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Economic Viability and Equity Issues in Financial Institutional Reforms: A Study of Regional Rural Banks in Punjab

Sajla Kalra and Karam Singh*

The large scale persistence of rural poverty brought into focus the significance of adoption of measures which aimed directly at improving the access of the rural poor to production resources, particularly the commercial bank credit which was virtually non-available to the small borrowers and the weaker sections. In spite of the various measures and reforms introduced in the banking sector such as mandating the funding to priority sector, to agriculture sector and linking with the development programmes for weaker sections, it continues to be alleged that the benefits of the institutional credit expansion have largely accrued to the well-off farmers and a majority of the rural poor have remained outside the institutional network (Adams and Vogel, 1986; Egger, 1986; Ghatak, 1983; Sarap, 1990). There is a large variety of arguments that explain for the limited access of the rural poor to the institutional credit. It is argued that in view of the asymmetric information on the borrowers, the institutional agencies base their lending decisions on size and composition of borrowers' wealth (Braverman and Guash, 1986; Sarap, 1990; Swaminathan, 1991; Besley, 1994). Institutional lenders prefer to lend against immovable and tangible collaterals and consequently the labourers, artisans and small landholders, who are deficient in such collateral assets, generally remain screened out. Thus reforms in the institutional credit system for rural areas continue to be of utmost concern. One such step, which was expected to bring about reduction in rural poverty and inequality, was improving the access of the rural poor to the institutional credit. It was against this background that the Government of India appointed a working group on the rural banks under the chairmanship of Shri M. Narasimham "to examine in depth the setting up of new rural banks to cater the credit requirements of the rural people". It was on the recommendation of this Committee that regional rural banks (RRBs), as a new arrangement, were established in 1975 to overcome ethos, attitudes and high cost profile of the commercial banks, which were not conducive to meet the credit needs of the rural population, especially the weaker sections to the required extent (Government of India, 1975).

Since their inception, the RRBs have increased impressively in terms of their number and spread. By 1997, there were 196 RRBs with 14,497 branches covering over 427 districts in the country. Their aggregate deposits as of March 1997 stood at

* Research Associate and Director, respectively, Agro-Economics Research Centre, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana-141 004.

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Rs. 18,032 crores and advances at Rs. 8,718 crores. However, the progress in the number of branches, deposits and advances of the RRBs do not convey their qualitative performance, especially in terms of the original objectives. Thus during 1997, as many as 152 RRBs were in losses. As a consequence, there have been vehement arguments to revamp the RRBs either by merging them with their sponsor banks (RBI, 1989) or by enlarging their role to include even the non-target groups (RBI, 1991). Considering that weak clientele does not make an institution strong (Kahlon and Singh, 1992), the RRBs have been allowed to lend up to 60 per cent of their lending to non-target groups (NABARD, 1997 a).

The most serious problem faced by RRBs is their economic viability, i.e., sufficiency of interest revenue from agricultural loans to meet the financial and transaction costs incurred by RRBs. While the relaxation in the lending criterion may help the RRBs to attain financial vitality and allow them to graduate and become regular credit institutions, it is imperative that the actual functioning of the RRBs be analysed in the light of original objectives and the shortcomings that have surfaced over time so that institutional reforms in this respect, i.e., to meet adequately and efficiently the equity and efficiency considerations, be properly tuned up.

Keeping the above aspects in mind, this paper attempts to study as to how far the RRBs could succeed as an institutional reform in the field of rural credit and what are the important factors that influence the profitability of RRBs so that RRBs can improve upon those parameters to further enhance their viability and profitability. These objectives have been examined in detail with reference to the functioning and performance of a RRB in Punjab, namely, Malwa Gramin Bank (MGB). MGB, sponsored by State Bank of Patiala, was established in 1986 and serves the districts of Sangrur, Patiala and Fatehgarh Sahib with a network of 41 branches. Since its establishment, MGB has played an important role in enhancing rural credit system and is one of the best RRBs as far as recovery performance (94.67 per cent in 1996-97) is concerned. The study of one of the best RRBs would be a guide-mark for screening the performance indicators, which need to be addressed to while making the RRBs functionally better and more viable.

The growth of MGB in respect of various parameters is analysed in Section I. The nature of the lending policies and pattern of distribution of the loans advanced by MGB across different sections of the society have been analysed and Gini ratios worked out to determine the inequality in loan distributions (Section II). The break-even analysis has been used to determine the viability of RRBs (Section III). Finally, the principal component analysis has been applied to determine the parameters, which need to be given priority in making the institution viable (Section IV). The conclusions and policy implications are given in Section V.

GROWTH OF THE RRB: MALWA GRAMIN BANK (MGB)

After examining the records of MGB, it was found that fairly systematic data and regular records were available for a span of nine years from 1988-89 to 1996-97; this was, therefore, chosen to be the period of study. The growth in the main performance indicators for the study period (1988-89 to 1996-97) shows that the deposits of MGB increased from Rs. 206.44 lakhs in 1988-89 to Rs. 4,167 lakhs in 1996-97, whereas advances outstanding during the corresponding period increased from Rs. 72.16 lakhs to Rs. 2,814.68 lakhs (Table 1). Since there was marked improvement in the technology of farm production and infrastructural facilities such as communication and market facilities, the farmers tended to increase their marketable surplus through use of credit. The credit:deposit (C:D) ratio increased from 34.95 per cent in 1988-89 to 67.55 per cent in 1996-97. Thus the C:D ratio clearly indicated that the bank had attached more importance in advancing credit to the rural people. The profitability ratio, which was measured as ratio of total profits to the volume of business, was 1.93 in 1988-89, but declined to -0.159 in 1994-95. As a result of reform measures initiated since 1992 and policy decision taken by Government of India during 1994-95, MGB entered into memorandum of understanding with the sponsor bank (State Bank of Patiala) to revamp the working of the bank which has been incurring losses. With the continued guidance, assistance and support provided by the sponsor bank and proper fund management, the profitability ratio of MGB took a U-turn and improved to 2.15 in 1996-97.

The growth rates of various financial parameters during 1988-89 to 1996-97 was impressive. The deposits increased by 38 per cent per annum. The loans outstanding, total income, total expenditure and advances disbursed, each of these, increased at the rate of more than 40 per cent. The productivity per staff and per branch increased at the rate of 34 and 27 per cent respectively. The number of deposits and advances accounts, each increased at the rate of more than 28 per cent. The deposits per account increased at the rate of 7 per cent and that of advances per account at the rate of 14 per cent only, thereby indicating the small depositors' and small (business) investors' economy as of the rural areas in which the RRBs operate. In fact the advances per account became higher than the deposits per account consistently only after 1993-94, with significant improvement in 1994-95, when the RRBs were given some relaxations to make them viable. The C:D ratio remained above 50 per cent since 1989-90 and even touched 70 per cent in 1995-96. This is in sharp contrast to the overall trends of all RRBs whose C:D ratios declined during this period to touch 53 per cent in 1995-96. Even in the case of other RRBs and commercial banks in Punjab, the C:D ratio declined during this period touching 49.1 and 40.6 per cent respectively. The overdues in relation to both demand and outstandings were not very high but still it also took an inverse U-turn since 1993-94. Even with all the impressive growth rates in financial parameters, MGB had a consistently positive and improving profitability ratio only since 1994-95. This shows that small banks like

RRBs, which operate in rural areas with limited portfolio, are much vulnerable than the large banks, which have large and diverse clientele and portfolio.

TABLE 1. VARIOUS PERFORMANCE INDICATORS OF MGB, 1988-89 TO 1996-97

Sr. Performance No. indicators (1) (2)	1988-89 (3)	1989-90 (4)	1990-91 (5)	1991-92 (6)	1992-93 (7)	1993-94 (8)	1994-95 (9)
1. Deposits (Rs. lakhs)	206.44	626.59	1,208.23	1,530.17	1,963.10	2,411.40	3,090.30
2. Loan outstanding (Rs. lakhs)	72.16	324.33	677.56	916.44	1,073.62	1,229.98	1,921.93
3. Total income (Rs. lakhs)	30.33	39.00	144.77	217.63	296.66	347.17	428.42
4. Total expenditure (Rs. lakhs)	24.96	57.25	142.35	235.76	309.58	352.96	389.79
5. Advances disbursed (Rs. lakhs)	104.76	368.03	803.68	1,115.83	1,385.42	1,624.60	2,367.82
6. No. of deposit accounts	3,724	13,999	22,194	28,001	32,727	38,521	40,862
7. No. of advances outstandings accounts	1,624	6,393	12,230	16,094	18,774	19,008	19,952
8. Total bank staff	58	127	156	154	142	143	139
9. Productivity per staff (Rs. lakhs)	4.80	7.48	12.08	15.89	21.38	25.46	40.75
10. Productivity per branch (Rs. lakhs)	30.95	24.38	45.99	59.67	74.06	88.81	122.25
11. C:D ratio (percentage)	34.95	51.76	56.08	59.67	54.69	51.00	62.20
12. Profitability ratio	1.93	-1.03	0.128	-0.74	-0.42	-0.159	0.77
13. Average no. of deposit accounts per branch	414	359	541	683	798	939	997
14. Average no. of advances accounts per branch	180	164	298	393	458	464	487
15. Deposits per account (Rs. lakhs)	0.055	0.045	0.054	0.055	0.060	0.062	0.075
16. Advances per account (Rs. lakhs)	0.044	0.051	0.055	0.057	0.057	0.065	0.096
17. Percentage of overdues to demand	5.31	7.45	6.12	7.02	9.13	8.04	6.25
18. Percentage of overdues to outstanding advances	2.35	1.73	2.44	5.46	5.44	9.43	5.27
19. Interest earned ratio	0.301	0.144	0.182	0.214	0.261	0.264	0.201
20. Interest paid ratio	0.056	0.047	0.063	0.083	0.049	0.092	0.075
21. Fixed asset (Rs. lakhs)	4.19	14.97	15.19	11.96	11.96	9.15	7.67
22. Proportion of time deposits to total deposits	46.26	51.49	50.83	58.89	61.35	56.37	52.50

(Contd.)

TABLE I (Concl'd.)

Sr. No. (1)	Performance indicators (2)	1995-96 (10)	1996-97 (11)	Remarks/ growth rate (12)	Average before reforms, 1988-89 to 1992-93(I) (13)	Average after reforms, 1993-94 to 1996-97 (II) (14)	Percentage change (II) over (I) (15)
1.	Deposits (Rs. lakhs)	3,471.66	4,167.00	38.4	1,324.32	3,576.32	167.0
2.	Loan outstanding (Rs. lakhs)	2,434.18	2,814.64	46.9	715.68	2,390.25	234.0
3.	Total income (Rs. lakhs)	573.43	750.13	48.0	179.26	583.99	225.8
4.	Total expenditure (Rs. lakhs)	478.54	599.66	43.1	187.14	489.33	261.5
5.	Advances disbursed (Rs. lakhs)	2,776.86	3,219.00	5.6	900.38	2,787.89	209.6
6.	No. of deposit accounts	45,004	48,657	29.1	23,194	44,841	93.3
7.	No. of advances outstandings accounts	20,660	20,609	28.1	12,354	20,407	65.2
8.	Total bank staff	136	135	5.6	130	137	5.4
9.	Productivity per staff (Rs. lakhs)	43.43	51.71	34.3	14.51	45.29	212.1
10.	Productivity per branch (Rs. lakhs)	144.04	170.29	27.3	44.45	145.52	227.4
11.	C:D Ratio (percentage)	70.12	67.55	20.1	51.36	66.62	29.1
12.	Profitability ratio	1.61	2.15	U-turn	-0.048	1.51	-
13.	Average no.of deposit accounts per branch	1,098	1,187	16.4	622	1,094	75.9
14.	Average no.of advances accounts per branch	504	503	15.5	326	498	52.7
15.	Deposits per account (Rs. lakhs)	0.077	0.085	7.12	0.055	0.079	43.6
16.	Advances per account (Rs. lakhs)	0.117	0.136	14.7	0.054	0.116	114.8
17.	Percentage of overdues to demand	5.33	5.67	Inverse U-turn	7.18	5.75	(-)19.9
18.	Percentage of overdues to outstanding advances	4.35	4.87	Inverse U-turn	4.48	4.83	7.8
19.	Interest earned ratio	0.215	0.245	1.32	0.228	0.220	(-)3.5
20.	Interest paid ratio	0.090	0.099	8.1	0.065	0.088	(-)35.4
21.	Fixed assets (Rs. lakhs)	11.31	12.90	3.4	11.24	10.62	(-)5.5
22.	Proportion of time deposits to total deposits	53.82	53.69	1.3	54.19	53.34	(-)1.6

Notes: Productivity per Staff/Branch: Ratio of volume of business to total bank staff/branch of bank; Profitability Ratio: Ratio of total profits to volume of business; Interest earned ratio: Ratio of interest earned by bank to average annual advances; Interest paid ratio: Ratio of interest paid by bank to average annual deposits.

As most of the developments and turn-around took place since 1993-94, it would be pertinent to examine the average performance during 1993-94 to 1996-97 with that during 1988-89 to 1992-93. The change in averages of all the parameters over the period are also given in Table 1. The loans disbursed, loans outstandings, total expenditure and total income more than doubled during the five years with the deposits increasing by 167 per cent. Thus the productivity per staff (total volume of business per employee) increased by 212 per cent with almost about the same staff which increased only by 5 per cent. The number of deposit accounts increased at a faster rate (93 per cent) than the advances accounts (65 per cent), thereby showing better cautious appraisal approach while lending. The fact that advances per account increased by about 115 per cent as compared with only 44 per cent increase in deposits per account points to the greater proportion of the credit requirements being met in the second period. This was particularly observed since 1994-95 when a significant increase of 48 per cent took place over the previous year compared with zero to 16 per cent increase over the respective preceding year during the previous period. Thus adequacy of credit for weaker sections, for whom every rupee counts, is of greater significance. Although the overdues to total outstandings increased by about 8 per cent due to increase in the loan portfolio, the overdues to demand decreased by 20 per cent, which also improved the profitability of MGB.

II

ANALYSIS OF EQUITY CONSIDERATIONS

Given the mandate to assist the rural clientele, particularly the weaker sections, an attempt has been made to study as to how far the RRBs could succeed as an institutional reform in the field of rural credit, and in what way their policies have been effective in reaching out to the relatively weaker sections of the rural society. These objectives have been examined with reference to the functioning and performance of the two branches of MGB, namely, Thulliwal and Ghanaur, which were selected randomly. There were 817 borrower households of these branches during the agricultural year 1996-97. The data of all the 817 borrower households were used to examine the equity in the distribution pattern of the loans advanced by these branches of MGB. These 817 households were classified into different groups on the basis of their land ownership. Out of 817 households, 231 (28.26 per cent) were landless. The data relating to farm size, advances during 1996-97 agricultural year, outstandings as on July 1, 1996, recovery during the agricultural year, outstanding as on June 30, 1997, interest burden, income and assets of the borrower households were collected from the records of the branches of MGB. Although the data on the income and the assets of the borrower households collected by the bank branches are quick estimates and cannot be exact, in terms of the distribution pattern, these may be fairly representative. However, the conclusions with respect to assets and income distributions were the same as those with respect to the farm size distribution and hence have been dropped from discussion. The distribution pattern of MGB's

loans is analysed by looking into both the percentage share of each group under different farm size-groups in the total loans disbursed as compared to the percentage share of each group in the total sample, and the average loan obtained by a household under each group. Equity is measured through Gini concentration ratios for various parameters taking data on cumulative percentage of farmers across farm size-groups and corresponding cumulative percentage of bank advances, outstandings, recovery and interest burden shared by them.

The relative access of different farm size-groups to MGB finances in terms of various financial parameters are summarised in Table 2. It shows that the smaller farm size-groups which contributed about 57 per cent of the total sample households received about 22 per cent of the total loan advanced during the agricultural year

TABLE 2. RELATIVE SHARE ACCORDING TO FARM SIZE-GROUPS,
VARIOUS FINANCIAL INDICATORS, 1996-97

Farm size- group (acres)	Households	Advances	Outstandings as on		Recovery	Interest burden borne
			1.7.1996	30.6.1997		
			(1)	(2)		
Landless	28.26	2.42	7.32	6.57	3.18	7.37
0-2	6.23	2.73	1.26	1.38	2.53	0.51
2-4	22.73	17.96	9.49	8.68	17.99	4.27
4-6	18.21	23.69	10.76	12.31	12.01	9.67
6-8	10.76	17.46	14.48	12.77	19.53	10.99
8-10	5.87	13.66	17.41	18.99	12.72	20.67
10 and above	7.94	22.08	39.28	39.30	22.04	46.52
All	100.00	100.00	100.00	100.00	100.00	100.00

Source: Malwa Gramin Bank.

Notes: 1. Advances are the actual disbursements of the loans during the year under reference.

2. Outstandings are the principal plus interest amount that remain to be recovered on a particular date. Thus this includes the amount of the principal which still remains to be recovered (in instalments in the case of long-term loans) plus the interest till that date plus the unrecovered part of the instalments and interest which was due till date.

3. Recovery during the year refers to the actual amount repaid by the borrowers. It includes the principal instalments plus the interest thereon repaid by the borrowers.

4. Interest burden was worked out as follows:

$$I = (O_c - O_b) + (R_d - L_a)$$

where I = Interest burden borne during the year.

O_c = Loans outstandings at the end of the year.

O_b = Loans outstandings at the beginning of the year.

R_d = Loans recovered during the year.

L_a = Loans advanced during the year.

which was far lower than their share in total number. As one moved up from small to large farm size-groups, the proportion of loans received by different groups became more or less equal to or higher than their respective share in the total sample. The share of lower farm size-groups in total outstanding and recovery was also far lower

than their share in total sample households. In other words, the pattern was that the larger the ownership of land, the higher the loan advances, outstanding and recovery. Thus the basic inequality in the land ownership, which is the basic resource that determines the use of capital, results into inequality in the access to the financial institutions. This conclusion is in conformity with other research studies on this topic (Braverman and Guash, 1986; Sarap, 1990; Swaminathan, 1991; Besley, 1994; Shylendra, 1996).

The shares of different deciles of all households including landless in the total farm size area, total loan advanced, total cumulative outstanding, total cumulative recovery and total interest burden are given in Table 3. The cumulative share of the lowest three deciles including the landless households accounted for 0.44 per cent of total farm area, 3.19 per cent of the total loan advances during 1996-97, 7.58 per cent of the total outstanding as on July 1, 1996, 6.98 per cent of total outstanding as on June 30, 1997, 3.80 per cent of cumulative recovery and 7.60 per cent of the total cumulative interest burden. The highest three deciles (eighth, ninth and top) accounted for a major share (almost more than 60 per cent) in total loan advances, outstanding, recovery and interest burden.

In order to study the inequality in institutional finance among the cultivator households only, the landless households were excluded. It was found that the cumulative share of the lowest three deciles increased only marginally. They still accounted for 11.93 per cent of the total farm area, 13.71 per cent of total advances, 7.35 per cent of total outstanding as on July 1, 1996, 6.99 per cent of the total loan outstanding as on June 30, 1997, 13.58 per cent of the total recovery and 3.71 per cent of the total interest burden (Table 4). The top three deciles (eighth, ninth and top) accounted for a larger share in total loan advances, outstanding, recovery and interest burden, indicating inequalities in the farm credit distribution.

TABLE 3. CUMULATIVE DISTRIBUTION AND GINI CONCENTRATION RATIOS OF IMPORTANT FINANCIAL INDICATORS OF MGB (ALL HOUSEHOLDS)

Deciles (1)	Cumulative percentages of different financial indicators					
	Farm size area (2)	Advances (3)	Outstanding as on 1.7.1996 (4)	Outstanding as on 30.6.1997 (5)	Recovery borne (6)	Interest burden (7)
Bottom	0	0.25	1.46	0.94	0.77	1.53
Second	0	1.27	5.05	3.88	2.37	4.73
Third	0.44	3.19	7.58	6.98	3.80	7.60
Fourth	5.32	8.65	10.53	9.79	9.26	9.62
Fifth	12.13	15.99	14.25	13.20	16.54	10.89
Sixth	21.51	26.36	19.83	18.47	26.81	14.17
Seventh	32.98	38.81	25.06	24.58	38.10	17.18
Eighth	47.31	54.73	33.63	32.90	53.95	23.73
Ninth	66.46	73.49	57.13	55.75	73.42	47.55
Top	100.00	100.00	100.00	100.00	100.00	100.00
Gini concent- ration ratio	0.53	0.45	0.55	0.57	0.45	0.63

TABLE 4. CUMULATIVE DISTRIBUTION AND GINI CONCENTRATION RATIOS OF IMPORTANT FINANCIAL INDICATORS OF MGB (EXCLUDING LANDLESS HOUSEHOLDS)

Deciles (1)	Cumulative percentages of different financial indicators					
	Farm size area (2)	Advances (3)	Outstanding as on 1.7.1996 (4)	Outstanding as on 30.6.1997 (5)	Recovery borne (7)	Interest burden (8)
Bottom	2.75	3.50	1.24	1.89	3.28	0.63
Second	6.94	8.04	4.49	4.30	8.05	3.14
Third	11.93	13.71	7.35	6.99	13.58	3.71
Fourth	18.42	20.89	11.58	10.54	21.04	5.20
Fifth	25.96	29.50	15.18	15.48	28.29	8.11
Sixth	34.66	39.19	20.07	20.48	37.88	12.84
Seventh	44.93	50.92	26.82	26.76	49.65	16.38
Eighth	57.43	63.37	34.46	33.79	62.46	22.24
Ninth	73.17	79.70	62.78	62.03	79.31	54.22
Top	100.00	100.00	100.00	100.00	100.00	100.00
Gini concent- ration ratio	0.21	0.28	0.61	0.53	0.29	0.63

The Gini ratios give more precise estimate of the inequality in the various indicators of the institutional finance (Tables 3 and 4). The inequality in the loans advanced and the loans recovered during 1996-97 was higher when all households were considered than amongst the cultivator households only, the Gini ratio being 0.45 and 0.45 for all households and 0.28 and 0.29 for cultivator households, respectively. The Gini ratio, and hence the inequality, increased marginally over time in terms of outstanding for all households, being 0.55 as on July 1, 1996 and 0.57 as on June 30, 1997 but that among the cultivator households declined from 0.61 to 0.53 during the same period, i.e., the beginning and the end of the agricultural year 1996-97. This indicated that MGB during 1996-97 financed more to the small cultivators also. Interestingly, the Gini ratio for interest burden was the highest in both the situations, i.e., 0.63. This vindicates that the bank earnings from the larger farmers, who are economically more viable, are relatively better.

III

VIABILITY OF RRBs

Every commercial activity and organisation must survive and succeed; for this these organisations must earn a reasonable surplus of income over expenditure (i.e., profit) and enough margin (i.e., surplus of rate of returns over rate of costs). This viability aspect was recognised in the case of RRBs even before their establishment. The Agricultural Credit Review Committee (ACRC) (RBI, 1989) described the profitability

as a function of spread available to the banks between the rates of income and expenses. The spread in turn depends upon (a) the cost of raising resources comprising deposits and borrowings (the lower the cost, the higher will be the spread); and (b) the income earned on the investment and loans made out of the resources (the higher the income, the higher will be the spread). Additionally, profitability is also a function of the internal efficiency of the bank and the volume of business handled (the higher the efficiency and the larger the volume, the higher will be the profitability).

Costs and Margins of Malwa Gramin Bank

The viability aspect of MGB has been examined by going through financial, transaction and risk costs of MGB and then working out the financial and net margins of MGB. The average cost of funds of MGB stood at 7.89 per cent during 1993-94 and decreased to 7.48 per cent in 1996-97 (Table 5). This decline was due to the decrease in costs of deposits from 8.85 per cent to 8.17 per cent (*MGB Annual Report, 1997-98*). Financial returns improved from 11.52 per cent to 12.40 per cent during the same period. This was due to increase in returns on loans and advances as well as increase in the average yield of investments. As a result of increase in financial returns and decrease in financial costs, the financial margin improved from 3.63 per cent in 1993-94 to 4.92 per cent in 1996-97. The improvements in the volume of business, particularly the advances as discussed earlier resulted in a steep decline in the transaction costs during the same period which decreased from 4.15 per cent in 1993-94 to 2.48 per cent in 1996-97. Accordingly, the gross margin and net margin, increased over time; these were 3.50 and 2.70 per cent respectively during 1996-97. Thus MGB has shown good response to various measures initiated since the early nineties under the financial sector reforms. Deregulation of lending rates and infusion of funds for cleansing the balance sheets of RRBs have helped them in improving margins and thereby their viability. All these reflect the improvements in the management working efficiency.

TABLE 5. AVERAGE COSTS AND MARGINS OF MGB, 1993-94 TO 1996-97

Particulars (1)	Average cost per Rs. 100 of working funds			
	1993-94 (2)	1994-95 (3)	1995-96 (4)	1996-97 (5)
1. Financial costs	7.89	7.37	7.54	7.48
2. Financial returns	11.52	12.18	12.60	12.40
3. Financial margin (2-1)	3.63	4.81	5.06	4.92
4. Miscellaneous income	0.79	1.30	1.15	1.06
5. Transaction costs	4.15	3.35	2.98	2.48
6. Gross margin (3+4-5)	0.27	2.76	3.23	3.50
7. Risk costs	0.47	1.54	0.95	0.80
8. Net margin (6-7)	-0.20	1.22	2.28	2.70

Source: Annual Reports of MGB.

Break-Even Analysis

To examine the viability aspect of RRBs, the data regarding deposits, advances, C:D ratio, overdues, volume of business, profit/loss for all the 196 RRBs for 1995-96 available from *Financial Statements of RRBs, 1991-92 to 1995-96* (NABARD, 1997 b) were analysed. In order to standardise the data for different RRBs, these were considered on per branch basis. The profit per branch was regressed on important financial variables such as income, deposits, advances, volume of business, C:D ratio and recovery percentage. The multiple regression gave an R^2 of 0.42 and the coefficient of only a few variables were significant because of multicollinearity. Also since the purpose of the regression analysis was to estimate the break-even level of different business indicators, one would have assumed other things (indicators) remaining the same (at mean level), it was, therefore, considered appropriate to regress these variables individually to work out the break-even level, i.e., the level of financial parameters beyond which RRBs start earning profits. The results of regression are given in Table 6.

TABLE 6. BREAK-EVEN ANALYSIS FOR ALL RRBs IN INDIA

(Dependent variable: profit per branch)

Parameter	Independent variable (per branch)					
	Income	Deposit	Advances	Volume of business	C:D ratio	Recovery (per cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	-6.31	-5.67	-3.92	-6.45	-3.50	-2.83
Regression coefficient	0.39 (0.63)	0.03 (0.03)	0.05 (0.02)	0.03 (-0.06)	0.08 (0.03)	0.03 (0.003)
SE of regression coefficient	0.04	0.01	0.01	0.01	0.33	0.03
R^2	0.33	0.09	0.26	0.17	0.10	0.10
Break-even level* (Rs. lakhs)	16.00	189.00 [137.00]	78.00	215.00	43.75 [56.90]	94.00

* In the simple linear regression of $Y = \alpha + \beta X$, where α is negative, the break-even level of X , which generates value of $Y = 0$ is given by α/β .

Notes: (a) Figures in brackets [] are the adjusted ones according to other related parameters which showed better goodness of fit (R^2) in the regression analysis. For Deposits = Volume of business - Advances = 215 - 78 = 137.
For C:D Ratio = Credit/Deposit = 78/137 = 56.9.

(b) Figures in parentheses are the coefficients from the multiple regression with intercept value at -5.56 and R^2 at 0.42. However, only a few coefficients were significant because of multicollinearity.

It was found that the value of R^2 was 0.33 for income variable, 0.26 for loans issued and less than that, rather very low in the case of other variables. This shows that the inter-bank variability in respect of various parameters was not in harmony with the main parameters of income and business. Thus the break-even parameters

could be taken as indicatives only. Again, the break-even levels worked out from the multiple regression for the variables which had significant coefficients, with other variables at mean levels, were found to be very close to the break-even levels worked out from single variable regressions; therefore, only the latter are reported here. It was found that break-even level of volume of business was Rs. 215 lakhs per branch, which should earn break-even level of income of Rs. 16 lakhs on per branch basis to break even. The break-even level of deposits and of loans issued on per branch basis worked out independently came to Rs. 189 lakhs and Rs. 78 lakhs respectively, but the sum of these two gave volume of business higher than the break-even business level worked out independently. Since R^2 in the case of loans issued and volume of business was higher than in the case of deposits, the break-even level of deposits needed to be adjusted which came to Rs. 137 lakhs. The C:D ratio on the basis of adjusted parameters came to 56.9 per cent, which, however, on unadjusted figures was only 43.75 per cent. Likewise, the recovery percentage worked out independently was 94 per cent to break even. Although recovery per cent should be as high as possible taken together with the adjusted C:D ratio, there could be some scope when even a lower recovery percentage could break even.

The next step, in this break-even analysis arrived from the data of all the 195 RRBs, was to apply this to MGB (The data for one RRB was not available). Thus on the basis of break-even parameters, the viable branches of MGB were categorised (Table 7). Five branches of MGB satisfied the break-even level criterion of deposits whereas the number of branches of MGB above the break-even level of advances was 11. Thirty-five branches of MGB satisfied the break-even level criterion of recovery percentage and C:D ratio. Whereas only 4 branches satisfied all the five criteria, all the 41 branches of MGB satisfied one or the other break-even level criterion. Thus there is still scope to improve on the other parameters to make the bank more viable on sustainable basis.

TABLE 7. VIABILITY ANALYSIS OF BRANCHES OF MGB

Criterion (1)	No. of branches satisfying the break-even level criterion (2)
Deposits	5
Advances	11
Volume of business	6
C:D ratio	35
Per cent recovery	35
No. of branches fulfilling	
At least one criteria	41
Any two criteria	35
Any three criteria	9
Any four criteria	6
All five criteria	4

Note: Total number of branches of MGB = 41.

IV

ANALYSIS OF PERFORMANCE OF RRBS: PRINCIPAL COMPONENT ANALYSIS APPROACH

The performance of RRBs is judged by too many parameters without screening the most important ones from the less important ones. Also, it is done more in a stereotype manner than by emphasising their interrelationships. These need to be studied more specifically for a RRB, which earned profits and is viable, so that its results could be pointed out for other RRBs. Thus the critical study of the performance of MGB will be of immense use in knowing the strong and weak points in its working and evolving strategies for effective functioning of a RRB.

To evaluate the performance of MGB in detail, the time-series data of 22 performance indicators, abstracted from the annual reports of MGB for the period of nine years from 1988-89 to 1996-97 (Table 1) was subjected to principal component analysis technique (as outlined in Press, 1971). The variance explained by each dimension is the eigen value for that dimension. Any principal component with eigen value less than one contains less information than one of the original variables and so it is not worth retaining. The rule given by Kaiser (1985) was used to retain only those principal components whose eigen values were greater than or equal to one.

Based on the data of 22 variables for the period 1988-89 to 1996-97, a correlation matrix of 22 x 22 was worked out. Of this 22 x 22 configuration, four principal components were extracted. The first principal component explained 65.56 per cent of variation, second principal component explained 17.53 per cent of variation, third principal component explained 10.86 per cent of variation and fourth principal component accounted for 2.76 per cent of variation (Table 8). In all, the four components explained 96.71 per cent of variation. Fifteen variables (indicators) had higher factor loading on the first component, four on the second component, two on the third component and only one on the fourth component.

TABLE 8. EXTENT OF VARIATION EXPLAINED BY DIFFERENT PRINCIPAL COMPONENTS ON THE PERFORMANCE OF THE MGB

Principal component	Number of variables	Variation explained in absolute	Variation explained (per cent)	Cumulative proportion of variation (per cent)
(1)	(2)	(3)	(4)	(5)
I	15	14.42	65.56	65.56
II	4	3.86	17.53	83.09
III	2	2.39	10.86	93.95
IV	1	0.61	2.76	96.71

account, advances per account, C:D ratio and interest paid ratio were the financial indicators which were closely associated with the first principal component. The financial indicator 'deposits' had the highest positive loadings (0.2620), followed closely by total expenditure (0.2618) and advances disbursed (0.2612). Thus the bank's volume of business has significant positive bearing on the performance. Hence, it can be said that the overall financial status of MGB influenced to a great extent its performance. The financial performance indicators were followed by the physical performance indicators as number of deposit accounts (0.2570), number of advances accounts per branch (0.2446), advances per account (0.2414) and number of advances accounts (0.2388). In the light of the above discussion, the first principal component was named as 'physical and financial growth of resources'. Thus the performance of an organisation depends upon the growth of physical and financial resources and their effective management to ensure maximum turnover and also the induction of outside resources to take the organisation to higher potential.

The Second Principal Component

The second principal component explained 17.53 per cent of the total variation. Of the four variables extracted by the second component, one physical performance indicator was total bank staff, which has the highest factor loading (0.4169). This component was closely associated with three other financial performance indicators, viz., percentage of overdues to demand, fixed assets and proportion of time deposits to total deposits. Thus the resource position and its effective utilisation greatly influence the working efficiency of the bank. Thus in order to achieve faster growth in physical and financial resources (first principal component), there is need to maintain the tempo of resource mobilisation for investment purposes.

The Third Principal Component

Two variables, viz., interest earned ratio and per cent of overdues to outstanding advances found place in the third component which explained 10.86 per cent of the total variation. The fact that these got included in the third component and explained very low variation indicated that the bank must improve upon interest earned and percentage of overdues to outstanding advances. It is significant to note that the variable percentage of overdues to demand, which got extracted in the second principal component, is more important than the percentage of overdues to outstanding, which is in the third component. This is in conformity with the principle of working efficiency of the financial institutions.

The Fourth Principal Component

The variable profitability ratio found place in the fourth component, which explained only 2.76 per cent of the total variation. This clearly showed that the

profitability position of MGB was determined by addressing more to the related factors in the first principal component than the profitability parameter itself *per se*.

It follows from the above discussion that the bank's volume of business has significant positive bearing on its performance. Thus the growth of physical and financial resources and their effective management is a must to ensure maximum turnover and in order to achieve faster growth in the physical and financial resources, there is a need to maintain the tempo of resource mobilisation for investment purposes. It is clearly highlighted by this analysis that rather than directing on the profitability directly *per se*, it would be more relevant to address the parameters in the first principal component, viz., physical and financial growth of resources which would ultimately determine the profitability and the viability of the RRB.

V

CONCLUSION AND POLICY IMPLICATIONS

The following concluding remarks may be made on the basis of the overall analysis carried out in the study. The RRB though meant basically for the poorer sections of society was found to have benefited more the better-off segments of the society. Moreover, the bank's earnings from the large farmers, who are economically more viable, were better. The improvements in productivity per staff, especially with more increase in advances per account helped the MGB to improve the recovery percentage and come out of losses to earn profits overtime. The break-even levels of volume of business, deposits, advances and income per branch were estimated at Rs. 215 lakhs, Rs. 137 lakhs, Rs. 78 lakhs and Rs. 16 lakhs respectively. The recovery percentage for these small banks (branches) should be as high as 94 per cent. Almost all the branches of MGB satisfied one or the other break-even level criterion, as they all were viable. The principal component analysis clearly showed that the profitability position of MGB was determined by addressing more to the related factors in the first principal component such as deposits, expenditure, advances, income, etc. This would help better to improve the profitability parameter which, in fact, was the fourth (last) principal component.

Even though the above results pertain to a particular RRB, given the common lending policies pursued by the RRBs in the country, the following few inferences may be drawn. The RRBs, which were created as institutional innovation for the rural poor, however, did not come out with any radically different policy or strategy to reach out to their clientele. The productivity per staff of the RRBs needs to be improved. Since the RRBs are working in the relatively weaker (rural) clientele area, the emphasis has to be more on increasing the number of advances accounts and advances per account. The adequacy of finance to individual borrowers, particularly the weaker sections for whom every rupee counts, also helps to improve the recovery percentage.

It is suggested that the policy measures such as appropriate legal support, professionalising RRB boards, allowing greater freedom to the boards in self-

governance, freedom relating to certain aspects of loaning processes, creation of more conducive recovery climate, etc., are needed. The structural composition may also need to be made more flexible in terms of ownership and branch network. Greater responsibility and opportunities for RRBs are emerging out of banking sector reforms and efficient banks may gain more strength while the weaker ones may find the existence difficult. Our last line is if MGB could come out of losses in four years to be the best in terms of efficiency and profitability, the other RRBs can also do so.

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