans recovered	24419	66135	192549	170.84	191.15	688.53
- Total SC/ST	1419	3586	7549	9152.63	110.53	431.87
- Percentage of SC/ST in total loans recovered	5.81	5.42	3.92			
7. Total loans outstanding	43062	116202	353151	169.85	203.91	720.10
- Total SC/ST	3157	7012	15610	122.13	122.62	394.52
- Percentage of SC/ST in total loans outstanding	7.33	6.03	4.42			
8. Total loans overdue	17490	57432	131255	228.37	128.54	650.44
Total SC/ST	1683	3350	8922	99.01	166.32	430.00
- Percentage of SC/ST in total loans overdue	9.62	5.83	6.80			

Note: Period 1 = 1981 – 1983; Period 2 = 1991 – 1993; Period 3 = 1998 – 2000

Table 4. Structural changes in crop loan advances of PACS in Maharashtra

(Amount in lakh Rs)

Crops	Triennium Average			Change, %		
	Period			2 Over	3 Over	3 Over
	1	2	3	1	2	1
1. Paddy	1629 (107)	3282 (174)	7571 (296)	101.49	130.67	364.78
2. Wheat	620 (41)	1258 (67)	2433 (95)	102.96	93.48	292.68
3. Millets	4548 (299)	12278 (651)	22100 (863)	169.99	79.99	385.96
4. Pulses	246 (16)	1016 (54)	2956 (115)	312.45	190.91	1099.87
5. Cotton	4861 (320)	11051 (586)	32679 (767)	127.35	195.72	572.32
6. Sugarcane	10582 (696)	27027 (1434)	83259 (3251)	155.41	208.06	686.80
7. Oilseeds	1557 (102)	4426 (235)	11995 (468)	184.35	170.99	670.56
8. All others	2546 (168)	8199 (435)	26598 (1039)	221.99	224.41	944.57
Total	26588 (1749)	68537 (3636)	189591 (7403)	157.77	176.62	613.06
Share (%)						
1. Paddy	6.12	4.79	3.99	-	-	-
2. Wheat	2.33	1.84	1.28	-	-	-
3. Millets	17.11	17.91	11.66	-	-	-
4. Pulses	0.93	1.48	1.56	-	-	-
5. Cotton	18.28	16.12	17.24	-	-	-
6. Sugarcane	39.80	39.43	43.92	-	-	-
7. Oilseeds	5.86	6.46	6.33	-	-	-
8. All others	9.57	11.96	14.03	-	-	-
Total	100.00	100.00	100.00	-		

Note: Figures within the parentheses are the amount of loan issued per borrowing members in rupees.

Period 1 = 1981 – 1983; Period 2 = 1991 – 1993; Period 3 = 1998 - 2000

Although crops like pulses, cotton, oilseeds, and other field crops showed 6-10-fold rise in the loan advances, the increase was not very significant when measured on per borrowing member basis. For instance, while per member borrowing for sugarcane, oilseeds, pulses and other field crops rose by more than five fold during the period between early-1980s and late-1990s, this increase was hardly two fold for wheat, paddy and millets during this period.

One of the reasons for higher per member borrowing for sugarcane, oilseeds, pulses and other crops as against wheat, paddy and millets can be traced in cropping pattern and changes in crop composition over time and the scale of finance for a particular crop. The crops like sugarcane absorb larger proportion of the purchased inputs like seeds, fertilizers, irrigation, etc. whose prices have increased over time, whereas millets account for relatively lower cost of cultivation and hence have shown lower scale of

finance. Several crops like wheat, millets, pulses and oilseeds, however, have shown a slowing down in absolute loan advances during the second half as against the first half of the study period. On the other hand, paddy, cotton, sugarcane, and other field crops have shown a major increase in their loan advances during the latter half as against the former half of the overall period. Further, although cotton crop has shown significant increase in loan advances, this increase was hardly two-fold on per member basis.

Although PACS extend loan for varied purposes, short-term crop loans account for the major share in total loan advances. These loans have direct bearing on crop production and are extended on the basis of acreage and cost of cultivation of the crops grown, subject to the repayment capacity of farmers. It is, therefore, essential to evaluate the distribution pattern not only of crop loans but also of total loans advanced by PACS across various districts and regions of Maharashtra. Since distribution of loan is correlated with Gross Cropped Area (GCA), it was evaluated on the basis of per hectare GCA. The estimates relating to distribution of total and crop loans on per hectare GCA basis for the period 1980-81 to 2002-03 have been provided in Tables 5a and 5b, respectively.

A perusal of Tables 5a and 5b reveals wide variations in the pattern of loan advances by PACS across districts and regions of Maharashtra. While Western Maharashtra and Marathwada regions showed significantly high amount of total as well as crop loans extended by PACS, the regions of Vidarbha and Konkan were marked with lower amount of loans. The Western Maharashtra and Marathwada regions also showed higher growth in terms of loan advances by PACS on per hectare GCA basis during the entire period, 1980-81 to 2002-03. Further, though Vidarbha and Konkan regions also showed higher growth in loan advances through PACS during the reform period, this substantial increase could not offset the trend obtainable during the entire period, as the growth in the same was very low during the pre-reform period.

In general, the total loan advances through PACS on per hectare GCA basis in TE 1982-83 to TE 2002-03 increased from Rs 219 to Rs 1904 for Western region, from Rs 112 to Rs 529 for Vidarbha region, from Rs 126 to Rs 1446 for Marathwada region and from Rs 58 to Rs 602 for Konkan region with an overall increase from Rs 129 to Rs 1120 for the state. Such wide variations in total and crop loan advances through PACS could be a matter of concern, particularly in view of the existing cropping pattern and share of various crops in total loan advances of these primary level credit institutions operating in various regions of Maharashtra.

To estimate the effect of factors on total loan advances through PACS in Maharashtra, regressions were estimated. The results of linear

Table 5a. Flow of total credit through PACS in Maharashtra: 1980-81 to 2002-03

(Amount in Rs)

Region/	Total loan per hectare gross cropped area					
District	TE	TE	TE		CGR (%)	
	1982-83	1992-93	2002-03	1980/81-1990/91	1991/92-2002/03	1980/81-2002/03
Western region						
Kolhapur	766.37	1508.68	3278.83	8.60*	7.77*	8.52*
Solapur	97.16	354.65	3086.30	20.87*	26.57*	18.69*
Sangli	246.32	592.69	5393.26	9.71*	23.18*	16.28*
Satara	159.14	536.90	1386.59	15.17*	8.87*	12.43*
Pune	126.70	419.33	1925.09	14.21*	16.31*	14.96*
Ahmednagar	235.49	531.76	725.63	12.84*	1.86	6.12*
Nasik	251.61	684.76	410.25	14.42*	-3.25	1.61
Dhule	148.92	242.93	362.30	12.91*	3.53	4.07*
Jalgaon	252.26	502.96	1926.13	14.29*	16.34*	9.98*
Average	218.64	539.93	1903.78	13.30*	13.58*	11.26*
Vidharba region						
Yavatmal	159.61	125.13	231.71	1.72	6.00*	2.35
Chandrapur	63.48	95.69	611.49	5.86	19.94*	11.64*
Bhandara	66.20	176.79	535.79	12.09*	12.79*	10.71*
Nagpur	66.04	298.61	938.43	14.04*	14.87*	13.62*
Wardha	122.58	194.59	664.57	5.12	13.49*	9.80*
Amravati	131.56	129.10	400.53	3.26	12.94*	8.16*
Akola	117.62	197.06	325.82	5.87	6.06*	5.74*
Buldhana	147.64	166.19	981.00	1.11	20.43*	10.27*
Gadchiroli	17.01	64.18	114.16	11.91*	7.05*	10.72*
Average	111.82	165.57	529.09	5.11*	13.10*	8.66*
Marathwada region						
Aurangabad	127.36	551.44	1608.29	17.41*	10.77*	13.26*
Jalna	137.32	292.13	489.54	12.14*	3.89	6.65*
Parbhani	266.57	483.54	1241.16	12.98*	13.26	9.76*
Beed	149.59	336.23	863.66	14.49*	13.54*	9.81*
Osmanabad	101.29	538.78	4304.31	21.40*	25.80*	20.40*
Nanded	119.80	304.31	1232.92	14.05*	14.20*	10.82*
Latur	42.62	260.89	1343.44	27.72*	20.32*	18.51*
Average	126.29	383.21	1445.76	15.90*	14.70*	12.98*
Konkan region						
Thane	37.04	50.49	416.42	3.78	26.24*	11.63*
Raigad	54.89	207.68	564.08	19.38*	15.34*	10.58*
Ratnagiri	53.94	72.26	222.05	6.48	15.04*	7.17*
Sindhudurg	115.05	245.57	1565.73	13.56*	26.84*	10.57*
Average	57.51	119.69	601.53	12.02*	22.45*	10.50*
Maharashtra state	128.57	327.84	1120.03	12.40*	13.78*	11.22*

Source: Computations are based on figures obtained from 'Socio-Economic Abstracts of different districts of Maharashtra (various years), Directorate of Economics and Statistics, Government of Maharashtra, Mumbai' and 'Agricultural Statistical Information, Maharashtra State, Part-II, Pune'.

Note: * - Represents significance of growth rates at 1 per cent level of probability.

Table 5b. Flow of crop loan through PACS in Maharashtra: 1980-81 to 2002-03

(Amount in Rs)

Region/District	Crop loan per hectare gross cropped area					
	TE	TE	TE	CGR (%)		
	1982-83	1992-93	2002-03	1980/81-1990/91	1991/92-2002/03	1980/81-2002/03
Western region						
Kolhapur	716.45	1185.27	2210.43	7.07*	5.37	6.93*
Solapur	87.97	295.06	2506.17	18.41*	26.18*	18.12*
Sangli	218.21	415.20	2968.57	7.66*	20.08*	13.99*
Satara	132.13	459.61	1342.59	15.52*	10.01*	13.46*
Pune	108.95	282.09	1050.68	10.68*	13.10*	12.67*
Ahmednagar	189.41	336.37	452.30	9.65*	2.30	5.51*
Nasik	223.67	504.23	299.60	11.25*	-3.17	0.88
Dhule	133.84	204.72	233.81	10.74*	1.70	2.39*
Jalgaon	230.14	407.95	1771.76	12.62*	17.31*	10.48*
Average	192.81	403.91	1350.95	11.00*	12.85*	10.47*
Vidharba region						
Yavatmal	101.20	98.01	231.27	1.38	8.47*	4.75*
Chandrapur	50.45	73.83	501.52	6.34*	20.05*	11.59*
Bhandara	52.75	90.99	273.52	5.64*	13.18*	10.04*
Nagpur	59.11	188.00	794.55	12.60*	18.03*	13.64*
Wardha	106.79	141.23	561.01	1.98	14.22*	9.80*
Amravati	78.68	89.21	286.32	4.34*	11.03*	8.16*
Akola	96.56	125.55	280.92	2.22	7.56*	5.45*
Buldhana	113.45	109.04	758.78	0.83	22.54*	10.60*
Gadchiroli	8.93	31.99	82.05	10.81*	10.51*	11.86*
Average	82.51	109.89	421.31	3.77*	14.28*	9.03*
Marathwada region						
Aurangabad	114.06	411.22	1395.31	14.65*	14.39*	13.08*
Jalna	105.40	295.55	453.00	11.52*	2.53*	7.91*
Parbhani	189.88	329.95	1187.58	13.63*	15.15*	11.43*
Beed	66.40	243.86	718.93	17.66*	14.16*	11.50*
Osmanabad	110.24	355.02	3536.16	16.21*	27.58*	19.61*
Nanded	102.82	202.28	1133.88	11.85*	16.80*	11.94*
Latur	37.58	197.08	962.24	27.54*	21.17*	17.84*
Average	97.15	282.55	1216.90	15.48*	15.99*	13.58*
Konkan region						
Thane	32.46	38.25	338.55	1.51	25.85*	11.23*
Raigad	34.78	94.33	441.15	17.43*	17.77*	12.40*
Ratnagiri	32.97	52.82	182.93	7.50*	16.35*	8.55*
Sindhudurg	78.77	185.48	1040.05	14.51*	24.49*	10.60*
Average	39.79	75.79	443.94	10.90*	22.27*	11.09*
Maharashtra state	**103.06**	**244.94**	**858.30**	**11.02***	**14.26***	**11.23***

Source and Note: As in Table 5a

Table 6. Factors affecting total loan advances through PACS in Maharashtra: 1980-81 to 2002-03

Regions/State	Regression estimates

1980-81 to 1990-91

Western region
LOAN = -18429386.5 + 2.6516 * MEMB + 180.2815 GCA
                              (0.8086)   (122.0476)
Adjusted R^2 = 0.8672 F-Statistics = 33.6471 Observations = 11

Vidarbha region
LOAN = -4015568.6 – 0.4228 MEMB + 95.6357 * GCA
                              (0.4302)   (25.0014)
Adjusted R^2 = 0.5758 F-Statistics = 7.7880 Observations = 11

Marathwada region
LOAN = -10911828.6 + 1.1793 MEMB + 223.1239 GCA
                              (1.0009)   (112.9571)
Adjusted R^2 = 0.8163 F-Statistics = 23.2247 Observations = 11

Konkan region
LOAN = -438114.3 + 1.1289 * MEMB – 1.4878 GCA
                              (0.1928)   (14.1340)
Adjusted R^2 = 0.9012 F-Statistics = 46.6108 Observations = 11

Maharashtra state
LOAN = -67858844.2 – 0.6744 MEMB + 396.3346 GCA
                              (1.8585)   (183.4516)
Adjusted R^2 = 0.8600 F-Statistics = 31.7053 Observations = 11

1991-92 to 2002-03

Western region
LOAN = -69451217.5 + 15.3698 * MEMB + 265.2638 GCA
                              (5.1051)   (353.0479)
Adjusted R^2 = 0.8716 F-Statistics = 38.3227 Observations = 12

Vidarbha region
LOAN = -22033420.8 – 0.9208 MEMB + 429.7242 GCA
                              (3.2181)   (184.9523)
Adjusted R^2 = 0.2568 F-Statistics = 2.9002 Observations = 12

Marathwada region
LOAN = -37516384.7 + 6.4491 MEMB + 567.0245 GCA
                              (6.0670)   (823.0293)
Adjusted R^2 = 0.3137 F-Statistics = 3.5140 Observations = 12

Konkan region
LOAN = 836789.2 + 1.8598 MEMB – 177.3890 GCA
                              (1.3630)   (97.5247)
Adjusted R^2 = 0.6103 F-Statistics = 9.6125 Observations = 12

Maharashtra state
LOAN = -234776692.0 + 4.1448 MEMB + 1059.8159 GCA
                              (10.9437)   (908.9431)
Adjusted R^2 = 0.6806 F-Statistics = 12.7182 Observations = 12

1980-81 to 2002-03

Western region
LOAN = -69725192.8 + 3.2512 * MEMB + 787.4909 * GCA
                              (205.7397)
Adjusted R^2 = 0.8495 F-Statistics = 63.0721 Observations = 23

Vidarbha region
LOAN = -13453113.6 + 1.0070 MEMB + 227.8714 * GCA
                              (1.1452)   (83.9556)
Adjusted R^2 = 0.5608 F-Statistics = 15.0439 Observations = 23

Marathwada region
LOAN = -12633761.3 + 3.6269 *** MEMB + 186.3942 GCA
                              (1.7579)   (328.3011)
Adjusted R^2 = 0.6359 F-Statistics = 20.2121 Observations = 23

Konkan region
LOAN = 158438.5 + 2.2211 * MEMB – 127.5344 * GCA
                              (0.2830)   (34.8745)
Adjusted R^2 = 0.7340 F-Statistics = 31.3458 Observations = 23

Maharashtra state
LOAN = -119509416.0 + 2.1729 MEMB + 577.3805 GCA
                              (2.0399)   (318.7163)
Adjusted R^2 = 0.7282 F-Statistics = 30.4735 Observations = 23

Note: Figures within the parentheses show the standard errors of regression coefficients.
*Indicates significance of regression coefficients at one per cent level of probability.

specification have been presented in Table 6. The independent variables could explain 60-80 per cent variations in total loan advances through PACS across various regions of Maharashtra during the period of study. The variables showed mixed trend with respect to their influence on loan advances through PACS. While Maharashtra showed a significant increase in loan advances with increase in GCA between 1991-92 and 2002-03, the period prior to this was marked with slower but significant growth in the same with rise in GCA, thereby resulting in overall rise in loan advances with rise in GCA between 1980-81 and 2002-03.

Interestingly, membership showed negative influence on loan advances through PACS between 1980-81 and 1990-91, though not significant, and positive influence between 1991-92 and 2002-03, resulting in increase in loan advances through PACS with the rise in their membership during the period 1980-81 to 2002-03. Although positive association between loan advances and membership of PACS was expected, the negative influence of GCA on loan advances through PACS in Konkan region could again be considered as a matter of concern owing to the fact that 70-80 per cent of total loan advances of PACS were meant for various crops grown in this region.

The reform period, in general, has shown a sharp increase in loan advances through PACS in Maharashtra with the rise in GCA. For every annual hundred hectares addition to GCA, the loan advances increased by nearly Rs 1060 annually between 1991-92 and 2002-03. This could be considered as a welcome scenario insofar as loan advances through PACS in Maharashtra is concerned.

The study has identified several issues that need to be taken cognizance of to revitalize the rural credit delivery system through co-operatives in Maharashtra. These include tackling issues like repayment performance of these credit institutions and overcoming their NPA-related problems, distribution of their credit to various social groups, and, therefore, overcoming inequality in distribution of their credit across various regions and districts of Maharashtra, despite not very significant difference in the existing cropping pattern available in these regions and districts of the state. The issue relating to deposit mobilization is equally important as the lending business of PACS depends significantly on resources generated by them in the form of deposits.

Tackling NPAs to Restore Viability

The focus of this study was on assessing the viability of only central level credit institutions operating in the forward district of Sangli and backward district of Buldana. These central level credit institutions were:

Table 7. Break-even levels of advances and deposits for SDCCB and BDCCB: 1986-87 to 1998-99

Particulars	TE 1986-87 (1)	TE 1992-93 (2)	TE 1998-99 (3)	Change, %		
				2 over 1	3 over 2	3 over 1
SDCCB						
1. Income per hundred rupee advance (Rs)	22.30	20.68	28.02	-7.26	35.49	25.65
2. Variable cost per hundred rupee advance (Rs)	18.15	16.73	23.85	-7.82	42.56	31.40
3. Margin per hundred rupee advance	4.15	3.95	4.17	-4.82	5.56	0.48
4. Fixed expenses (lakh Rs)	229.95	623.93	1838.98	171.33	194.74	699.73
5. Break-even point (BEP) for advance	5547.22	15762.55	44066.35	184.15	179.56	694.39
6. Break-even point (BEP) for deposit	7072.94	15470.99	51222.94	118.73	231.09	624.21
7. Actual advance (lakh Rs)	6247.02	19953.40	46656.68	219.41	133.83	646.86
8. Actual deposit (lakh Rs)	7948.62	19595.55	54265.89	146.53	176.93	582.71
9. Percentage of actual advance to BEP	112.62	126.59	105.88	13.97	-20.65	-6.74
10. Percentage of actual deposit to BEP	112.38	126.66	105.94	14.28	-20.72	-6.44
11. Percentage of BEP to actual advance	88.80	78.99	94.45	-	-	-
12. Percentage of BEP to actual deposit	88.98	78.95	94.39	-	-	-
BDCCB						
1. Income per hundred rupee advance (Rs)	16.21	18.17	23.00	12.09	26.58	41.88
2. Variable cost per hundred rupee advance (Rs)	11.38	12.60	17.15	10.72	36.11	50.70
3. Margin per hundred rupee advance	4.83	5.57	5.85	15.32	5.03	21.12
4. Fixed expenses (lakh Rs)	131.74	283.76	2308.37	115.39	713.49	1652.22
5. Break-even point (BEP) for advance	2739.93	5105.54	39200.95	86.34	667.81	1330.73
6. Break-even point (BEP) for deposit	1973.44	5197.12	49568.28	163.35	853.76	2411.77
7. Actual advance (lakh Rs)	2984.78	5344.31	15716.78	79.05	194.08	426.56
8. Actual deposit (lakh Rs)	2156.30	5443.78	19998.49	152.46	267.36	827.44
9. Percentage of actual advance to BEP	108.94	104.68	40.09	-4.26	-64.59	-68.85
10. Percentage of actual deposit to BEP	109.27	104.75	40.34	-4.52	-64.41	-68.93
11. Percentage of BEP to actual advance	91.80	95.53	249.42	-	-	-
12. Percentage of BEP to actual deposit	91.52	95.47	247.86	-	-	-

Sangli District Central Cooperative Bank (SDCCB) and Buldana District Central Cooperative Bank (BDCCB). The estimates on variable cost incurred and income generated in respect of per hundred rupee of money spent on advances coupled with break-even points of loan advances and deposits for SDCCB and BDCCB for the period 1984-85 to 1998-99 have been shown in Table 7.

A perusal of Table 7 reveals that the SDCCB granted 12.62 per cent higher loans than the break-even level during TE 1986-87, 26.59 per cent during TE 1992-93, and 5.88 per cent during TE 1998-99. A similar trend was also noticed in respect of break-even level of deposits and actual deposits of the bank. Thus, the financial viability of SDCCB had declined during TE 1998-99 as against TE 1986-87 and TE 1992-93, consequent to the break-even levels of both advances and deposits becoming very close to actual advances and deposits during the late-1990s as compared to mid-1980s and the early-1990s.

The BDCCB, on the other hand, granted 8.94 per cent higher loans than the break-even level during TE 1986-87 and 4.68 per cent during TE 1992-93. However, during TE 1998-99, the actual loan advance of BDCCB was much lower than the break-even level and a deficit in this loan of around 60 per cent was observed during this period. A similar trend was also observed in respect of break-even level of deposits and the actual deposit of the bank. The actual deposit of BDCCB turned out to be 9.27 per cent higher than the estimated break-even level during TE 1986-87 and 5.23 per cent during TE 1992-93, with a deficit in this deposit estimated at 60 per cent during TE 1998-99.

The foregoing observations are pointer to the fact that the financial viability of BDCCB had declined sharply during the late-1990s as against the mid-1980s and early-1990s. The major reason for higher break-even levels of loan advances and deposits could be traced in excessively high fixed expenses incurred by BDCCB due to inclusion of high levels NPAs during the late-1990s.

In furtherance, five different categories of ratios were estimated to analyze the operational and functional efficiencies of SDCCB and BDCCB and these ratios for the three time periods under consideration have been shown in Table 8.

A critical evaluation of Table 8 revealed that though the financial health of SDCCB had improved during the second half as against the former half of the overall period considered, the more recent period, i.e. the late-1990s period, was marked with declining profitability ratios, fixed ratio, asset turnover ratio, income-expenditure ratio, equalization and income multiplier, and marginal efficiency of capital of SDCCB.

Table 8. Financial ratio analysis for SDCCB and BDCCB for 1986-87, 1992-93 and 1998-97

Financial ratios	SDCCB			BDCCB		
	TE 1986-87	TE 1992-93	TE 1998-99	TE 1986-87	TE 1992-93	TE 1998-99
A. Liquidity Ratios						
a. Current ratio	1.40	1.45	1.73	1.13	1.18	1.14
b. Acid test ratio	1.06	0.85	1.05	0.98	1.10	1.48
B. Profitability Ratios						
a. Rate of return on asset (%)	0.27	0.58	0.15	0.24	0.13	-4.37
b. Return on owner's equity	3.74	7.47	2.10	2.67	1.62	-67.77
C. Financial Leverage Ratios						
a. Debt-asset ratio (%)	92.67	93.28	93.16	91.13	91.81	93.00
b. Capitalization ratio (%)	87.55	87.83	89.84	0.73	0.81	0.86
c. Fixed ratio	0.31	0.38	0.31	0.64	0.56	0.55
d. Net capital ratio	1.08	1.07	1.08	1.10	1.09	1.08
e. Equity ratio	0.08	0.07	0.08	0.10	0.09	0.08
f. Equity to asset value ratio	0.07	0.07	0.07	0.09	0.08	0.07
D. Efficiency Ratios						
a. Asset turnover (times)	0.62	0.71	0.66	0.55	0.52	0.55
b. Accounts receivable turnover (times)	16.11	10.25	19.87	12.80	8.66	5.71
c. Days advances outstanding (days)	22.72	37.44	18.62	28.62	42.85	67.73
E. Income Ratios						
a. Income-expenditure ratio (%)	101.96	104.27	100.78	102.75	101.37	81.66
b. Gross ratio (%)	98.09	95.91	99.20	97.35	98.65	131.86
c. Operating ratio (%)	79.16	77.72	84.03	64.58	64.95	69.00
d. Rate of capital turnover	0.14	0.15	0.18	0.09	0.09	0.13
F. Other Diagnostic Tools / Ratios						
a. Equalization multiplier	-	49.02	36.01	-	22.45	34.50
b. Income multiplier	-	6.62	4.73	-	8.67	6.99
c. Marginal efficiency of capital	0.27	0.58	0.14	0.32	0.16	-4.46
d. Debtors / Creditors ratio	5.37	3.83	5.95	3.02	3.81	6.29

Capitalization ratio of SDCCB gave an indication that the permanent capital of this financial institution had increased over time. However, this increase might not be considered as a sign of improvement in its efficiency since major portion of SDCCB's assets were financed by debt and this dependency on debt had marginally increased. Further, hardly any improvement in the net worth of SDCCB was observed and the share of net worth in total liability of SDCCB had rather declined over time.

Insofar as the BDCCB is concerned, the mounting NPAs or overdues or bad debts during the late-1990s had adversely affected a majority of the estimated ratios. Not only the permanent capital position of BDCCB was noticed to weaken but its dependency on debt for its finances had also sharply increased during this period. The share of net worth in total liability of BDCCB also declined sharply during the period between mid-1980s and the late-1990s. The declining share of net worth had caused an increase in debt asset ratio of BDCCB. Added to this, the return on its equity had not only drastically fallen but it became negative during the late-1990s as against the mid-1980s or the early-1990s. The rate of return on asset and marginal efficiency of capital of BDCCB had also shown a drastic fall during the period between early- and late-1990s. All these disquieting trends clearly indicate non-viable functioning of BDCCB during the more recent times. Further, the negative value of return on equity of BDCCB noticed during the late-1990s clearly indicates inefficiency of BDCCB in managing its assets and liability, as also its income and expenditure patterns.

Conclusions and Policy Implications

The credit cooperatives operating in Maharashtra have not only shown slower growth in their institutional finance coupled with much slower growth in their membership but also a faster growth in outstanding loans as against their loan advances during the reform period. The financial sector reforms have accorded greater flexibility to the cooperatives to invest in non-target avenues like shares and debentures of corporates, units of mutual funds, bonds of public sector undertakings, etc. This obviously has affected credit flow from these major financial institutions operating in rural Maharashtra as most of their resources meant for farm finance are diverted to investments. The findings of this investigation have clearly shown lackadaisical approach of PACS towards SC/ST members, particularly in terms of their coverage, pattern of loan advances to them and recovery pattern. Wide variations in total and crop loan advances across various districts and regions is other important issue that needs to be taken cognizance of in ensuring effective rural credit delivery through PACS. Although decline in their loan advances with rise in GCA is another issue, the most important one among all is the mounting overdues and NPAs of the cooperatives operating in both forward and backward regions of Maharashtra. Due to substantially high NPAs, while BDCCB operating in backward region has shown gross inefficiency in its functioning during the reform period, the SDCCB operating in forward region is marked with deterioration in its financial health during this period. In order to rejuvenate rural credit delivery system through cooperatives, the major problems facing the system, viz. high transaction cost, poor repayment performance, mounting NPAs,

distributional aspect of credit, low coverage of SC/ST members, etc. need to be tackled with more fiscal jurisprudence reserving exemplary punishment for willful defaults, particularly by large farmers.

Notes

1. According to Subrahmanyam (1999), the major reforms/steps initiated during the period from 1991- 92 to 1997-98 are: (a) relaxation in branch expansion policy, (b) liberalization and relaxation in Credit Authorization Scheme, (c) permission to SCBs to introduce STOCKINVEST and Currency Chest Branches, (d) some additional scheme to SCBs under National Level Consortium arrangement for financing, (e) a policy decision to permit SCBs on case by case to subscribe to the Public Sector Bonds, (f) assistance to SCBs from Cooperative Development Fund by NABARD to ensure proper Management Information System and to conduct research studies, (g) deregulated interest rates on advances and deposits by SCBs / DCBs, (h) preparation of Development Action Plans and entering into MOUs at the instance of NABARD, (i) applicability of Prudential norms to SCBs / DCCBs , and (j) relaxation in extending finance to individuals with a view to provide avenues for broader deployment of the resources.

2. The parameters included in the construction of *composite index* were: cropping and irrigation intensity, operational holding, number of commercial banks, per capita and per hectare bank credit to agriculture, outstanding agricultural finance, number of cooperative banks, membership, loan advances and outstanding loans of PACs. Based on these indicators, the total composite score of each district was computed. The districts showing scores above 100 were treated as forward and districts showing scores below 100 were considered as backward. Thus, following this procedure the forward and backward districts of Maharashtra were separated. This procedure helped to develop a scale for ranking all the forward and backward districts of Maharashtra.

3. The Break-even level of the banks was estimated using the following formula:

$$\text{Break-even Point for Advances} = \frac{\text{Fixed Expenses}}{\left(\begin{array}{cc}\text{Income per Rupee} - \text{Variable Cost per} \\ \text{of Advance} \quad \text{Rupee of Advance}\end{array}\right)}$$

$$\text{Break-even Point for Deposits} = \text{Break-even Point for Advance} \times \frac{\text{Deposit}}{\text{Advance}}$$

Here, the fixed expenses included salaries and allowances and provident fund, directors and local committee members fees and allowances, rent, taxes, insurance and lighting charges, legal and other professional charges, auditors fees, depreciation on and repairs of property, contribution to cooperative state cadre employment fund, provision for bonus, bad and doubtful debts, dividend equalization fund, etc. Variable expenses included interest paid for borrowings, deposits, etc., postage, telegrams and telephone charges, stationary, printing

and advertisement bills, subscription and contributions, loss from sale of or dealing with non-banking assets and other expenditure including vehicle expenses.

4. The ratios included under liquidity category were generally designed to assist in determining a firm's ability to pay the current liabilities as they become due. The profitability ratios were designed to assist in evaluating a firm's ability to control expenses and to earn a reasonable return on economic resources (funds) committed. The financial leverage ratios were the group of ratios that measured the extent to which a firm relied on debt for its finances. The efficiency ratios gave an indication of how effectively a firm had been managing its assets. The income ratios showed as to how efficiently the firm had used its capital resources to generate output The other diagnostic tools gave an indication of as to how efficiently a firm had been managing its income and expenditure and assets (for details regarding formulation and interpretation, *see* Viscione, 1977).

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