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PERFORMANCE EVALUATION OF REGIONAL RURAL BANKS (RRBS) IN INDIA

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ABSTRACT

"The future of India lies in its villages"

Mahatma Ghandhi

In order to stay alive in the present cutthroat atmosphere, banks should be strengthened adequately and would attain competitiveness through the use of its obtainable resources and managing business in effective manner. Therefore it is very important to assess the performance of the regional rural banks (RRBs) in India from time to time. Regional Rural Banks (also RRBs), whose development process was started in October 2, 1975 are next-door level banking organizations progressively providing services in 644 notified districts of 27 States in India with 20,904 branches till 31st March 2016. They have been come into existence with a motive to serve first and foremost the rural areas of India with basic banking and financial services. Regional Rural Banks were established under the provisions of an Ordinance approved on September 26, 1975 and the RRB Act.1976 to offer adequate banking and credit facilities for agriculture and non-agricultural sectors. In the current paper, an attempt has been made to study the financial performance of Regional Rural Bank (RRB), keeping in view the present trends of regional rural banks in the national perspective. The study is analytic and exploratory in nature, and makes use of resultant data. The study found that the performance of Regional Rural Banks

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in India has drastically improved from the period of its establishment, as steps for their improvement were initiated by the Government of India after the amalgamation process.

Keywords: Performance, RBI, Amalgamation, RRBs, Key Performance Indicators, Rural Credit, NPA, Regional rural Banks.

Introduction

Regional Rural Banks are surviving from last 41 years in the Indian financial storyline. Commencement of regional rural banks (RRBs) can be seen as a unique trial as well as experience in ameliorating the dexterity of rural credit delivery appliance in India. With joint share holding in the proportion of 50:15:35 by Central Government, the concerned State Government and the sponsoring bank, an endeavor was made to integrate commercial banking within the broad policy thrust towards social banking keeping in view the local peculiarities. Rural Banking in India refers to a set up of financial institutions in rural areas for the economic development of rural population (Includes: small and marginal farmers, landless and agricultural laborers, rural artisans and small entrepreneurs). There are three streams of such institutions, (A) The rural cooperative banks, which were established with the onset of 20th century, (B) The commercial banks, which were associated in rural banking from late sixties onwards; and (C) The Regional Rural Banks, whose development process was started in October 2, 1975. Among these three financial institutions RRBs played an important role in accelerating the growth of rural and semi-urban areas of India.

The Narasimhan committee proposed the establishment of Regional rural Banks in 1975 as a new set of regionally oriented rural bank with a motive "to make available the banking services to the doorstep of rural residents for the progress of weaker section of the society, to build up the rural economy by the development of agriculture, trade commerce, by providing credit and other banking facilities mainly to the, small and marginal farmers, landless laborers, rural artisans and small entrepreneurs". Subsequently, the RRBs were set up through the promulgation of RRB Act of 1976. In the timeframe of last 40 years RRBs came in front as specialized rural financial institutions for developing the rural economy.

Objective of the Study

The intention behind this study is:

(A) To examine the progress of RRBs in India during 2001-02 to 2015-16.

(B) To evaluate changes took place in the performance of RRBs in India during post merger and pre merger periods.

(C) To assess the key performance indicators of RRBs in India.

(D) To study the growth pattern of Regional Rural Banks in India.

The indicators selected to assess the performance of the RRBs are:

1. Growth in number of branches & district coverage.
2. Geographical coverage.
3. Branch and staff productivity.
4. Capital funds.
5. Loans outstanding and investment made.
6. Deposits mobilization.
7. Recovery performance.
8. Non-performing assets

Genesis of Indian Regional Rural Banks

After having sovereignty the main aim of the Indian government was to improve credit policy in our country (mainly in rural area) and expand institutional financing keeping in a view to cut back the role of non-institutional credit sources like money lenders, traders, landlords, commission agents, credit form relatives etc. The All India Rural Credit Survey Committee (AIRCSC) (1951) perceived that cooperative banks can be a possible solution to the problem of rural finance.

Cooperative banks at various levels were supported by their respective state governments and RBI. Much was expected form the cooperative banks but because of not having the adequate financial resources it couldn't meet the credit requirement of rural sector according to the needs of farmer's movements. According to the survey in 1969 of The All India Rural Credit Survey Committee, recommended a multi agency approach to funding the rural sector.

The Banking Commission (1972) suggested to startup an alternative institution for rural peoples which can fill the credit gap and work as a bridge; provide low cost banking facilities to the poor and finally after the long thinking process the Government of India established Regional Rural

Banks – a separate institution mainly for rural credit on the basis of the suggestions of the Working Group under the Chairmanship of Sh. M. Narashimham. Regional Rural Banks came in to existence under the provisions of an Ordinance passed on September 1975 and the RRB Act. 1976. The Narasimhan committee started the development process of RRBs on 2 October 1975 with the forming of the first RRB, the Prathama Bank with authorised capital of Rs. 5 crore at its starting. The first five RRBs were set up in five States in Haryana, West Bengal, Rajasthan, two in Uttar Pradesh, which were sponsored by different commercial banks. These banks covered 11 districts of these five states. The first five Regional Rural Banks are as follows;

- Prathama Bank and Gorakhpur kshetriya Gramin Bank in Uttar Pradesh,
- Haryana Krishi Gramin Bank in Haryana,
- Gour Gramin Bank in West Bengal,
- Jaipur-Nagpur Anchalik Gramin Bank, Rajasthan.

Objectives behind the Genesis of Regional Rural Banks (RRBs)

1. To take the banking services & facilities to the doorstep of rural peoples particularly in unbanked rural areas.
2. To make available institutional credit to the weaker section of the society according to their requirements at a low cost.
3. To encourage rural peoples for savings and channelize them for supporting industrious activities in the rural areas.
4. To reduce participation of informal credit agencies, especially the unscrupulous money lenders, traders, landlords, commission agents, credit form relatives etc.
5. To generate employment opportunities in rural areas.
6. For the economic development of rural population.
7. For filling up the credit gap created by the cooperative banks.

Amalgamation and Consolidation of RRBs: 25 RRBs merged into 10 RRBs in just 9 months

Consolidation of RRBs has been going on in a phased manner since 2005. The aim behind the consolidation of RRBs is to improve efficiency and helping RRBs in achieving the scale. The amalgamation will also help RRBs in optimizing the use of modern technology. Amalgamation provides not only sound financial position, but also a large branch network throughout the country, a large clientele base, large resources, and bigger growth in terms of assets as well as business figures. It would also help in utilizing the funds effectively for the development of rural areas.

After amalgamation, there has been no disruption in delivery of services by the RRBs and merged entities, which have been discharging their functions properly. In the beginning RRBs have a network of about 16,000 branches spread across the rural and semi-urban areas of the country. On 31 March 2005, there were 196 RRBs (post-merger) covering 523 districts with a network of 14,484 branches averaging 3 districts per bank.

RRBs are still in the process of Amalgamation and Consolidation 25 RRBs have been merged into 10 RRBs till January 2013 the mergers took place in States were Bihar, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and Uttarakhand. There were 64 RRBs till the first week of June 2013, due to amalgamation this count came to 56 as by March 2016 covering 644 districts having 20904 branches. It is clear that due to amalgamation process on the first hand the number of RRBs are reduced but on the second hand the number of branches are increased across the country. It is predicted that RRBs might get amalgamated in the coming future. At present there are 56 RRBs in India. As on March 2016, of the total RRBs, 51 were profit-making while the remaining Five had registered losses.

In order to enhance the capital base of RRBs, the government on the proposal of a panel headed by RBI Deputy Governor K C Chakrabarty decided to recapitalize 40 selected RRBs in 21 states.

Development during the Year 2015-16

The CRAR of 56 RRBs as on 31 March 2015 ranged from 20.29 per cent (Chhattisgarh Rajya Gramin Bank) to 4.82 per cent (Nagaland Rural Bank). Four RRBs viz. Nagaland Rural Bank, Odisha Gramya Bank, Manipur Rural Bank and Ellaquai Dehati Bank had CRAR less than 9 per cent. During 2015–16, GoI share of recapitalisation assistance of `3.50 crore was released to Manipur Rural Bank.

NABARD submitted a proposal to GoI to recapitalize two RRBs, viz. Nagaland Rural Bank (`2.77 crore) and Ellaquai Dehati Bank (`25.42 crore). The same were approved by GoI, involving their contribution of 1.385 crore, and `12.71 crore, respectively. Recapitalization assistance of `1.385 crore and `10.115 crore was released to these RRBs by GoI, on 31 March 2016. Remaining assistance of `2.595 crore in respect of Ellaquai Dehati Bank will be released during 2016–17.

The modified performance evaluation matrix (PEM) for computation of incentives of the chairpersons of RRBs, similar to revised PEM developed for whole time directors of PSBs was approved by GoI in consultation with NABARD. The revised PEM has come into effect from financial year 2015–16.

RRB (Amendment) Act, 2015, was notified by GoI on 12 May 2015. The amendment has enhanced the authorised capital of RRBs to `2,000 crore and has enabled RRBs to raise capital from sources other than existing stakeholders. The other sources may include accessing the capital market or private placement.

Review of Literature

The Kolka Working Group (1984) reviewed that the RRBs could mobilize considerable participation of rural peoples through their branch networks. Among many recommendations made by the group, the participation of NABARD, credit deposit ratio, the relation between sponsoring banks and the RRBs training the bank staff etc, are the most important.

Roy (1994) concluded that the working of RRBs in West Bengal showed a remarkable trend with respect to deposits and advances.

Nathan (2002), the current policies of the financial liberalization have had an immediate, direct and dramatic effect on rural credit. There has been a contraction in rural banking in general and in priority sector lending and preferential lending to the poor in particular.

Khankhoje and Sathye (2008) in his study attempted to measure the variation in the performance in terms of productivity efficiency of RRBs in India.

Dr. B.K. Jha (2008) found that the effective banking services helps to promote rural entrepreneurship and improve the picture of rural India.

Syed Ibrahim (2010) concluded that the performance of rural banks in India has significantly improved after amalgamation process which has been initiated by the Government of India.

Anil Kumar Soni & Abhay Kapre (2012) pointed out that the RRBs commercial viability still has been questioned due to its limited business flexibility, smaller size of loan & high risk in loan & advances. Rural banks need to remove lack of transparency in their operation which leads to unequal relationship between banker and customer. Banking staff should interact more with their customers to overcome this problem

Jayaramaiah et.al (2013) demonstrated that the overall development of the economy and poverty alleviation depends on the system of providing affordable credit by the financial institutions that stimulates sustainable economic growth through the supply of credit in general
and to the rural sector in particular.

Kanika and Nancy (2013) pointed out that RRBs have successfully achieved the objectives of taking bank services to the door steps of rural households particularly in banking deprived rural area, to avail easy and cheaper credit to weaker rural section of the society.

Megha and Aparna Bhatia (2013) opined that the overall position of Regional Rural Banks in India has improved during the post amalgamation period, though the numbers of Regional Rural Banks have decreased.

Raghavendra and Chaya (2014) reveal that credit borrowing, loan & advances, branches, and credit deposit ratios continue to be unsatisfactory and the RRBs are still hesitant to purvey credit to small and marginalized farmers.

Kuldeep Singh (2014) concludes that the efforts made by RRB in branch expansion, deposit mobilization, rural development and credit deployment in weaker section of rural areas are appreciable.

Dr. Y.G. Baligatti (2016) his study reveals that RRBs have taken initiation to expand their branch net work and extending their area of operations, it is witnessed that though the RRBs are successful in providing banking services to unbanked area there is an imbalance growth of RRBs where prominent backward area has been neglected in providing bank credit.

Mrs. Geetha R.S (2016) advised that although the Performance of Pragathi Gramina Bank in meeting its objectives is successful and appreciable furthermore the Government has to give needful support to these Regional Rural Banks to make them more viable and successful in meeting the needs of rural credit in the coming years.

Research Methodology & Research Design

The study is exploratory in nature and makes use of resultant data. The study is mainly based on secondary data, and the actual data were collected mainly from annual reports of the National Bank for Agriculture and Rural Development (NABARD) and Reserve Bank of India (RBI). Other related information collected from journals, conference proceedings and websites. The study is restricted to some specific area like the Number of Branches, District Coverage, Productivity, Capital Funds, Deposit Mobilization, Loans Outstanding and Investment, Recovery Performance, Non-Performing Assets and Return on Investment made by the regional rural banks (RRBs) in India for a sixteen years period commencing from 2001-2002 to the year 2015-2016. In order to analyze the data and draw conclusions in this study, various statistical tools like ‘t’ test and ANOVA have been accomplished through EXCEL.

Results and Discussions

Functioning of Regional Rural Banks in India:

Before the birth of RRBs in India, commercial banks and co-operative banks rendered services to the rural sector. In spite of having such a large number of bank branches, the credit requirements of the rural residents in India were quite poor. Regional rural banks in India have achieved tremendous growth in terms of network of banks and branches, as illustrated in Table 1.

Branch Expansion Programme/ Banking Solutions

The table 1 shows clearly that the number of RRBs decreased to 56 in the year 2015-2016 in comparison to 196 in the year 2001-02. It is because of amalgamation that starts in the year 2005 and still in the process. However on the other side the number of branches and district coverage increased significantly from 14,311 branches covering 484 districts with 196 RRBs in 2001-2002 to 20,904 branches covering 644 districts with 56 RRBs in 2015-2016 recording the growth of 4.39%. The increase in the number of branches over the period is 1.46 times and the district coverage is 1.33 times.

't' test is performed to conclude whether the pre merger period performance of branches expansion is significantly differs from the post merger period performance of branches expansion of the RRBs in India. The Hypotheses framed are as follows:

H0: There is no difference in performance of branch expansion of RRBs between the pre merger and post merger period

H1: There is difference in performance of branch expansion of RRBs between the pre merger and post merger period

The observed value of t is 6.81515 > 2.14478 which fall in the rejection region and thus, we reject H0 and we can conclude that there is difference in the performance of branch expansion of RRBs between the pre-merger and post-merger period, at 0.05 level of significance.

Table: 1 Branch Expansion and District Coverage of RRBs

Years	No. of RRB,s	No. of Districts (Covered)	% Growth	No. of Branches Opened	No. of Branches	% Growth
Mar-01	196	484	-	-	14,311	-

Mar-02	196	511	5.58	79	14,390	0.55
Mar-03	196	516	0.98	43	14,433	0.30
Mar-04	196	518	0.39	12	14,445	0.08
Mar-05	196	523	0.97	39	14,484	0.27
Mar-06	133	525	0.38	10	14,494	0.07
Mar-07	96	534	1.71	26	14,520	0.18
Mar-08	91	594	11.24	241	14,761	1.66
Mar-09	86	616	3.70	420	15,181	2.85
Mar-10	82	618	0.32	299	15,480	1.97
Mar-11	82	618	0.00	521	16,001	3.37
Mar-12	82	620	0.32	908	16,909	5.67
Mar-13	64	635	2.42	952	17,861	5.63
Mar-14	57	642	1.10	1221	19,082	6.84
Mar-15	56	644	0.31	942	20,024	4.94
Mar-16	56	644	0.00	1822	20,904	4.39

- Source Annual Reports of, NABARD, From March 2001 to 2016

t-Test: Two-Sample Assuming Unequal Variances

	Post Merger	Pre Merger
Mean	608.1818182	510.4
Variance	1744.563636	236.3
Observations	11	5
Hypothesized Mean Difference	0	
Df	14	
t Stat	6.815153017	
P(T<=t) one-tail	4.19512E-06	
t Critical one-tail	1.761310115	
P(T<=t) two-tail	8.39024E-06	
t Critical two-tail	2.144786681	

Deposits Mobilized and Lending Operations of RRBs

RRB is showing considerable improvement in their lending and deposit performance. The deposit mobilized increased over the period was 8.23 times and lending was 13.10 times and the CD ratio increased to 65.79% up to 2015-16.

Deposits: Deposit Mobilization is a part of banking services and one of the essential jobs of RRBs. Nonstop and sufficient amount of deposit mobilization will ensure the banks to operate their function of lending and investment on which the success of the bank depends. Being an essential job the table 2 shows that the deposits of RRBs increased from Rs. 38,277.78 crore in the year 2001 to Rs. 3,15,048 crore in the year 2016 registering the growth rate 15.39%. The table also enlightens that after merger process the deposits were increased from 16.36% in 2005 up to 21.29% in 2009, but after 2009 the public deposits were start declining.

Loans/Advances: The main motive behind the birth of RRBs is to improve the credit conditions in rural areas and to develop rural economy by providing credit and other banking facilities to the rural population. It is shown in the table 2 that the advances and loans given by all the RRBs in country increased from Rs. 15815.80 crore in 2001 to Rs. 2,07,279 crore in 2016 registering the growth of 14.55%. We can analyze from the table that, merger process not only affect deposits but also loans and advances after 2010 loans and advances were start declining.

Credit Deposit Ratio (C/D Ratio): The geneses of RRBs taken place to develop rural economy by providing credit and other banking facilities for the development of agriculture, trade and other productive activities in the rural areas. The credit deposit ratio of the bank indicates the creation of credit out of the deposits mobilized by the banks which has been furnished in Table-2. The table exhibits that CD ratio increased from 41.32% in the year 2001 to 65.79% in 2016. There has been consistent growth in the sphere of credit deposit ratio. The year 2013-14 registered a higher rate i.e., 66.56%.

The ANOVA test is performed to compare the performance of deposit mobilization with loans/advances of RRBs, to test whether the merger process has resulted in improving the performance of these banks in India during 2001-2016.

The hypothesis framed as follows

HO: There is no difference in the performance between Loans/Advances and Deposits of the RRBs

H1: There is difference in the performance between Loans/Advances and Deposits of the RRBs

The ANOVA test result shows that the mean level of loans 82088.58 is less than that of deposits 135113.43. According to the test results, the calculated value of F=3.887561 is less than with the value critical F=4.1708767, with a critical value of .05. Therefore we may conclude that, this analysis supports the null hypothesis that merger process does not affect the performance of loans/advances and investments of the RRBs.

Table 2 Deposits Mobilized and Lending Operations Of RRBs (Rs. In Crore)

Years	Deposits Rs. In Crore)	Increment In Deposits	% Increment In Deposits	Loans/Advances (Rs. In Crore)	Increment In Loans/Advances	% Increment In Loans/Advances	Credit Deposit Ratio
Mar-01	38,277.78	-	-	15,815.80	-	-	41.32
Mar-02	44,539.15	6,261.37	16.36	18,629.55	2,813.75	17.79	41.83
Mar-03	50,098.00	5,558.85	12.48	22,158.00	3,528.45	18.94	44.23
Mar-04	56,350.00	6,252.00	12.48	26,113.00	3,955.00	17.85	46.34
Mar-05	62,143.00	5,793.00	10.28	32,870.03	6,757.03	25.88	52.89
Mar-06	71,328.83	9,185.83	14.78	39,712.57	6,842.54	20.82	55.68
Mar-07	83,143.55	11,814.72	16.56	48,492.59	8,780.02	22.11	58.32
Mar-08	99,093.46	15,949.91	19.18	58,984.27	10,491.68	21.64	59.52
Mar-09	120,189.90	21,096.44	21.29	67,802.10	8,817.83	14.95	56.41

Mar-10	145,034.95	24,845.05	20.67	82,819.10	15,017.00	22.15	57.10
Mar-11	166,232.34	21,197.39	14.62	98,917.43	16,098.33	19.44	59.51
Mar-12	186,336.07	20,103.73	12.09	116,384.97	17,467.54	17.66	62.46
Mar-13	211,488.00	25,151.93	13.50	137,078.00	20,693.03	17.78	64.82
Mar-14	239,494.00	28,006.00	13.24	159,406.00	22,328.00	16.29	66.56
Mar-15	273,018.00	33,524.00	14.00	180,955.00	21,549.00	13.52	66.28
Mar-16	315,048.00	42,030.00	15.39	207,279.00	26,324.00	14.55	65.79

- Source Annual Reports of NABARD, From March 2001 to 2016

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Deposits	16	2161815.03	135113.4394	7762626802
Loans/Advances	16	1313417.41	82088.58813	3809192076

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.25E+10	1	22493078801	3.887561504	0.057928242	4.170876757
Within Groups	1.74E+11	30	5785909439			
Total	1.96E+11	31				

Branch & Staff Productivity of RRBs in India

The table 3 enlightens that the business of all the RRBs in India, increased from Rs. 63,168.70 crore in 2001-2002 to 5,22,327 crore in 2015-2016, recording an increase of 8.26 times. The increment in percentage of total business took place because deposits and landing operations registered the growth of 15.39% & 14.55%

respectively in the year 2015-2016.

The per-branch productivity of business of RRBs increased from 4.39 crore in 2001-2002 to 24.99 crore in 2015-2016 recording an increase of 5.69 times. During the same period the per employee productivity of business also increased from Rs. 1.04 crore in 2001-2002 to Rs. 4.98 crore in 2013-2014 recording an increase of 4.79 times. Because of not Availability of data, per-staff productivity was not calculated for last two years.

The performance of pre-branch productivity and per-staff productivity of RRBs were compared using ANOVA to test whether the merger process has resulted in improving the productivity performance of these banks in India during 2001-2016 or not.

The hypothesis framed as follows

HO: There is no difference in the performance between Per-Branch Productivity and Per-Staff Productivity

H1: There is difference in the performance between Per-Branch Productivity and Per-Staff Productivity

The ANOVA test result shows that the mean level of per-staff productivity 2.293333333 is less than that of per-branch productivity 13.25489477. According to the test results, the calculated value of F=36.03786652 with a critical value of .05, the critical F=4.195972. Therefore we may conclude that, this analysis supports the H1 that there is difference in the performance of per-branch productivity and per-staff productivity of the RRBs.

Table 3 Productivity parameters of RRBs (Rs. In Crore)

Year	Business Deposits + advances	Branches	Per-Branch Productivity	Staff	Per-staff Productivity
2001-02	63,168.70	14,390	4.39	60,739	1.04
2002-03	72,256.00	14,433	5.01	70,151	1.03
2003-04	82,463.00	14,446	5.71	69,297	1.19
2004-05	95,013.03	14,484	6.56	68,850	1.38
2005-06	1,11,041.40	14,489	7.66	68,970	1.61
2006-07	1,31,636.14	14,520	9.07	68,205	1.93
2007-08	1,58,077.73	14,761	10.71	67,845	2.33
2008-09	1,87,992.00	15,181	12.38	68,610	2.74
2009-10	2,27,854.05	15,480	14.72	61,582	3.70
2010-11	2,65,149.77	15,938	16.64	70,145	3.78

2011-12	3,02,721.04	16,909	17.90	74,379	4.07
2012-13	3,48,566.00	17,861	19.52	75,447	4.62
2013-14	3,98,900.00	19,082	20.90	80,100	4.98
2014-15	4,53,973.00	20,024	22.67	NA	0.00
2015-16	5,22,327.00	20,904	24.99	NA	0.00

- Source Annual Reports of NABARD, From March 2001 to 2016

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Per-Branch Productivity	15	198.8234215	13.25489477	47.40418534
Per-Staff Productivity	15	34.4	2.293333333	2.608138095

ANOVA

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	901.1687181	1	901.1687181	36.03786652	1.8146E-06	4.195972
Within Groups	700.1725282	28	25.00616172			
Total	1601.341246	29				

Recovery Performance of RRBs In India

The timely recovery of loan amount is a very essential for any bank and RRBs are not an exemption of this. It has been recorded that RRBs are performing well with respect to branch expansions, deposit mobilization and lending operations, but RRBs never record 100% recovery in any year since formation.

Table 4 shows an improvement in the recovery percentage during 2001-2016, from 70.59% as on 30 June 2001 to 82.51% as on 30 June 2016. The minimum recovery percentage was recorded is 70.59% in June 2001 before merger and 77.85% in 2009 after merger. Afterwards, the recovery performance of RRBs gradually improved except 79.49% in June 2015. It is clear from the table 4 that RRBs are facing difficulties in recovering the loan amount; the recovery performance of RRBs is not that much satisfactory this can affect the overall performance of RRBs.

't' test is performed to conclude whether the pre merger period recovery performance is significantly differs from the post merger period recovery performance of the RRBs in India. The Hypotheses framed are as follows:

H0: There is no difference in recovery performance of RRBs between the pre merger and post merger period
H1: There is difference in recovery performance of RRBs between the pre merger and post merger period

The observed value of t is 2.78205614 ≥ 2.776445105 which fall in the rejection region and thus, we reject H0 and we can conclude that there is difference in the performance of RRBs between the pre-merger and post-merger period, at 0.05 level of significance.

Table 4 Recovery Performance Of RRB,s (Rs. In Crore)

Years	Demand	Collection	Balance	Recovery
Jun-01	9,617.93	6,789.59	2,828.34	70.59
Jun-02	11,569.82	8,274.34	3,295.48	71.52
Jun-03	13,246.95	9,738.80	3,508.15	73.52
Jun-04	17,656.08	13,712.78	3,943.30	77.67
Jun-05	19,370.17	15,755.18	3,614.99	81.34
Jun-06	24,071.58	19,209.67	4,861.91	79.80
Jun-07	29,527.04	23,765.79	5,761.25	80.49
Jun-08	32,672.05	26,402.28	6,269.77	80.81
Jun-09	38,783.46	30,192.92	8,590.54	77.85
Jun-10	42,567.32	34,092.16	8,475.16	80.09
Jun-11	49,436.69	39,564.18	9,872.51	81.18
Jun-12	58,125.64	47,430.52	10,695.12	81.60
Jun-13	NA	NA	NA	81.20
Jun-14	NA	NA	NA	81.90
Jun-15	NA	NA	NA	79.49
Jun-16	NA	NA	NA	82.51

Source Annual Reports of NABARD, From March 2004-2005 to 2015-2016 t-Test: Two-Sample Assuming Unequal Variances

	Post-merger	Pre-merger
Mean	80.62913357	74.92606352
Variance	1.677287491	20.24902784
Observations	11	5
Hypothesized Mean Difference	0	
Df	4	
t Stat	2.78205614	
P(T<=t) one-tail	0.024856941	
t Critical one-tail	2.131846782	
P(T<=t) two-tail	0.049713883	
t Critical two-tail	2.776445105	

Capital Composition

In comparison to cooperative banks and commercial banks, RRBs plays a vital role in the rural credit market of India. The motive behind the establishment of the RRB was to mobilize deposits, access to central money market and modernized outlook. Sound financial position is very essential for any organization to render the services to the society constantly. The total capital of RRBs is divided in to two types of capital i.e., (A) Owned Capital and (B) Borrowed Capital.

Table 5 reveals the year-wise growth in total capital i.e. growth in owned funds and borrowed funds of RRBs in India. Both the owned funds and borrowed funds have constantly been increased over the period of 2001-16. It is essential to examine from table 5 that the borrowed funds constitute more percentage than the owned funds of total funds during the post merger period from 2005-2006 to 2015-2016. The figure of borrowed funds increased from Rs. 4,524 crore in 2001-02 to Rs. 48,110 crore in the year 2015-16 and the owned funds increased from Rs. 4,059 crore in 2001-02 to Rs. 27,716 crore in 2015-16. It is

The owned funds and borrowed funds of RRBs were compared using ANOVA and t test is performed to analyze the chances in total funds of pre-merger period with post-merger period, to test whether the merger process has resulted in improveing the total fund performance of these banks in India during 2001-2016.

The hypothesis framed as follows

HO: There is no difference in the performance between Owned Fund and Borrowed Fund

H1: There is difference in the performance between Owned Fund and Borrowed Fund

The ANOVA test result shows that the mean level of owned funds 12725.65 is less than that of borrowed funds 22142.27. According to the test results, the calculated value of F=3.197996 with a critical value of .05, the critical F=4.195972. Therefore we may conclude that, this analysis supports the H0 that there is no difference in the performance of owned funds and borrowed funds of the RRBs.

't' test is performed to conclude whether the pre merger period performance of total funds is significantly differs from the post merger period performance of total funds of the RRBs in India. The Hypotheses framed are as follows:

H0: There is no difference in performance of total funds of RRBs between the pre merger and post merger period

H1: There is difference in performance of total funds of RRBs between the pre merger and post merger period

The observed value of t is 4.424827193 > 2.228138842 which fall in the rejection region and thus, we reject H0 and we can conclude that there is difference in the performance of total funds of RRBs between the pre-merger and post-merger period, at 0.05 level of significance.

Table 5 Components Of Total Capital/ Fund (Rs. In Crore)

Year	Owned Funds	Growth %	% to Total Funds	Borrowed Funds	Growth %	% to Total Funds	Total Funds
2001-02	4,059.00	-	47.29	4,524.00	-	52.71	8583.00
2002-03	4,666.00	14.95	49.30	4,799.00	6.08	50.70	9465.00
2003-04	5,438.00	16.55	54.20	4,595.00	-4.25	45.80	10033.00
2004-05	6181.27	13.67	52.81	5524.32	20.22	47.19	11705.59
2005-06	6646.59	7.53	47.65	7302.59	32.19	52.35	13949.18
2006-07	7285.97	9.62	42.70	9775.80	33.87	57.30	17061.77

2007-08	8732.59	19.85	43.17	11494.00	17.58	56.83	20226.59
2008-09	10910.29	24.94	46.14	12734.65	10.79	53.86	23644.94
2009-10	12247.16	12.25	39.49	18770.06	47.39	60.51	31017.22
2010-11	13838.92	13.00	34.31	26490.80	41.13	65.69	40329.72
2011-12	16462.00	18.95	35.21	30288.84	14.34	64.79	46750.84
2012-13	19445.00	18.12	33.81	38073.00	25.70	66.19	57518.00
2013-14	22172.00	14.02	30.62	50230.00	31.93	69.38	72402.00
2014-15	25084.00	13.13	29.68	59422.00	18.30	70.32	84506.00
2015-16	27716.00	10.49	36.55	48110.00	-19.04	63.45	75826.00

- Source Annual Reports of NABARD, From March 2004-2005 to 2015-2016

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Owned Fund	15	190884.8	12725.65	60645994
Borrowed Fund	15	332134.1	22142.27	3.55E+08

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	665045209.2	1	6.65E+08	3.197996	0.084556	4.195972
Within Groups	5822792087	28	2.08E+08			
Total	6487837296	29				

t-Test: Two-Sample Assuming Unequal Variances of total funds

	post-merger	pre-merger
Mean	43930.20545	9946.6475
Variance	644080081.7	1730951.43
Observations	11	4
Hypothesized Mean Difference	0	
Df	10	

t Stat	4.424827193
P(T<=t) one-tail	0.000642213
t Critical one-tail	1.812461102
P(T<=t) two-tail	0.001284427
t Critical two-tail	2.228138842

Growth in Investments

The year wise investment made by the RRBs is presented in Table 6. It can be observed from the table that the merger process doesn't affect the investments there has been a consistent growth in the area of investment activity. It can also be observed that the amount of investment of RRBs increased from Rs. 30531.64 crore in the year 2001-02 to Rs. 2,10,936 crore in the year 2015-16 registering the growth of 29.58%.

't' test is performed to conclude whether the pre merger period performance of total investment is significantly differs from the post merger period performance of total investments of the RRBs in India. The Hypotheses framed are as follows:

H0: There is no difference in performance of total funds of RRBs between the pre merger and post merger period

H1: There is difference in performance of total funds of RRBs between the pre merger and post merger period

The observed value of t is 4.424827193 > 2.228138842 which fall in the rejection region and thus, we reject H0 and we can conclude that there is difference in the performance of total funds of RRBs between the pre-merger and post-merger period, at 0.05 level of significance.

Table 6 Growth In Investments of RRBs in India (Rs. Crore)

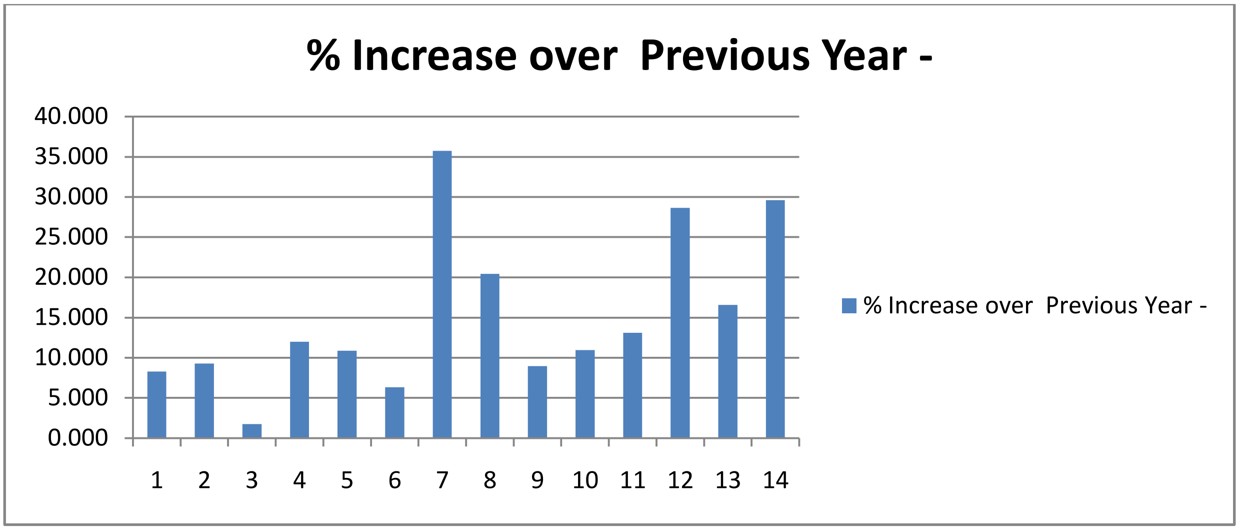
Year	Total Investment	Increase over Previous Year	% Increase over Previous Year
2001-02	30,531.64	-	-
2002-03	33,062.79	2531.15	8.29
2003-04	36,135.16	3072.37	9.29

2004-05	36,767.66	632.5	1.75
2005-06	41,182.45	4414.79	12.01
2006-07	45,666.14	4483.69	10.89
2007-08	48,559.54	2893.40	6.34
2008-09	65,909.92	17350.38	35.73
2009-10	79,379.16	13469.24	20.44
2010-11	86,510.44	7131.28	8.98
2011-12	95,974.93	9464.49	10.94
2012-13	1,08,548.00	12573.07	13.10
2013-14	1,39,631.00	31083.00	28.64
2014-15	1,62,781.00	23150.00	16.58
2015-16	2,10,936.00	48155.00	29.58

- Source Annual Reports of NABARD, From March 2001-16

t-Test: Two-Sample Assuming Unequal Variances

	Post-merger	Pre-merger
Mean	98643.50727	34124.3125
Variance	2871500919	8354973.12 8
Observations	11	4
Hypothesized Mean Difference	0	
Df	10	
t Stat	3.977408729	
P(T<=t) one-tail	0.001305939	
t Critical one-tail	1.812461102	
P(T<=t) two-tail	0.002611877	
t Critical two-tail	2.228138842	



Profit Position Of RRBs in India:

In a highly competitive environment RRBs needed considerable amount of profit for their survival and growth. RRBs are primary component and backbone of financial system. Hence, it is crucial to earn profits by RRBs to build the strong financial system. Earning sufficient Profits is a sign of fruitful utilization of bank funds and reveals the operative efficiency of banks. Higher the amount of profit greater the operating efficiency and vice versa. The information relating to profitability of RRBs is given in Table 7.

Table 7 illustrates that the net profit position of RRBs raised from Rs. 600.62 crore in 2001-02 to Rs. 2,435 crore in 2015-16 indicating that more than 91.07% RRBs are operating on profitable line. It is also understandable from the table that due to the process of amalgamation RRBs improve the net profit position year after year. It is also clear that the number of loss making RRBs have reduced from 26 in 2001-02 to 5 in 2015-16 this count was Zero in the year 2013-14 and the amount of loss declined from Rs. 75.86 crore in 2001-02 to Rs. 0 in 2013-14, but in last two years the 5 RRBs have suffered a loss of Rs. 176 crore in 2014-15 and Rs. 121 crore in 2015-16. The accumulated loss making RRBs have reduced to 8 and amount of accumulated loss also reduced to Rs. 1,030 crore in 2015-16.

The amount of profit and amount of loss of the RRBs were compared using ANOVA, to test whether the amount of profit has improved in comparison to the amount of loss of RRBs in India during 2001-2016.

The hypothesis framed as follows

HO: There is no difference in the performance of Amount of Profit and Amount of Loss

H1: There is difference in the performance of Amount of Profit and Amount of Loss

The ANOVA test result shows that the mean level of amount of profit 1681.476 is more than that of amount of loss 101.6926667. According to the test results, the calculated value of F=52.44204551 is greater than the critical F=4.195972, with a critical value of .05,. Therefore we may conclude that, this analysis supports the H1 that there is difference in the performance of amount of profit and amount of loss of the RRBs.

Table 7 Profit Position Of RRBs in India (Rs. In Crore)

Year	No. of RRBs	RRBs in Profit	Amount of Profit	RRBs in Loss	Amount of Loss	Net Profit	RRBs with Accumulated Losses	Accumulated Losses
2001-02	196	170	676.48	26	75.86	600.62	NA	2,792.59
2002-03	196	167	699.93	29	92.05	607.88	NA	2,694.06
2003-04	196	156	733.97	40	214.68	519.29	NA	2,752.25
2004-05	196	166	902.60	30	154.49	748.11	83	2,715.01
2005-06	133	111	807.79	22	190.66	617.13	58	2,636.85
2006-07	96	81	926.40	15	301.25	625.15	39	2,759.49
2007-08	91	82	1,383.69	8	55.58	1,328.11	36	2,624.22
2008-09	86	80	1,823.55	6	35.91	1,787.64	31	2,299.98

2009-10	82	79	2,514.83	3	5.65	2,509.18	27	1,775.06
2010-11	82	75	2,420.75	7	71.32	2,349.43	23	1,532.39
2011-12	82	79	1,886.15	3	28.87	1,857.28	22	1,332.57
2012-13	64	63	2,275.00	1	2.07	2,272.93	11	1,091.00
2013-14	57	57	2,694.00	0	0.00	2,694.00	8	948.00
2014-15	56	51	2,921.00	5	176.00	2,745.00	8	1,072.00
2015-16	56	51	2,556.00	5	121.00	2,435.00	8	1,030.00

- Source Annual Reports of NABARD, From March 2001-16

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Amount of Profit	15	25222.14	1681.476	705841.2439
Amount Of Loss	15	1525.39	101.6926667	8008.308364

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	18717865.35	1	18717865.35	52.44204551	6.97E-08	4.195972
Within Groups	9993893.731	28	356924.7761			
Total	28711759.	29				

08

Return on Investment (ROI) and profit as percentage of volume of Business

Return on investment (ROI) measures the gain or loss generated on an investment relative to the amount of money invested. ROI is usually expressed as a percentage and is typically used for personal financial decisions, to compare profitability or to compare the efficiency of different investments. From the table 8 it is clear that investments increased from Rs.30,531.64 crore in 2001-02 to Rs. 2,10,936 crore in 2015-16 but there is no constant improvement can be seen in ROI it was 1.97% in 2001-02 and reached to its minimum level of 1.15% in 2015-16. The maximum ROI was recorded 3.16% in 2009-10.

't' test is performed to conclude whether the pre merger period ROI performance is significantly differs from the post merger period ROI performance of the RRBs in India. The Hypotheses framed are as follows:

H0: There is no improvement in ROI performance of RRBs between the pre merger and post merger period

H1: There is improvement in ROI performance of RRBs between the pre merger and post merger period

The observed value of t stat 1.133913408 is less than critical t 2.160368652, at 0.05 level of

Significance thus, we can conclude that there is no Improvement in the performance of ROI of RRBs between the pre-merger and post-merger period.

Table 8 Return on Investment (ROI) and profit as percentage of volume of Business (Rs. In Crore)

Year	Net Profits	Volume of Business	Profit as % of volume of	Investment	Return on Investment

			Business		
2001-02	600.62	3,520.85	17.06	30,531.64	1.97
2002-03	607.88	3,053.26	19.91	33,062.79	1.84
2003-04	519.29	4,666.00	11.13	36,135.16	1.44
2004-05	748.11	3,466.26	21.58	36,767.66	2.03
2005-06	617.13	4,009.74	15.39	41,182.45	1.50
2006-07	625.15	4,526.48	13.81	45,666.14	1.37
2007-08	1328.11	6,107.37	21.75	48,559.54	2.74
2008-09	1787.64	8,610.31	20.76	65,909.92	2.71
2009-10	2509.18	10,472.10	23.96	79,379.16	3.16
2010-11	2349.43	12,306.53	19.09	86,510.44	2.72
2011-12	1857.28	15,129.41	12.28	95,974.93	1.94
2012-13	2272.93	18,355.00	12.38	1,08,548.00	2.09
2013-14	2694.00	21,224.00	12.69	1,39,631.00	1.93
2014-15	2745.00	24,011.00	11.43	1,62,781.00	1.69
2015-16	2435.00	26,685.00	9.12	2,10,936.00	1.15

- Source Annual Reports of NABARD, From March 2001-16

t-Test: Two-Sample Assuming Unequal Variances

	Post-merger	Pre-merger
Mean	2.090063953	1.819384999
Variance	0.429976512	0.071578945
Observations	11	4
Hypothesized Mean Difference	0	
Df	13	
t Stat	1.133913408	
P(T<=t) one-tail	0.138654348	
t Critical one-tail	1.770933383	
P(T<=t) two-tail	0.277308695	

t Critical two-tail	2.160368652

NPA to Loan

Table 9 concludes that the gross NPA of all RRBs decreased constantly in percentage, the gross NPA increased from Rs. 2,980 crore in 2001 to Rs. 13,369 in 2016. Table also shows that the gross NPA in percentage is declining from 18.84% in 2001 to 6.45% in 2016. An increment can be seen from 6.15% in 2015 to 6.45% in 2016 (as per unaudited data). While 32 RRBs reported Gross NPAs less than 5 % in 2015, 27 RRBs have reported Gross NPA less than 5 per cent in 2016.

Table 9 Percentage of Gross NPA to Loans of RRBs in India (Rs. In Crore)

Years	Gross Loans	Gross NPAs	% to Total
Jun-01	15,815.80	2,980	18.84
Jun-02	18,629.55	3,065	16.45
Jun-03	22,158.00	3,200	14.44
Jun-04	26,113.00	3,298	12.63
Jun-05	32,870.03	2,804	8.53
Jun-06	39,712.57	2,891	7.28
Jun-07	48,492.59	3,176	6.55
Jun-08	58,984.27	3,569	6.05
Jun-09	67,802.92	2,807	4.14
Jun-10	82,819.10	3,081	3.72
Jun-11	98,917.43	3,709	3.75
Jun-12	116,384.97	5,854	5.03
Jun-13	137,078.00	8,362	6.10
Jun-14	159,406.00	9,708	6.09
Jun-15	180,955.00	11,129	6.15
Jun-16	207,279.00	13,369	6.45

- Source Annual Reports of NABARD, From March 2001-16

Conclusion

From the above analysis, we can conclude that the rapid development of RRB has helped in reducing substantially the regional inequality in respect of banking facilities in India. The efforts made by RRB in branch expansion, deposit mobilization, rural development and credit deployment in weaker section of rural areas are appreciable. RRB successfully achieve its prime objectives like to take banking facilities and services to door steps particularly in banking deprived rural areas, to avail trouble-free and low cost credit to rural section who are dependent on private lenders, to encourage rural peoples for savings, to generate employment in rural areas and to bring down the cost of providing credit in rural areas. Thus in the present scenario RRBs have a strongest banking network in comparison to cooperatives banks and commercial banks. Government should take some more effective remedial steps to make Rural Banks viable. RRBs play an important role in rural areas with the objective of providing credit to small, marginal farmers & economically weaker section, for the development of agriculture, trade and industry. But still its commercial viability has been questioned due to its limited business flexibility, smaller size of loan, low percentage of loan recovery & high risk in loan & advances. Rural banks need to remove lack of transparency in their operation which leads to unequal relationship between banker and customer. Banking staff should interact more with their customers to overcome this problem. Banks should open their branches in areas where customers are not able to avail banking facilities. In this digitization era RRBs have to concentrate on speedy, qualitative and secure banking services to retain existing customers and attract potential customers.

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