CHAPTER IV

MERGERS AND ACQUISITIONS

This chapter analyzes mergers and acquisitions cases of banks. It has been divided in four parts. The first part deals with introduction and theory of mergers and acquisitions. The second part explains the regulatory framework of bank mergers in India. The third part analyzes the performance of the merging banks. It concludes with summary of main findings.

4.1 Introduction:

Post reforms period indicated sign of consolidation and thus expected significant changes in the entire structure of the Indian financial sector. One such aspect of reforms process has been consolidation of banks through mergers and acquisitions. Mergers and Acquisitions (M&A) emerged as one of the most effective and common methods of corporate restructuring and strengthening banks. It is a common strategy adopted by firms for restructuring and strengthening. M&As in the financial sector, in particular the banking sector, are undertaken mainly either to maximize the value of firms or for personal interest of managers like simply to enhance their firms' size relative to competitors. Size becomes an important issue after reforms as banks are open to compete with their foreign giant counterparts. In other words, firms resorted to mergers and amalgamations for a wide variety of reasons. Other things being equal, more than one motive may underlie the decision to merge by firms. Motives may vary with the firm characteristics such as size or organizational structure, over time, across countries or industries or even business strategy within a segment. The main aspect of M&As is the synergy that firms could gain after combination and thereby maximize shareholders' value. The main synergies are the ability to enjoy economies of scale, ability to earn more revenue and the potentials for tax gains.

cquisitions:

m acquisitions. Mergers refer to the merging of one firm into another or two firms getting merged to form a new corporate entity. In a merger, only one organization survives and the other goes out of existence. Acquisition or takeover on the other hand, denotes a firm acquiring controlling stake in another so that the acquirer can have management control over the other firm.

There are several theoretical arguments to analyze the mergers and acquisition activities. According to R. Marris (1964), and H. Manne (1965), the takeover threat is a process to discipline managers who deviate from profit maximization. In a different view, S. Grossman and O. Hart (1981) give the argument that takeover occurs due to under valuation of a company in the stock market. J. Linter (1971), H. Levy and M. Surnat (1970) and W. Lewellen (1971) have looked at takeovers and mergers as a way to diversify the business risks of a firm by operating in different areas without going through the initial stages of starting a new company.

D. A. Hay and D. J. Morris (1991) have classified the motives behind mergers and takeovers by the firms into the transactions involved and the type of markets involved. The transactions involved can be sub-divided into four categories – agreed merger, contested takeovers, divestment and management buyouts. According to the markets involved, mergers can be classified into three categories – horizontal mergers, vertical mergers and conglomerate mergers. A horizontal merger is between two or more companies that compete in the same business and geographical market. A vertical merger is a combination of two or more firms involved in different stages of production or distribution of the same product, and can be either forward or backward merger. Conglomerate merger is a combination of firms engaged in unrelated lines of business activity. The type of M&As also dictates the acquisition logic, the framework for the evaluation of targets, the acquisition target profile and the post acquisition integration.

To say, the objectives of the firms that opted for mergers may be to – (i) change in management, ii) change in control, iii) substantial acquisition, iv) consolidation of the firms, v) merger or buyout of subsidiaries for size and efficiency etc. so on and so forth. In the present study, performance of the banks that went for mergers during and after the analyzed. The main emphasis is to see whether mergers contribute to overall growth and economies of scale and efficiency of the banks.

4.2 <u>Regulatory framework of Mergers and Acquisitions in India</u>:

The regulatory framework for M&As in the banking sector in India is provided by the Banking Regulation (BR) Act, 1949. The Act provides for two types of amalgamations, namely, (i) voluntary and (ii) compulsory. The RBI has the discretionary power to approve the voluntary amalgamation of two banking companies under section 44(A) of the BR Act. As per the compulsory amalgamations are concerned, these are induced or forced by the Reserve Bank under Section 45 of the BR Act, in public interest, or in the interest of the depositors of a distressed bank, or to secure proper management of a banking company, or in the interest of the banking system. In this regard, the amalgamation will become effective on the date indicated in the notification issued by the Government. In case of voluntary merger or acquisition of any financial business by any banking institution, there was no provision under the BR Act for obtaining approval of the Reserve Bank. Guidelines regarding the process of merger proposal, determination of swap ratios, disclosures, buying/selling norms of shares before and during the process of merger are laid down by RBI for the voluntary mergers involving banking companies as well as between non-banking and banking companies. The statutory framework for the amalgamation of public sector banks viz., nationalized banks, SBI and its subsidiary banks, is, however, different and these provisions of BR Act do not apply to them. For SBI and its associates under the SBI Act 1955 and for the nationalized banks under the Banking Companies Act, 1970 and 1980 or the Bank Nationalization Acts in consultation with RBI to prepare a scheme for the correspondent banks. Although the consolidation process through mergers and acquisitions of banks in India has been going for several years it gained momentum in late 1990s.

Table 4-1 shows the list of banks merged after banks nationalization of 1969 till the period before the financial sector reforms. Twelve cases of mergers were found during the period. From the **Table 4-1**, it is observed that consolidation of banks was carried out before the reforms period to amalgamate the unviable units by the Reserve g banks are public sector banks. The main motive is to rough compulsory amalgamation in order to weed out the unviable banks by liquidation or by taking of the assets of the non-functioning banks by other banks.

Table 4-1

Banks Amalgamated since Nationalization of Banks in India

Date of Merger	Merging Bank	Merged With	Motive of Merger	Type of merger
08/11/1969	Bank of Bihar Ltd.	State Bank of India	Restructuring of Weak Bank	Compulsory
02/20/1970	National Bank of Lahore Ltd.	State Bank of India	Restructuring of Weak Bank	Compulsory
29/07/1985	Miraj State Bank Ltd.	Union Bank of India	Restructuring of Weak Bank	Compulsory
24/08/1985	Lakshmi Commercial Bank Ltd.	Canara Bank	Restructuring of Weak Bank	Compulsory
26/08/1985	Bank of Cochin Ltd.	State Bank of India	Restructuring of Weak Bank	Compulsory
19/12/1986	Hindustan Commercial Bank Ltd.	Punjab National Bank	Restructuring of Weak Bank	Compulsory
13/05/1988	Traders Bank Ltd.	Bank of Baroda	Restructuring of Weak Bank	Compulsory
31/10/1989	United Industrial Bank Ltd.	Allahabad Bank	Restructuring of Weak Bank	Compulsory
20/01/1990	Bank of Tamilnadu Ltd.	Indian Overseas Bank	Restructuring of Weak Bank	Compulsory
20/02/1990	Bank of Thanjavur Ltd.	Indian Bank	Restructuring of Weak Bank	Compulsory
20/02/1990	Parur Central Bank Ltd.	Bank of India	Restructuring of Weak Bank	Compulsory
29/08/1990	Purbanchal Bank Ltd.	Central Bank of India	Restructuring of Weak Bank	Compulsory

Source: Report on Trend and Progress, Reserve Bank of India, Various Issues.

Table 4-2

nmercial Banks merged from 1991 to 2006

Date of Merger	Merging Bank	Merged With	Motive of Merger	Type of merger
04/09/1993	New Bank of India	Punjab National Bank	Restructuring of Weak Bank	Compulsory
01/01/1996	Kashi Nath Seth Bank Ltd.	State Bank of India	Restructuring of Weak Bank	Compulsory
08/04/1997	Bari Doab Bank Ltd.	Oriental Bank of commerce	Restructuring of Weak Bank	Compulsory
08/04/1997	Punjab Co-operative Bank	Oriental Bank of Commerce	Restructuring of Weak Bank	Compulsory
03/06/1999	Bareilly Corporation Bank Ltd.	Bank of Baroda	For Economies of Scale & Scope	Voluntary
22/12/1999	Sikkim Bank Ltd.	Union Bank of India	Restructuring of Weak Bank	Compulsory
26/02/2000	Times Bank Ltd.	HDFC Bank Ltd.	For Economies of Scale & Scope	Voluntary
10/03/2001	Bank of Madura Ltd.	ICICI Bank Ltd.	For Economies of Scale & Scope	Voluntary
03/05/2002	ICICI Ltd.	ICICI Bank Ltd.	Universal Banking	Voluntary
20/06/2002	Benares State Bank Ltd.	Bank of Baroda	Restructuring of Weak Bank	Compulsory
01/02/2003	Nedungadi Bank Ltd.	Punjab National Bank	Restructuring of Weak Bank	Compulsory
25/06/2004	South Gujarat Local Area Bank Ltd.	Bank of Baroda	Restructuring of Weak Bank	Compulsory
14/08/2004	Global Trust Bank Ltd.	Oriental Bank of Commerce	Restructuring of Weak Bank	Compulsory
02/04/2005	IDBI Ltd.	IDBI Bank Ltd.	For Economies of Scale & Scope	Voluntary
01/10/2005	Bank of Punjab Ltd.	Centurion Bank Ltd.	For Economies of Scale & Scope	Voluntary
02/09/2006	Ganesh Bank of Kurundwad Ltd	Federal Bank Ltd.	Restructuring of Weak Bank	Compulsory
03/10/2006	United Western Bank Ltd.	IDBI Bank Ltd.	Restructuring of Weak Bank	Compulsory

Source: Report on Trend and Progress, RBI, Various Issues.

Table 4-2 shows the list of banks that went for mergers during the reforms period from 1991 to 2006-07. Seventeen banks underwent for merger, of which the number of compulsory merger is 11 and that of voluntary mergers is 6. A special case of voluntary merger is that of ICICI Bank where the motive is for reverse merger, a case of universal eforms, banks in India used M&A as a long term strategy

4.3 Hypotheses:

The main objective is to examine whether the performance of banks has decreased or increased after mergers. Accordingly, the following hypotheses are formulated for the current study:

Ho: There is no significant change in the performance of banks after mergers.

H1: There are significant changes in the performance of banks after mergers.

4.4 Data and Methodology:

The performance of the banks is analyzed in terms of financial ratios like profitability ratios, solvency ratios, efficiency and earning capacity of banks and growth rate of total assets. The financial ratio indicator and its use are defined as:

1) *Profitability Indicators* — Measure overall performance.

2) *Capital Adequacy Indicators* — Measure the bank's ability to meet its obligations relative to its exposure to risk.

3) *Efficiency Indicators* — Measure the bank's ability to generate income, pay expenses and measure the productivity of employees.

4) *Growth Indicators* — *Measure the bank's changes in assets.*

The specific measures used to represent these factors are defined in **Table 4-3** below. These variables of bank performance are examined in an attempt to identify whether merger has any improvement or bearing on the performance of the firms.

Table 4-3

Definitions of ratios used to analyze performance of merged banks between 1990-91 to 2006-07

Ratio	Definition
Profitability Indicators	
(i) Return on Assets (ROA)	Ratio of profit after tax to Total Assets
(ii) Return on Equity (ROE)	Ratio of net profit to average shareholders' equity
Solvency Indicator	
(i) Capital Adequacy Ratio (CAR)	Ratio of tier I & tier II capital to capital weighted assets
Efficiency Indicators	
(i) Spread	Net interest income as a percentage of Total Assets
(ii) Operating Cost/Total Assets	Total operating expenses as a percentage of Total Assets
(iii) Profit per employee	Ratio of net profit to the number of employees
Growth indicator	
(i) Asset Growth rate	Change in book value of Total Asset as a percentage of book value of Total Assets in the previous year

A comparison of the post-merger and pre-merger performance allows to measure the impact of the mergers. A benchmark of three years prior to merger and three years after the merger took place is taken as the period of study. In other words, the financial data for each bank are collected for six years. The financial data for the year in which the merger occurred is omitted under the study. Only five public sector banks are identified for merger study during the financial year 1990-91 to 2006-07. These banks are namely, the Bank of Baroda, Oriental Bank of Commerce, Punjab National Bank, State Bank of India and Union Bank of India. The financial parameters used are the profitability, solvency and efficiency. The average values of the selected financial parameters for the periods T-3, T-2 and T-1 are compared with its average values at T+1, T+2 and T+3 for each bank. In the next step paired student t-test is performed to check the mean difference between two different periods.

r and post-merger positions of the banks is essential. For , the sample paired t- test is appropriate for the present analysis of mergers because it can analyze and evaluate the level of the banks in two different time span.

The formula of paired sample t-test is given by:

$$t = \{\textstyle\sum_{i=1}^{N} (X_0 - X_1)/N\}/\sigma\sqrt{N} \qquad (4.1)$$

where,

X_0= pre-merger performance of the firm (s)

X_1= post-merger performance of the firm (s)

N= number of parameters used in the sample

σ = the standard deviation (S.D.) of the distribution of the change in performance of the merging banks.

By using the above mentioned formula (4.1), pre-merger and post-merger performance of the individual merging bank as well as for all the five banks altogether is measured for each of performance indicators. Also the mean values of the parameters used for the analysis of pre-merger and post-merger performance for each bank is compared to the average mean value of the five banks. The mean values of the parameters of five banks together are reported in **Table 4-5** at the column number (3).

Table 4-4

Summary statistics of performance indicators of 5(five) merging banks during pre- and post-merger period.

(Per c

Panel A: Bank of Baroda (BOB)

Period	ROA	ROE	CAR	OC/TA	Spread	Profit per employee	Growt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Pre- merger period				
T-3	0.81	15.15	13.30	2.31	3.01	0.91	---
T-2	0.85	16.40	12.10	2.22	2.85	1.07	12.20
T-1	0.45	8.33	12.80	2.54	3.06	0.59	8.05
Average	**0.70**	**13.29**	**12.73**	**2.36**	**2.97**	**0.86**	**10.12**
			Post-merger period				
T+1	1.05	18.81	12.65	2.16	2.75	1.92	---
T+2	1.20	20.32	13.91	2.12	3.02	2.43	11.37
T+3	0.75	12.58	12.61	2.09	3.15	1.71	11.23
Average	**1.00**	**17.24**	**13.06**	**2.12**	**2.97**	**2.02**	**11.30**

Source: Statistical Tables relating to Banks of India, Various issues, Reserve Bank of India.

Panel A-1: Descriptive statistics of paired *t*-test for Bank of Baroda

Financial Ratios	Period	Mean	Standard Dev.	t-value	Prob.	Rema
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
ROA	Pre-merger	0.703	0.220	- 9.330*	0.011	Signifi
	Post-merger	1.000	0.229			
ROE	Pre-merger	13.293	4.344	- 23.099*	0.002	Significant
	Post-merger	17.237	4.103			
CAR	Pre-merger	12.733	0.603	- 0.428	0.710	Not Significant
	Post-merger	13.057	0.739			
Spread	Pre-merger	2.973	0.110	0.000	1.000	Not Significant
	Post-merger	2.973	0.204			
OC/TA	Pre-merger	2.357	0.165	2.135	0.166	Not Significant
	Post-merger	2.123	0.035			
Profit Per employee	Pre-merger	0.857	0.244	- 11.26	0.008	Significant
	Post-merger	2.020	0.370			
Growth rate of Assets	Pre-merger	10.125	2.936	- 0.586	0.663	Not Significant
	Post-merger	11.300	0.099			

*, significant at the 5 per cent level.

(Per cent)

Panel B: Oriental Bank of Commerce (OBC)

Period	ROA	ROE	CAR	OC/TA	Spread	Profit per employee	Growt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8
				Pre- merger period			
T-3	1.38	23.76	nil	2.49	3.81	0.92	---
T-2	1.64	22.53	16.99	2.14	3.80	1.32	27.77
T-1	1.56	20.41	17.53	2.19	3.89	1.33	9.83
Average	**1.53**	**22.23**	**17.26**	**2.27**	**3.83**	**1.19**	**18.80**
				Post-merger period			
T+1	1.20	19.89	14.10	1.97	3.10	1.60	---
T+2	1.10	20.95	12.72	1.74	2.90	1.90	30.65
T+3	0.80	13.63	12.17	1.94	2.92	1.50	10.31
Average	**1.03**	**18.16**	**13.00**	**1.88**	**2.97**	**1.67**	**20.48**

Source: Statistical Tables relating to Banks of India, Various issues, Reserve Bank of India.

Panel B-1: Descriptive statistics of paired *t*-test for Oriental Bank of Commerce

Financial Ratios	Period	Mean	Standard Dev.	t-value	Prob.	Remark
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
ROA	Pre-merger	1.527	0.133	2.918	0.100	Not Signifi
	Post-merger	1.033	0.208			
ROE	Pre-merger	22.233	1.695	2.709	0.114	Not Significant
	Post-merger	18.157	3.956			
Spread	Pre-merger	3.833	0.049	11.072*	0.008	Significant
	Post-merger	2.973	0.110			
OC/TA	Pre-merger	2.273	0.189	4.993*	0.038	Significant
	Post-merger	1.883	0.125			
Profit Per employee	Pre-merger	1.190	0.234	- 3.055	0.093	Not Significant
	Post-merger	1.667	0.208			
Growth rate of Assets	Pre-merger	18.800	12.679	- 1.400	0.395	Not Significant
	Post-merger	20.481	14.378			

*, significant at 5 per cent level.

(Per cent)

Panel C: Punjab National Bank (PNB)

Period	ROA	ROE	CAR	OC/TA	Spread	Profit per employee	Growt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8
			Pre- merger period				
T-3	0.73	18.76	10.24	2.95	3.21	0.80	--
T-2	0.77	18.59	10.70	2.47	3.15	0.97	14.82
T-1	0.98	23.14	12.02	2.39	3.62	1.43	18.25
Average	**0.83**	**20.16**	**10.99**	**2.60**	**3.33**	**1.07**	**16.53**
			Post-merger period				
T+1	1.17	21.41	14.78	2.60	3.17	2.42	---
T+2	1.09	16.41	11.95	2.08	3.21	2.48	15.07
T+3	1.03	15.55	12.29	2.05	3.40	2.68	11.81
Average	**1.10**	**17.79**	**13.01**	**2.24**	**3.26**	**2.53**	**13.44**

Source: Statistical Tables relating to Banks of India, Various issues, Reserve Bank of India.

Panel C-1: Descriptive statistics of paired *t*- test for Punjab National Bank

Financial Ratios	Period	Mean	Standard Dev.	t-value	Prob.	Remark
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
ROA	Pre-merger	0.827	0.134	- 2.341	0.144	Not Signific
	Post-merger	1.097	0.070			
ROE	Pre-merger	20.163	2.579	0.802	0.506	Not Significant
	Post-merger	17.790	3.164			
CAR	Pre-merger	10.987	0.924	- 1.564	0.258	Not Significant
	Post-merger	13.007	1.545			
Spread	Pre-merger	3.327	0.256	0.814	0.501	Not Significant
	Post-merger	3.260	0.123			
OC/TA	Pre-merger	2.603	0.303	23.568*	0.002	Significant
	Post-merger	2.243	0.309			
Profit Per employee	Pre-merger	1.067	0.326	- 13.309*	0.006	Significant
	Post-merger	2.527	0.136			
Growth rate of Assets	Pre-merger	16.534	2.428	0.924	0.525	Not Significant
	Post-merger	13.440	2.305			

*, significant at 5 per cent level.

(Per cent)

Panel D: State Bank of India (SBI)

Period	ROA	ROE	CAR	OC/TA	Spread	Profit per employee	Growt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8
				Pre- merger period			
T-3	0.25	9.53	nil	2.64	2.61	0.12	---
T-2	0.59	16.18	nil	2.96	3.25	0.31	9.38
T-1	0.58	16.31	11.60	3.09	3.28	0.36	18.42
Average	**0.47**	**14.01**	**11.60**	**2.90**	**3.05**	**0.26**	**13.90**
				Post-merger period			
T+1	1.04	21.17	14.58	2.63	3.01	0.78	---
T+2	0.46	10.27	12.51	2.65	2.72	0.43	23.84
T+3	0.75	18.20	11.49	2.41	2.65	0.88	17.53
Average	**0.75**	**16.55**	**12.86**	**2.56**	**2.79**	**0.70**	**20.68**

Source: Statistical Tables relating to Banks of India, Various issues, Reserve Bank of India.

Panel D-1: Descriptive statistics of paired *t*-test for State Bank of India

Financial Ratios	Period	Mean	Standard Dev.	t-value	Prob.	Rema
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
ROA	Pre-merger	0.473	0.194	- 1.021	0.415	Not Signi
	Post-merger	0.750	0.290			
ROE	Pre-merger	14.007	3.878	- 0.500	0.666	Not Significant
	Post-merger	16.547	5.635			
Spread	Pre-merger	3.045	0.379	0.772	0.521	Not Significant
	Post-merger	2.793	0.191			
OC/TA	Pre-merger	2.8967	0.232	1.720	0.228	Not Significant
	Post-merger	2.5633	0.133			
Profit Per employee	Pre-merger	0.263	0.127	- 2.678	0.116	Not Significant
	Post-merger	0.697	0.236			
Growth rate of Assets	Pre-merger	13.902	6.391	- 0.883	0.539	Not Significant
	Post-merger	20.683	4.466			

(Per cen

Panel E: Union Bank of India (UBI)

Period	ROA	ROE	CAR	OC/TA	Spread	Profit per employee	Growt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8
				Pre- merger period			
T-3	0.96	16.38	10.53	2.77	3.41	nil	---
T-2	0.97	16.82	10.86	2.62	3.17	0.81	13.31
T-1	0.51	9.83	10.09	2.51	2.66	0.52	11.66
Average	**0.81**	**14.34**	**10.49**	**2.63**	**3.08**	**0.67**	**12.69**
				Post-merger period			
T+1	0.40	8.65	10.86	2.62	3.13	0.55	---
T+2	0.71	15.88	11.07	2.18	3.01	1.22	14.82
T+3	1.08	23.65	12.41	1.99	2.93	2.15	11.26
Average	**0.73**	**16.06**	**11.45**	**2.26**	**3.02**	**1.31**	**13.04**

Source: Statistical Tables relating to Banks of India, Various issues, Reserve Bank of India.

Panel E-1: Descriptive statistics of paired *t*-test for Union Bank of India

Financial Ratios	Period	Mean	Standard Dev.	t-value	Prob.	Remark
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
ROA	Pre-merger	0.813	0.263	0.247	0.828	Not Signific
	Post-merger	0.730	0.340			
ROE	Pre-merger	14.343	3.915	- 0.270	0.813	Not Significant
	Post-merger	16.060	7.502			
CAR	Pre-merger	10.493	0.386	- 1.393	0.293	Not Significant
	Post-merger	11.445	0.841			
Spread	Pre-merger	3.080	0.383	0.339	0.769	Not Significant
	Post-merger	3.023	0.101			
OC/TA	Pre-merger	2.633	0.131	3.292	0.081	Not Significant
	Post-merger	2.263	0.323			
Profit Per employee	Pre-merger	0.665	0.251	-1.672	0.343	Not Significant
	Post-merger	1.685	0.658			
Growth rate of Assets	Pre-merger	12.686	1.455	- 0.472	0.719	Not Significant
	Post-merger	13.04	2.517			

Table 4-5

Paired *t*-test descriptive measures of selected banking parameters before and after mergers for all the 5(five) me banks

Financial Ratios	Period	Mean	Standard Dev.	*t*-value	Prob.	Remar
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ROA	Pre-merger	0.869	0.394	- 0.347	0.746	Not signif
	Post-merger	0.922	0.170			
ROE	Pre-merger	16.808	4.092	- 0.229	0.830	Not significant
	Post-merger	17.158	0.864			
CAR	Pre-merger	12.615	2.728	- 0.053	0.961	Not significant
	Post-merger	12.673	0.690			
Spread	Pre-merger	3.252	0.351	1.556	0.195	Not significant
	Post-merger	3.005	0.168			
OC/TA	Pre-merger	2.553	0.247	12.242*	0.000	Significant
	Post-merger	2.215	0.246			
Profit per employee	Pre-merger	0.808	0.365	- 4.110*	0.015	Significant
	Post-merger	1.643	0.695			
Growth rate of Assets	Pre-merger	14.409	3.368	- 0.870	0.434	Not significant
	Post-merger	15.789	4.450			

*, significant at 1 per cent level.

values of performance indicators for each individual period:

In the **Table 4-4** a summary of comparison of performance indicators in pre-merger and post-merger period and results of sample paired t-test for each of the merged banks namely BOB, OBC, PNB, SBI and UBI are reported. A brief analysis for each individual bank is carried out. Paired t-test is also performed for each individual bank. The test result is reported in the lower panel of each individual table for pre-merger and post-merger average values.

4.5.1 Bank of Baroda (BOB)

From the panel A of **Table 4-4**, it is observed that the mean profitability ratios, both the ROA and ROE have improved after mergers. The mean ROA in the pre-merger period of the bank was 0.70 per cent and improved to the level of 1.00 per cent in post-merger period. Similarly, the mean ROE also improved from 13.29 per cent to the level of 17.24 per cent in post-merger period. For the solvency parameter CAR, the bank maintained the regulatory requirement of 9 per cent. The mean CAR in pre-merger period was 12.73 per cent and improved to 13.06 per cent in the post-merger period. The efficiency parameters measured by the ratio of OC/TA, Spread and Profit per employee also improved after mergers. The ratio of operating cost to total assets was declined from 2.36 per cent in pre-merger period to 2.12 per cent in the post-merger period. However, the mean Spread in the pre-merger period which was 2.97 per cent has remained the same in the post-merger period. And the efficiency parameter profit per employee jumped from 0.86 per cent in pre-merger period to 2.02 per cent in post-merger period. The performance of the bank is also found better in terms of the growth rate of the average assets. The asset growth rate which was 10.12 per cent in pre- merger period improved to 11.30 per cent rate of growth in the post-merger period. In all, for the Bank of Baroda, the performance of the bank has improved in terms of all four performance measurements taken.

Results of the paired sample t-test are reported for the bank in panel A-1 of **Table 4-4**. Three performance indicator variables namely profitability measures, ROA and ROE, and profit per employee of the bank are found to be significant at the 5 per cent indicator variables namely CAR, Spread, OC/TA and duce significant t-values.

4.5.2 Oriental Bank of Commerce

For the Oriental Bank of Commerce (OBC), the mean profitability ratios show a declining trend after the mergers. The mean ROA has declined from 1.53 per cent in pre-merger period to 1.03 per cent in the post-merger period. Moreover, mean ROE has also declined from 22.23 per cent in pre-merger period to 18.16 per cent in post-merger period. The declining trend in the profitability ratios of the bank indicated that the profitability of the bank was deteriorated with more investments of the available capital assets. In other words, bank is not efficient in managing its resources to generate earnings after mergers. The performance of OBC is also poor in terms of the solvency parameter, CAR, although the bank maintained the regulatory norm of 9 per cent. The CAR of the bank has declined from 17.26 per cent in the pre-merger period to 13.00 per cent in the post-merger period. Performance improvement of the bank is visible in terms of the efficiency parameters, OC/TA and profit per employee. The ratio of operating cost to total assets was declined from 2.27 per cent in pre-merger period to 1.88 per cent in post-merger period. Profit per employee also improved from 1.19 per cent in pre-merger period to 1.67 per cent in post-merger period. But the mean net interest margin has declined from 3.83 per cent in pre-merger period to 2.97 per cent in post-merger period. The rate of growth of total assets of the bank was also increased from 18.80 per cent in pre-merger period to 20.48 per cent in post-merger period. In all, for the Oriental Bank of Commerce, the performance is improved in terms of efficiency parameters, namely OC/TA, profit per employee and the growth rate of assets. But the performance of the bank deteriorated in terms of profitability parameters, capital adequacy ratio and net interest income.

In the lower part of panel B, results of the sample paired t-test of the Bank for all the performance indicators is reported. The t- values in case of two performance indicator variables namely, Spread and OC/TA are found to be significant at 5 per cent level in case of the OBC and insignificant in case of rest of the five performance measuring variables.

ity ratios, it is observed that the performance of the bank has improved in terms of ROA but ROE deteriorated after mergers. The mean ROA of the PNB has improved from 0.83 per cent to 1.10 per cent after mergers. But, the mean ROE has declined from 20.16 per cent in pre-merger period to 17.79 per cent in post-merger period. However, the CAR of the bank has improved from 10.99 per cent to 13.01 per cent after mergers. Efficiency of the bank has also improved after mergers as measured by the ratio of OC/TA, profit per employee, although there was a slight declined in the value of net interest margin (Spread) from 3.33 per cent in pre-merger period to 3.26 per cent in post-merger period. The growth rate of total assets of the bank showed a declining trend, from 16.53 per cent in pre-merger period to 13.44 per cent in post-merger period. In all, the performance of the Punjab National Bank has improved in terms of ROA, OC/TA, CAR and profit per employee parameters. This bank has experienced a deteriorating health on ROE, spread and growth rate of total assets after mergers.

The results of the sample paired t-statistic as reported in the panel C-1. In case of the PNB, two parameters namely OC/TA and Profit per employee are found to be significant at the 5 per cent level. And the rest of the parameters did not have any significant t-values.

4.5.4 <u>State Bank of India</u>

The performance of the State Bank of India in terms of the profitability parameters ROA and ROE has improved after mergers. The mean ROA in pre-merger period was 0.47 per cent and improved to 0.75 per cent in post-merger period. Also the mean ROE improved from 14.01 per cent in pre-merger period to 16.55 per cent in post-merger period. The CAR for the bank is more than the regulatory requirement of 9 per cent. It improved from 11.60 per cent in pre-merger period to 12.86 per cent in post-merger period. The performance of the bank also improved in terms of the efficiency ratio OC/TA, which declined from 2.90 per cent in pre-merger period to 2.56 per cent in post-merger period. Profit per employee of the bank also improved from 0.26 per cent in pre-merger period to 0.70 per cent in post-merger period. However, regarding the e performance of the bank is deteriorated after mergers. .05 per cent in pre-merger period has fallen to 2.79 per cent in post-merger period. However, the growth rate total assets of the bank grew faster after the mergers. The mean growth rate which was 13.90 per cent in pre-merger period has increased to 20.68 per cent in post-merger period.

The paired sample t-test for all the performance parameters of the SBI was not found significant in either of the parameters used for the performance analysis.

4.5.5 <u>Union Bank of India</u>

The performance of the bank in terms of the profitability measure ROE is improved from 14.34 per cent in pre-merger period to 16.06 per cent in post-merger period. However, the performance of the bank on ROE is deteriorated after mergers. The mean ROA of the bank has declined from 0.81 per cent in pre-merger period to 0.73 per cent in post-merger period. CAR of the bank improved slightly from 10.49 per cent in pre-merger period to 11.45 per cent in post-merger period. Efficiency parameters indicated that the performance of the bank has improved after mergers although the per cent of net interest margin has declined with mean spread in pre-merger period of 3.08 per cent and 3.02 in post-merger period. The ratio of operating cost to total assets of the bank has improved from 2.63 per cent to 2.26 per cent after mergers. And the efficiency parameter, profit per employee also improved from 0.67 per cent to 1.31 per cent in the post-merger period. Slight improvement in the growth rate of total assets was also observed for the bank after the mergers. The mean growth rate in the pre-merger period was 12.69 per cent and improved to 13.04 per cent in post-merger period. In all, the performance of the Union Bank of India is improved in terms of ROE, CAR, OC/TA, profit per employee and growth rate of total assets although the performance of the bank is deteriorated in terms of ROA and Spread.

None of the parameters are found significant for any of the performance indicator variables for the Union Bank of India.

nks' performance in pre and post- merger periods

ison of the mean values of all the performance indicators in pre-merger and post-merger period is carried out. The mean values of the performance indicator variables are analyzed for all the five banks in altogether and depicted in column (3) of **Table 4-5**.

Profitability indicators: Table 4-5 reports that the mean ROA increased from 0.87 per cent in pre-merger period to 0.92 per cent in post-merger period. Taking individual bank-wise analysis, deterioration of ROA was found for some of the banks. The mean ROA of all banks improved marginally in post-merger period. Similar trend is discernible for the profitability measure ROE, which improved from 16.81 per cent to 17.16 per cent. [**Table 4-5**]

Solvency indicator: The mean capital adequacy ratio (CAR) of all the banks altogether remained more or less the same after the mergers. The mean CAR was at 12.6 per cent in pre-merger period and after merger.

Efficiency indicators: The average performance of the banks has improved in terms of the efficiency parameter OC/TA. The mean OC/TA in the pre-merger period was 2.55 per cent and reduced to 2.22 per cent. The average spread ratio of all banks declined from 3.25 per cent to 3.00 per cent after mergers. However, profit per employee in banks altogether increased from 0.81 per cent to 1.64 per cent after mergers.

Growth indicator: On average, for all the merging banks, the average asset growth rate has improved from 14.41per cent to 15.71 per cent after mergers.

There is a marginal improvement in each of the growth parameters taken as a measure of performance after mergers. None of the growth parameter has shown significant results from the paired t-test performed.

4.7 Results of Paired t-test for five merging banks altogether:

In this section a sample paired t-test for all five merging banks together is analyzed. It is performed by taking the average of each of the performance indicator variables for pre-merger and post-merger periods. The descriptive statistics of t-test for all banks taken together in the two sub-periods is depicted in **Table 4-5** above. Two ratio of OC/TA and profit per employee are found to be significance. And no other performance parameters are found significant. The ratio of OC/TA is a measure of efficiency. The mean ratio of OC/TA for all the banks was declined in the post-merger period. The lower is the ratio, better is the performance of the firm. It means that the operating expenses like wages for employees, costs of raw materials and other expenses related to the production of its services declined in the post-merger period because of the economies of scale and synergy effect. Further the significant value of the profit per employee indicated that the productivity of the banks increased in the post-merger period. It means that banks gained in cost efficiency and labour productivity in the post-merger period.

In the overall assessment of the test statistic, out of the seven attributes of performance indicators of the banks, only two are found significant. Although mergers have some positive effect on the size and productivity of the firms, its impact on profitability, regulation and growth rates is not significant. As merger is a long-term strategy, its benefit could be realized in the long-run. Hence the null hypothesis that there is no significant improvement after merger is accepted. This indicated that pre-merger and post-merger performance is indifferent, although some of the parameter estimates are found to increase marginally in average values during the post-merger period. Perhaps, development and efficiency of the banks after mergers transaction is not quantifiable immediately like economies of scale and structural management of the new culture and environment.

4.7.1 <u>Reasons for insignificant Estimates</u>

<u>Profitability ratios:</u>

From the individual table for each merged banks, it is observed that the profitability measures ROA and ROE are improved for some of the merged banks in post-merger period. However, mean values of these ratios improved for all banks. The squeeze on profitability has been driven from expenditure side like increase in the interest costs of deposits, growing functional diversification of banks and rapid growth in the number of staff and accelerated promotions etc. An increase in profitability ratios of gh to offset the fall in ROA and ROE of other banks.

Solvency ratio:

All the merged banks fulfilled the regulatory requirement CRAR of 9 per cent level. This signified that the merged banks successfully managed to meet the increased requirement under the changed framework. In other words, banks can absorb the unexpected losses easily and their cost of funding is also reduced which ultimately improved the profitability of banks. But the average CRAR for the OBC is declined from 17.26 per cent in pre-merger period to 13.00 per cent in the post-merger period. The result of the paired sample test indicated that the estimated coefficient for the CRAR is not significant. Even though merged banks maintained the regulatory requirement, these banks need recapitalization by infusing more funds in order to cope with new environment of mergers.

The insignificant coefficients of the profitability parameters and solvency ratios impacted on the growth performance in terms of the asset growth rates of the firms. For example, the growth rate of the total assets is declined after mergers for one of the merging banks namely, PNB.

4.8 Main Points:

Based on the certain bank-specific financial and accounting ratios, pre-merger and post-merger performance of the merging firms is evaluated. A paired sample t-test is used to examine the performance of the firms in two different periods. Out of the seven performance indicators, only two indicators are found significant at the one per cent level. These are the ratio of operating cost to total assets and profit per employee. Whereas, the variables like solvency ratio measured by CAR, profitability ratios i.e. ROE, ROA, growth rates of total assets and the efficiency parameter, net interest income are not found significant. In other words, although mergers have some positive effect on the size and productivity of the firms, its impact on profitability, regulation and growth rate is not significant. As merger is a long-term strategy, its benefit could be realized in the long-run. Hence the null hypothesis that there is no significant improvement after merger is accepted. This indicated that pre-merger and post-merger performance is not st ratio and profit per employee, although some of the o increase marginally in average values during the post-merger period.