Pre and Post Merger Physical Performance Of Merged Banks In India- A Select Study

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INTRODUCTION

Over the past few decades, changes in regulation, technological advancement, competitive trends and disintermediation have all led to large scale banking sector consolidation all over the world. Since 1991, the process of Liberalization, Privatization and Globalization initiated by the Government has influenced the functioning and governance of the Indian banking sector.

The present Paper aims at empirically investigating the impact of M&As on Physical Performance of Merged Banks. Further, an attempt is made by selecting the physical parameters to find out the synergy of merged banks. First, summary of the research findings related to this area have been presented and the required strategies for empirical investigation were developed. Second, the methodology adopted for this chapter has been outlined. Third, the result of physical performance of selected merged banks is analyzed, and finally, the summary of the physical performance of the select merged banks is presented.

METHODOLOGY

It covers the sources of data, statistical tools, sample design etc.

SOURCES OF DATA

The study is based on secondary data. The secondary data is collected data from the annual reports of the banks included in the sample. It also collected from the RBI, SEBI, CMIE and UNCTAD reports; from various journals, magazines and news papers.

STATISTICAL TOOLS

The statistical tools like- Mean, Standard Deviation, Simple and Multiple Correlation, Regression, t-Test, One-Way and Two-Way ANOVA are used to study the Trends and Progress of M&As in India and Physical performance of the select merged banks before and after merger.

HYPOTHESES

There is no significant difference between pre and post merger physical performance of select merged banks and the merger of Private with Private and Private with Public Sector Banks contribute to the same performance.

For the analysis and easy understanding of the above, the hypotheses have been sub-divided into two parts. They are:

(i) There is no significant difference between pre and post merger physical performance of the selected merged banks.

(ii) There is no significant difference between merger of Private with Private and Private with Public Sector Banks.

SAMPLE DESIGN

For understanding the impact of mergers and acquisitions on the physical performance of the merged banks, six individual banks were selected for the study.

Table: 1:The List of Selected Merged Banks

Sl. No.	Name of Bank Merged	With whom Merged	Year of Merger	Category
1.	Benares State Bank Ltd.	Bank of Baroda	2001	Pr-P

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2.	Nedungadi Bank Ltd.	Punjab National Bank	2003	Pr-P
3.	Global Trust Bank Ltd.	Oriental Bank of Comm.	2004	Pr-P
4.	Times Bank Ltd.	HDFC Ltd.	2000	Pr-Pr
5.	Madura Bank Ltd.	ICICI Bank	2001	Pr-Pr
6.	Bank of Punjab	Centurion Bank of Punj.	2005	Pr-Pr

Note: P = Public Sector, Pr = Private Sector.
Source: RBI Newsletter / IBA Bulletin.

OBJECTIVES

The objective of this paper is to assess the success of M&As' strategy in banking sector by analyzing the physical performance of the selected merged banks in terms of changes in growth of Deposits, Advances, Business, Number of Branches and Number of Employees. These physical parameters are considered as independent variables and profit is considered a dependent variable.

ANALYSIS OF PHYSICAL PERFORMANCE OF MERGED BANKS

Physical performance of the selected merged banks is analyzed and interpreted based on the data presented in the Tables. The results and analysis are presented and discussed.

ANALYSIS OF PHYSICAL PERFORMANCE OF BOB

Bank of Baroda and Banaras State Bank Ltd. were merged on June 20, 2002. The physical performance of the bank was examined by studying the data five years before the merger and six years after the merger. Pre and post average deposits were Rs. 47,479 crores and 83,520.50 crores (Table-3) respectively. The average growth of the deposits of the bank is found to be 75.91 per cent after the merger. The mean advances disbursed by the bank to the various parties before and after the merger is Rs. 21,225.20 crore and Rs. 48,590 crores (Table-3) respectively. The mean percentage increase in advances was recorded at 128.93 per cent after the merger. The average number of branches observed before and after the merger are 2,684 and 2,736 respectively. The mean percentage increase in number of branches was 1.93 per cent. The average number of employees before and after the merger is recorded at 47,597 and 39,320 (Table-3) respectively. There is a decrease in number of employees by 8,277. Business of the bank before and after the merger was Rs. 71008.80 crores and Rs. 132106.83 crores (Table-3) respectively. After the merger, there has been a tremendous growth in the business of the bank with an average increase of 86.04 per cent (Table-3).

Based on the above five physical indicators, the bank has performed better after the merger in the form of increased deposits, advances, business, less growth in number of branches and decreased number of employees. This also indicates that the productivity and efficiency of the bank increased after the merger. We also made an attempt to analyze the direction of change and relationship among the selected physical parameters of the bank. For this analysis, we worked out the multiple correlation and multiple regression, t-test and analysis of variance among the selected physical parameters of the bank over the study period. There is a positive correlation (see Table-5) of 0.922 with R square 0.851. The change in profit of the bank is examined by these five parameters up to 85.10 percent. T-test is conducted to test for equality of means before and after the merger of the bank's selected physical indicators. From the Table-3, we can say that there is a significant difference between means of pre and post merger deposits, advances, business, number of branches and number of employees. We also examined the analysis of variance by selecting independent variables (deposits, advances, business, number of branches and number of employees) and dependent variable profit. This test is also significant at 5 per cent level of significance (see Table-6).

Table-2: Pre & Post Merger Physical Performance of BOB and BSB

Years	Deposits (Rs. Cr.)	Advances (Rs. Cr.)	Business (Rs. Cr.)	No. of Branches	No. of Employees	Profit (Rs. Cr.)
1997	32759	15363	69131	2596	47074	278
1998	45298	18628	88919	2627	47325	428
1999	52059	19933	75874	2666	47527	421
2000	52177	24587	107606	2757	48345	503
2001	55102	27615	117088	2774	47712	275
2002	61804	33663	95467	2679	38899	546
2003	66441	35348	101778	2753	40313	773

2004	72967	35601	108545	2730	39803	967
2005	81333	43400	124732	2738	39529	676
2006	93662	59912	153581	2743	38774	776
2007	124916	83621	208538	2772	38604	1158

Note: Pre-merger Period=1997-2001.
Source: Various issues of CMIE, RBI and Annual Bank Reports.

Table-3: Group Statistics of BOB

Indicators	Merger	N	Mean	SD	SE Mean
Deposits (Rs. Cr.)	Post	6	83520.50	23220.31	9479.65
	Pre	5	47479.00	8980.44	4016.17
Advances (Rs. Cr.)	Post	6	48590.83	19744.24	8060.55
	Pre	5	21225.20	4871.14	2178.44
Business (Rs. Cr.)	Post	6	132106.83	42836.26	17487.83
	Pre	5	71008.80	15119.72	6761.74
No. of Branches	Post	6	2735.83	31.38	12.81
	Pre	5	2684.00	78.65	35.17
No. of Employees	Post	6	39320.33	670.97	273.92
	Pre	5	47596.60	480.92	215.07
Profit (Rs. Cr.)	Post	6	816.00	217.12	88.64
	Pre	5	381.00	100.67	45.02

Source: Compiled from Table-2.

Table-4: Independent Sample Test of BOB

Indicators	Assumption	t	df	Sig. (2-tailed)
Deposits (Rs. Cr.)	Equal Variances	3.250	9	0.010
Advances (Rs. Cr.)	Equal Variances	2.999	9	0.015
Business (Rs. Cr.)	Equal Variances	3.014	9	0.015
No. of Branches	Equal Variances	1.491	9	0.170
No. of Employees	Equal Variances	-23.01	9	0.000
Profit (Rs. Cr.)	Equal Variances	4.100	9	0.003

Source: Compiled from Table-3

Table-5: Regression Analysis of BOB

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
BOB	0.922*	0.851	0.702	153.695

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees.
Source: Compiled from Table-2.

Table-6: ANOVA* of BOB

Bank		Sum of Squares	df	Mean Square	F	Sig.
BOB	Regression	674209.780	4	168552.445	8.56	0.023**
	Residual	118110.402	6	19685.067		
	Total	724492.727	10			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. **= Dependent Variable: Profit.
Source: Compiled from Table2.

ANALYSIS OF PHYSICAL PERFORMANCE OF PNB

Punjab National Bank and Nedungadi Bank Ltd. were merged on February1, 2003. The physical performance of the bank is examined on the basis of the analysis of the available data of five years before and after the merger. Pre and post average deposits are Rs. 50,096.20 crores and 105288.20 crores (Table-8) respectively. After the merger, the average growth observed in deposits of the bank is 110 per cent. The mean advances disbursed by the bank before and after merger is Rs. 24,016.60 crores and Rs. 63,817.80 crores (Table-8) respectively. The mean percentage increase in advances was recorded at 166 per cent after the merger. The average number of branches observed before and after merger are 4,224 and 4.230 (Table-8) respectively. The mean percentage increase in number of branches was 0.14 per cent. The average number of employees before and after the merger is recorded at 64,361 and 58,302 (Table-8) respectively. There is a decrease in mean number of employees with 6,059. Business of the bank before and after the merger was Rs. 74,068.20 crores and Rs. 1, 69,107.80 crores (Table-8) respectively. A significant growth was observed in the business of the bank with an average increase of 128.31 per cent (Table-8).

Based on the above five physical performance indicators, it has been observed that the bank has improved after the merger in the form of increased deposits, advances, business, less growth in number of branches and decreased number of employees. This indicates that the productivity and efficiency of the bank increased after the merger. We examined the direction of change and relationship among the selected physical parameters of the bank. For this analysis, we worked out the multiple correlation and multiple regression, t-test and analysis of variance among the selected physical parameters of the bank over the study period. There is a positive correlation (see table-9) of 0.971 with R square 0.943. The bank's R square is very high and this explains that the change in profit is explained by these physical parameters that are up to 94.3 percent. T-test is conducted to test for equality of means before and after merger of the bank's selected indicators. Hence, we can conclude that there is a significant difference between the pre and post merger deposits, business and number of employees and there is no significant difference between means of pre and post merger advances and number of branches. We examined the analysis of variance by selecting independent variables (deposits, advances, number of branches and number of employees) and dependent variable profit. This test is also not significant at 5 percent level of significance (see table-11).

Table-7: Pre and Post Merger Physical Performance of PNB and NB

Years	Deposits (Rs. Cr.)	Business (Rs. Cr.)	Advances (Rs. Cr.)	No. of Branches	No. of Employees	Profit (Rs. Cr.)
1998	36009	88290	15172	4324	68250	477
1999	41960	109892	18203	4347	67370	389
2000	49071	119762	22766	4403	66472	664
2001	57880	147322	28838	4015	60091	512
2002	65561	153543	35104	4030	59620	600
2003	75814	116064	40228	4037	58981	589
2004	87916	135139	47225	4022	58839	1343
2005	103167	163580	60413	4043	58329	1411
2006	119685	194313	74627	4510	58047	1443
2007	139859	236443	96596	4540	57316	1539

Note: Pre-merger Period=1998-2002. Business includes total advances and deposits.
Source: Various issues of CMIE, RBI and Annual Bank Reports.

Table-8: Group Statistics of PNB

Indicators	Merger	N	Mean	SD	SE Mean
Deposits (Rs. Cr.)	Post	5	105288.20	25384.19	11352.16
	Pre	5	50096.20	11889.55	5317.17
Advances (Rs. Cr.)	Post	5	63817.80	22553.50	10086.23
	Pre	5	24016.60	8058.62	3603.92
Business (Rs. Cr.)	Post	5	169107.80	47873.30	21409.59
	Pre	5	74068.20	19901.11	8900.05
No. of Branches	Post	5	4230.40	269.25	120.41
	Pre	5	4223.8	186.07	83.213
No. of Employees	Post	5	58302.40	668.46	298.94
	Pre	5	64360.60	4163.67	1862.05
Profit (Rs. Cr.)	Post	5	1265.00	384.43	171.92
	Pre	5	528.40	107.07	47.884

Source: Compiled from Table-7.

Table-9: Independent Sample Test of PNB

Indicators	Assumption	t	df	Sig. (2-tailed)
Deposits (Rs. Cr.)	Equal Variances	4.403	8	0.002
Advances (Rs. Cr.)	Equal Variances	3.716	8	0.006
Business (Rs. Cr.)	Equal Variances	4.099	8	0.003
No. of Branches	Equal Variances	0.045	8	0.965
No. of Employees	Equal Variances	-3.212	8	0.012
Profit (Rs. Cr.)	Equal Variances	40127	8	0.003

Source: Compiled from Table-8.

Table-10: Regression Analysis of PNB

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
PNB	0.971*	0.943	0.897	530.811

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees.
Source: Compiled from Table-8.

Table-11: ANOVAof PNB**

Bank		Sum of Squares	df	Mean Square	F	Sig.
PNB	Regression	1879721.571	4	469930.393	20.662	0.003*
	Residual	113720.529	5	22744.106		
	Total	1993442.100	9			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. **= Dependent Variable: Profit.
Source: Compiled from Table-8.

ANALYSIS OF PHYSICAL PERFORMANCE OF OBC

Oriental Bank of Commerce (OBC) and Global Trust Bank Ltd (GTB) were merged on August 14, 2004. The physical performance of the bank is examined by selecting the data that was available five years before the merger and four years after the merger. Pre and post average deposits were Rs. 30,654.20 crores and 49,429.25 crores respectively. After the merger, the average growth observed in the deposits of the bank is 61.25 per cent. The mean advances disbursed by the bank to the various parties before and after the merger is Rs. 14,240 crore and Rs.30, 673.75 crores respectively. The mean percentage increase in advances was recorded at 115 per cent after the merger. The average number of branches observed before and after the merger are 1024 and 1141 respectively. The mean percentage increase in number of branches was 11.43 per cent. The average number of employees before and after the merger is recorded at 14,985 and 14,464 respectively. There is a decrease in number of employees by 521 employees. Business of the bank before and after merger was Rs. 43,662.40 crores and Rs. 80,100 crores respectively. Post merger, the growth in the business of the bank is an average increase of 83.45 per cent.

Based on the selected five physical performance indicators, the bank is in satisfactory position after the merger in the form of increased deposits, advances, and business, less growth in number of branches and decreased number of employees. This indicates that the productivity and efficiency of the bank increased after the merger. We attempted to analyze the direction of change and relationship among the selected physical parameters of the bank. For this analysis, we worked out the multiple correlation and multiple regression, t-test and analysis of variance among the selected physical parameters of the bank over the study period. There is a positive correlation (see table-15) of 0.930 with R square 0.866. T-test is conducted to test for equality of means before and after the merger of the bank's selected indicators. From the Table-13, we can say that there is a significant difference between means of pre and post merger deposits, advances, and business, but there is no significant difference between means of pre and post merger, number of branches and number of employees. We examined the analysis of variance by selecting independent variables (deposits, advances, business, number of branches and number of employees) and dependent variable that is profit. This test is also significant at 5 percent level of significance respectively (see table-16).

Table-12: Pre and Post Merger Physical Performance of OBC and GTB

Years	Deposits (Rs. Cr.)	Advances (Rs. Cr.)	Business (Rs. Cr.)	No. of Branches	No. of Employees	Profit (Rs. Cr.)
1999	20902	9074	120327	962	15195	301
2000	28294	11948	151851	989	15358	388
2001	32414	14540	182101	1011	14761	283
2002	34931	17113	147332	1067	14736	372
2003	36730	18525	153794	1092	14875	430
2004	35674	19681	55356	1013	13602	686
2005	47850	25299	73145	1130	14563	972
2006	50197	33577	83774	1148	14962	803
2007	63996	44138	108128	1273	14730	884

Note: Pre-merger Period=1997-2001. Business includes total advances and deposits.
Source: Various issues of CMIE, RBI and Annual Bank Reports.

Table-13: Group Statistics of OBC

Indicators	Merger	N	Mean	SD	SE Mean
Deposits (Rs. Cr.)	Post	4	49429.25	11611.50	5805.75
	Pre	5	30654.20	6304.35	2819.39
Advances (Rs. Cr.)	Post	4	30673.75	10637.09	5318.55
	Pre	5	14240.00	3829.04	1712.40
Business (Rs. Cr.)	Post	4	80100.75	22058.29	11029.15
	Pre	5	43662.40	12471.77	5577.55
No. of Branches	Post	4	1141.00	106.42	53.21
	Pre	5	1024.20	54.11	24.20
No. of Employees	Post	4	14464.25	597.66	298.83
	Pre	5	14985.00	277.27	123.99
Profit (Rs. Cr.)	Post	4	836.25	121.64	60.82
	Pre	5	354.80	61.447	27.480

Source: Compiled from Table-12.

Table-14: Independent Sample Test of OBC

Indicators	Assumption	t	df	Sig. (2-tailed)
Deposits (Rs. Cr.)	Equal Variances	3.120	7	0.017
Advances (Rs. Cr.)	Equal Variances	3.249	7	0.014
Business (Rs. Cr.)	Equal Variances	3.150	7	0.003
No. of Branches	Equal Variances	2.155	7	0.068
No. of Employees	Equal Variances	-1.749	7	0.124
Profit (Rs. Cr.)	Equal Variances	7.785	7	0.000

Source: Compiled from Table-12.

Table-15: Regression Analysis of OBC

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
OBC	0.930*	0..866	0.641	160.477

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. Source: Compiled from Table-12.

Table-16: ANOVA**of OBC

Bank		Sum of Squares	df	Mean Square	F	Sig.
OBC	Regression	497330.928	4	99466.186	3.862	0.148*
	Residual	77258.628	4	25752.876		
	Total	574589.556	8			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. **= Dependent Variable: Profit. Source: Compiled from Table-12.

ANALYSIS OF PHYSICAL PERFORMANCE OF HDFC BANK

HDFC Bank and Times Bank Ltd. were merged on February 26, 2000. The physical performance of the bank was examined by taking the data that is available four years before the merger and eight years after the merger. Pre and post average deposits are Rs.3, 492.18 crores and 31,371.75 crores respectively. The average growth observed in the deposits of the bank is 798.34 per cent after the post merger. The mean advances disbursed by the bank to the various parties before and after the merger is Rs. 1,338.10 crore and Rs.18, 998.13 crores respectively. The mean percentage increase in advances was recorded at 1319.78 per cent after the merger. The average number of branches observed before and after merger are 52 and 330 respectively. The mean percentage increase in number of branches was 534.61 per cent. The average number of employees before and after the merger is recorded at 1,030 and 8,042 respectively. There is an increase in the number of employees with 7,012. Business of the bank before and after merger was Rs. 4831.25 crores and Rs. 50369.25 crores respectively. The post merger average growth in the business of the bank is 942.57 per cent.

Based on the selected five physical indicators, after the merger, the bank is in a good position in the form of increased deposits, advances, business, number of branches and number of employees. This indicates that the productivity and efficiency of the bank was increased after the merger. We examined the direction of change and relationship among the selected physical parameters of the bank. For this analysis, we worked out the multiple correlation and multiple regression, t-test and analysis of variance among the selected physical parameters of the bank over the study period. There is a high positive correlation (see Table-20) of 1.000 with R square 0.999. We can say that any change in profit is almost explained by the selected five physical parameters of the bank. T-test is conducted to test for equality of means before and after merger of a bank's selected indicators. From the Table-19, we can say that there is a significant difference between means of pre and post merger deposits, business and number of branches. But there is no significant difference between means of pre and post merger advances and number of employees. We also examined the analysis of variance by selecting independent variables (deposits, advances, business, number of branches and number of employees) and dependent variable profit. This test is significant at 5 percent level of significance (see Table-21).

Table-17: Pre and Post Merger Physical Performance of HDFC Bank and TB

Years	Deposits (Rs. Cr.)	Advances (Rs. Cr.)	Business (Rs. Cr.)	No. of Branches	No. of Employees	Profit (Rs. Cr.)	
1996	1042	577	3414	16	440	26	
1997	2595	949	7122	37	850	50	
1998	4406	1538	12301	62	1154	87	
1999	5926	2288	17212	92	1676	109	
2000	8428	3462	11890	111	1992	120	
2001	11658	4637	16295	131	2751	210	
2002	17654	6814	24467	171	3742	297	
2003	22376	11755	34130	231	4791	388	
2004	30409	17745	48154	312	5673	509	
2005	36354	25566	61919	467	9030	666	
2006	55797	35061	90859	535	14878	1042	
2007	68298	46945	115240	684	21477	1289	

Note: Pre-merger Period=1996-1999. Business includes total advances and deposits.
Source: Various issues of CMIE, RBI and Annual Bank Reports.

Table-19: Independent Sample Test of HDFC Bank

Indicators	Assumption	t	df	Sig. (2-tailed)
Deposits (Rs. Cr.)	Equal Variances	2.552	10	0.029
Advances (Rs. Cr.)	Equal Variances	2.190	10	0.053
Business (Rs. Cr.)	Equal Variances	2.402	10	0.037
No. of Branches	Equal Variances	2.574	10	0.028
No. of Employees	Equal Variances	1.998	10	0.074
Profit (Rs. Cr.)	Equal Variances	2.347	10	0.041

Source: Compiled from Table-17.

Table-18: Group Statistics of HDFC Bank

Indicators	Merger	N	Mean	SD	SE Mean
Deposits (Rs. Cr.)	Post	8	31371.75	21280.57	7523.82
	Pre	4	3492.18	2126.67	1063.34
Advances (Rs. Cr.)	Post	8	18998.13	15731.13	5561.79
	Pre	4	1338.10	746.62	373.82
Business (Rs. Cr.)	Post	8	50369.25	36959.99	13067.33
	Pre	4	4831.25	2867.69	1433.84
No. of Branches	Post	8	330.25	210.13	74.29
	Pre	4	51.75	32.77	16.38
No. of Employees	Post	8	8041.75	6839.74	2418.21
	Pre	4	1030.00	520.64	260.32
Profit (Rs. Cr.)	Post	8	565.13	412.69	145.91
	Pre	4	68.00	37.10	18.55

Source: Compiled from Table-17.

Table-20: Regression Analysis of HDFC Bank

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
HDFC	1.000*	0.999	0.999	15.209

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees.
Source: Compiled from Table-17

Table-21: ANOVAof HDFC Bank**

Bank		Sum of Squares	df	Mean Square	F	Sig.
HDFC	Regression	1853777.673	4	463444.418	2003.473	0.000*
	Residual	1619.243	7	231.320		
	Total	1855396.917	11			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees.
**= Dependent Variable: Profit. Source: Compiled from Table-17.

ANALYSIS OF PHYSICAL PERFORMANCE OF ICICI BANK

ICICI Bank and Bank of Madura were merged on March 10, 2001. The physical performance of the bank was examined by taking the five years' data before the merger and seven years after the merger. Pre and post average deposits are Rs.6, 708 crores and 85,736.14 crores respectively. After the merger, the average growth observed in the deposits of the bank is 1178.12 per cent. The mean advances disbursed by the bank to the various parties before and after the merger is Rs. 2,713.40 crore and Rs.85, 434.14 crores respectively. The mean percentage increase in advances was recorded at 3048.6 per cent after the merger. The average number of branches observed before and after the merger are 362 and 492 respectively. The mean percentage increase in number of branches was 35.91 per cent. The average number of employees before and after the merger is recorded at 3,303 and 16,158 respectively. There is an increase in number of employees with 12,855. Business of the bank before and after the merger was Rs. 9,421.60 crores and Rs. 1, 71,172.29 crores respectively. The post merger growth in the business of the bank is an average increase of 1716.81 per cent.

According to the selected five physical performance indicators, the bank's performance after the merger in the form of deposits, advances, business, number of branches and number of employees increased. This indicates that the productivity and efficiency of the bank increased after the merger. We examined the direction of change and relationship among the selected physical parameters of the bank. For this analysis, we worked out the multiple correlation and multiple regression, t-test and analysis of variance among the selected physical parameters of the bank over the study period. There is a high positive correlation (see Table-25) of 0.975 with R square 0.951. T-test was conducted to test for equality of means before and after the merger of the bank's selected indicators. From the Table-24, we can say that there is a significant difference between means of pre and post merger deposits, advances, business, number of employees and number of branches. We examined the analysis of variance by selecting independent variables (deposits, advances, business, number of branches and number of employees) and dependent variable profit. This test is significant at 5 percent level of significance respectively (see table-26).

Table-22: Pre and Post Merger Physical Performance of ICICI Bank and BOM

Years	Deposits (Rs. Cr.)	Advances (Rs. Cr.)	Business (Rs. Cr.)	No. of Branches	No. of Employees	Profit (Rs. Cr.)
1996	2276	1648	36501	270	2887	28
1997	3279	1489	31397	289	3021	66
1998	5402	2072	39342	309	3166	50
1999	9086	3300	47274	289	3472	93
2000	13497	5058	67405	365	3967	151
2001	16378	7031	23409	355	4491	161
2002	32085	46204	78298	359	7700	385
2003	48169	52474	100643	386	10600	1208
2004	68109	61309	129418	413	13609	1631
2005	99819	88992	188810	562	18000	2653
2006	105083	146163	251249	614	25384	2536
2007	230510	195866	426379	755	33321	2997

Note: Pre-merger Period=1996-2000. Business includes total advances and deposits.
Source: Various issues of CMIE, RBI and Annual Bank Reports.

Table-24: Independent Sample Test of ICICI Bank

Indicators	Assumption	t	df	Sig. (2-tailed)
Deposits (Rs. Cr.)	Equal Variances	2.423	10	0.036
Advances (Rs. Cr.)	Equal Variances	2.811	10	0.018
Business (Rs. Cr.)	Equal Variances	2.644	10	0.025
No. of Branches	Equal Variances	2.487	10	0.032
No. of Employees	Equal Variances	2.769	10	0.020
Profit (Rs. Cr.)	Equal Variances	3.081	10	0.012

Source: Compiled from Table-22.

Table-23: Group Statistics of ICICI Bank

Indicators	Merger	N	Mean	SD	SE Mean
Deposits (Rs. Cr.)	Post	7	85736.14	71813.53	27142.96
	Pre	5	6708.00	4605.75	2059.75
Advances (Rs. Cr.)	Post	7	85434.14	64872.05	24519.33
	Pre	5	2713.40	1490.54	666.59
Business (Rs. Cr.)	Post	7	171172.29	134803.10	50950.78
	Pre	5	9421.60	6079.87	2719.00
No. of Branches	Post	7	492.00	154.32	58.33
	Pre	5	314.00	38.126	17.05
No. of Employees	Post	7	16157.86	10231.69	3867.22
	Pre	5	3302.60	430.35	192.46
Profit (Rs. Cr.)	Post	7	1653.00	1126.83	425.90
	Pre	5	77.60	47.39	21.19

Source: Compiled from Table-22.

Table-25: Regression Analysis of ICICI Bank

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
ICICI	0.975*	0.951	0.922	324.003

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees.
Source: Compiled from Table-22.

Table-26: ANOVA**of ICICI Bank

Bank		Sum of Squares	df	Mean Square	F	Sig.
ICICI	Regression	14131388.692	4	3532847.173	33.653	0.000*
	Residual	734846.225	7	104978.032		
	Total	14866234.917	11			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. **= Dependent Variable: Profit.
Source: Compiled from Table-22.

ANALYSIS OF PHYSICAL PERFORMANCE OF CBOP

Centurion Bank and Bank of Punjab were merged on October 1, 2005. The physical performance of this bank was examined by taking five years' data before the merger and two years' data after the merger. As per Table-28, pre and post average deposits are Rs7, 125.8 crores and 12,132 crores respectively. The average growth observed in the deposits of the bank is 70.25 per cent after the merger. The mean advances disbursed by the bank to the various parties before and after the merger is Rs. 3,568.4 crore and Rs.8, 877 crores (Table-28) respectively. The mean percentage increase in advances was recorded at 148.77 per cent after the merger. The average number of branches observed before and after the merger are 170 and 260 respectively. The mean percentage increase in number of branches was 52.9 per cent. The average number of employees before and after the merger is recorded at 2,259 and 5.152 respectively. There was an increase in the number of employees by 2,893. Business of the bank before and after merger was Rs. 10,512 crores and Rs. 21,001 crores respectively. The post merger growth of the business of the bank is an average increase of 99.78 per cent.

The selected five physical performance indicators of the bank are in a satisfactory position after the merger in the form of increased deposits, advances, business, number of branches and number of employees. This also indicates that the productivity and efficiency of the bank increased after the merger. We attempted to know the direction of change and relationship among the selected physical parameters of the bank. For this analysis, we worked out the multiple correlation and multiple regression, t-test and analysis of variance among the selected physical parameters of the bank over the study period. There is a high positive correlation (see Table-30) of 0.922 with R square 0.984. T-test is conducted to test for equality of means before and after merger of the bank's selected indicators. From the Table-29, we can say that there is a significant difference between means of pre and post merger deposits, advances, business and number of branches but there is no significant difference between means of pre and post merger number of employees. We examined the analysis of variance by selecting independent variables (deposits, advances, business, number of branches and number of employees) and dependent variable profit. This test is significant at 5 percent level of significance respectively (see Table-31).

Table-27: Pre and Post Merger Physical Performance of CB and BP

Years	Deposits (Rs. Cr.)	Advances (Rs. Cr.)	Business (Rs. Cr.)	No. of Branches	No. of Employees	Profit (Rs. Cr.)
2001	7312	3380	22008	116	1503	92
2002	6889	3174	21438	149	1906	48
2003	6425	3004	19790	167	2080	53
2004	7166	3784	23351	184	2542	54
2005	7837	4500	25016	235	3263	-30
2006	9400	6533	15933	241	4471	89
2007	14864	11221	261	279	5832	117

Note: Pre-merger Period=2001-2005. Business includes total advances and deposits.
Source: Various issues of CMIE, RBI and Annual Bank Reports.

Table-29: Independent Sample Test of CBOP

Indicators	Assumption	t	df	Sig. (2-tailed)
Deposits (Rs. Cr.)	Equal Variances	3.343	5	0.020
Advances (Rs. Cr.)	Equal Variances	4.027	5	0.010
Business (Rs. Cr.)	Equal Variances	3.751	5	0.013
No. of Branches	Equal Variances	2.602	5	0.048
No. of Employees	Equal Variances	4.668	5	0.005
Profit (Rs. Cr.)	Equal Variances	1.741	5	0.142

Source: Compiled from Table-27.

Table-28 : Group Statistics of CBOP

Indicators	Merger	N	Mean	SD	SE Mean
Deposits (Rs. Cr.)	Post	2	12132.00	3863.63	2732.00
	Pre	5	7125.80	521.85	233.376
Advances (Rs. Cr.)	Post	2	8877.00	3314.927	2344.00
	Pre	5	3568.40	596.65	266.83
Business (Rs. Cr.)	Post	2	21001.00	7167.23	5068.00
	Pre	5	10512.40	1059.45	473.803
No. of Branches	Post	2	260.00	26.87	19.00
	Pre	5	170.20	44.12	19.73
No. of Employees	Post	2	5151.50	962.37	680.50
	Pre	5	2258.80	673.85	301.35
Profit (Rs. Cr.)	Post	2	103.00	19.79	14.00
	Pre	5	43.40	44.65	19.969

Source: Compiled from Table-27.

Table-30 : Regression Analysis of CBOP

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
CBOP	0.992*	0.984	0.953	10.294

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. Source: Compiled from Table-27.

Table-31 : ANOVAof CBOP**

Bank		Sum of Squares	df	Mean Square	F	Sig.
CBOP	Regression	13229.778	4	3307.445	31.212	0.031*
	Residual	211.936	2	105.968		
	Total	13441.714	6			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. **= Dependent Variable: Profit. Source: Compiled from Table-27.

ANALYSIS OF PHYSICAL PERFORMANCE OF PUBLIC SECTOR AND PRIVATE SECTOR BANKS

According to the second hypothesis of this study, we have to compare the physical performance of the private and public sector merged banks. This is studied by selecting the analysis of variance and multiple correlation of the two merged private and public sector banks. As per the analysis of variance, the two sectors are highly significant. This means that the performance of the both private and public sector banks improved after the merger. This is compared by using the correlation analysis (Table-32) that indicate that the private sector banks merged with private sector banks (0.958) and the private sector banks merged with public sector banks (0.888). Finally, we conclude that in both the sectors, merged banks gave a good physical performance after the merger.

Table-32: Regression Analysis of The Selected Public Sector and Private Sector Merged Banks

Bank	R (Multiple Correlation)	R Square	Adjusted R Square	Standard Error of the Estimate
Public Sector	0.888*	0.789	0.745	186.876
Private Sector	0.958*	0.917	0.904	259.047

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. Source: Compiled from Table 2, 7, 12, 17, 22 and 27.

Table-33: ANOVA* of The Selected Public Sector and Private Sector Merged Banks

Bank		Sum of Squares	df	Mean Square	F	Sig.
Public Sector	Regression	3137135.466	5	627427.093	17.966	0.000**
	Residual	838145.901	24	34922.746		
	Total	3975281.367	29			
Private Sector	Regression	19332937.050	4	4833234.262	72.025	0.000**
	Residual	1744737.918	26	67105.305		
	Total	21077674.968	30			

*= Predictors (Constant), Deposits, Advances, No. of Branches and No. of Employees. **= Dependent Variable: Profit. Source: Compiled from Table 2, 7, 12, 17, 22 and 27.

CONCLUSIONS

The important conclusions identified from this paper are:

1. Bank of Baroda, Punjab National Bank and Oriental Bank of Commerce have performed better after the merger in the form of increased deposits, advances, business, decreased number of branches, decreased number of employees after the merger. This indicates that the productivity and efficiency of the bank increased after the merger.

2. Physical indicators of HDFC Bank, ICICI Bank and Centurion Bank of Punjab after the merger increased in the form of increased deposits, advances, business, number of branches and number of employees. Hence, we conclude that the productivity and efficiency of the bank increased after the merger.

3. The Private and Public Sectors' physical performance improved after the merger. But the correlation between private with private sector merged banks is higher than the private with public sector merged banks. Hence, we can draw a conclusion that the merger of private sector banks with private sector banks is highly correlated in physical performance.

BIBLIOGRAPHY

1) B.K. Bhoi "Mergers and Acquisitions: An Indian Experience" **RBI, Occasional Papers**-2000.
2) B. Rajesh Kumar and Prabina Rajib (2007): "Characteristics of Merging Firms in India: An Empirical Examination", Vikalpa, January - March 2007.
3) Centre for Monitoring Indian Economy (CMIE) Reports.
4) Dilip Kumar Chanda "Bank Mergers in India: A Critical Analysis" **IASSI Quarterly**, Vol.23, No.4, 2005. pp107-123.
5) Dhawal Mehta & Sunil Samanta (1997): "Mergers and Acquisitions: Nature and Significance", Vikalpa the Journal for Decision Makers, Vol.22, No.4 October-December 1997, pp. 31-38.
6) Finance Ministry: www.finmin.nic.in
7) K. Mohan "Mergers and Acquisitions for Consolidation in Indian Banking Industry: The Success Mantra" **Management Trends**, Oct-March, 2006, Vol. 3, No.1, pp30-40.
8) M.T. Raju and Deepthi (2004): "Market for Corporate Control and Takeover Regulations: Trends and Analysis", SEBI Working Paper No. 10, September, 2004.
9) Mallikarjunappa and Panduranga Nayak (2007): "Why Do Mergers and Acquisitions Quite Often Fail?" AIMS International Journal of Management, January, 2007.
10) Rajan Handa (2007): "Why Mergers and Acquisitions Fail and How To Prevent It", The Chartered Account, May 2007.
11) RBI: www.rbi.org.in
12) Sujit Kumar Ray "Consolidation & Scale Economies in the Indian Banking Sector" **PNB Monthly Review**, February 2007. pp18-25.
13) SEBI: www.sebi.org.in
14) V Gangadhar and G Naresh Reddy "Mergers and Acquisitions in the Banking Sector an Empirical Analysis" **ICFAI Reader**, March, 2007.
15) www.mergersindia.com.