Evaluation of Physical Performance of Merged Banks: A Study of Selected Merged Public Sector Banks in India

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Abstract

The study attempts to examine the impact of merger on physical performance of selected public sector banks India. For this purpose, the researcher selected physical parameters like Deposits, Advances, Business, Number of Branches and Number of Employees and Profit. Total three merged banks were selected for the study. The required data have been collected from CMIE data base, Moneycontrol.com, Capitaline data, annual reports of all select banks, and published articles, journals and websites. To examine the merger impact, a period five years before the merger and five years after the merger is considered. T-test is conducted to test for equality of means before and after the merger of bank's selected physical indicators. The study reveals that, the physical performance of all the banks is improved after the merger in terms of increase in advances, deposits, business, number of branches and number of employees. Hence it is concluded that there is a significance difference between physical performance of merged banks pre and post-merger period. Further the researcher made an attempt know the direction of change and relationship among physical parameters of the banks. For this purpose the researcher used ANOVA and Multiple correlations methods. The shows that, all select banks are positively correlated in physical performance.

Keywords: Mergers, Physical performance, ANOVA, Multiple Correlation.

Introduction

The banking systems of many emerging economies are fragmented in terms of the number and size of the institutions, ownership patterns, competitiveness, use of modern technology and other structural features. Most of Asian banks are family owned whereas in Latin America and Central Europe, banks were historically owned by the government. Some commercial banks in emerging economies are at cutting edge of technology and financial innovation but many others are struggling with management of credit liquidity risks. Banking crises in many countries have weakened the financial systems in this situation, the natural alternative which emerged was to improve the structure and efficiency of banking industry through consolidation and mergers, among other financial sectors reforms (M Jayadev and Rudra Sensarma,).

The Indian banking sector has not remained insulated from the global forces driving Mergers and Acquisitions across the countries. Mergers and Acquisitions activity in the Indian banking sector is not something new, as it has taken place even before the independence. However, economic reforms introduced in the early 1990s brought out a comprehensive change in the business strategy of banks, whereby they resorted to Mergers and Acquisitions to enhance size and efficiency to gain competitive strength. The concept of Mergers and Acquisitions is very much popular concept after 1990s of LPG (Liberalization, Privatization and Globalization) era.

The basic objectives of this paper is to assess the success of Mergers strategy in banking sectors by analyzing physical performance of selected merged banks in terms of changes in growth 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. It analyses how the Mergers helped the selected banks to achieve such physical performance.

Review of Literature

Dawn (2012) in a paper "Merger and acquisitions in Indian banks after liberalization: An analysis" investigates the performance of merged banks in terms of its growth of total assets, profits, revenue, deposits, and number of employees. The performance of merged banks is compared taking four years of prior-merger and four years of post-merger. The study findings indicate that the post-merger periods were successful and saw a significant increase in total assets, profits, revenue, deposits, and in the number of employees of the acquiring firms of the banking industry in India. Burki and Niazi (2006) studied the impact of financial reforms on banking efficiency of state-owned, private, and foreign banks in Pakistan. They employed DEA to measure efficiency of banks and used time series cross-section data of 40 commercial banks from 1991 to 2000. The researchers also applied maximum likelihood Tobit regression analysis to identify the determinants of banking efficiency in Pakistan. The results from Tobit regression analysis suggest a positive association between bank size and cost efficiency whereas the size is not significantly associated with the allocative efficiency of banks. Kamatam Srinivasa (2011) studied impact of mergers on physical performance of Banks. For this purpose Deposits, Advances, Business, No of Branches and No of Employees are used as physical dimensions. The private with private and private with public sector merged banks' physical performance was compared by using the correlation analysis. The study reveals that the two sector physical performance is improved after the merger but the correlation between private with private sector merged banks is higher than the private with public sector merged banks.

Very few studies available in case of physical performance merged banks and the studies reveals that Merger and Acquisition activity improve the physical performance of banks. The goal of this study is to examine the degree of association between pre and post merger physical performance of banks in terms of private with private and private with public bank mergers.

Objectives of the Study

The basic objectives of this paper is to assess the success of Mergers strategy in banking sectors by analyzing physical performance of selected merged banks in terms of changes in growth 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. It analyses how the Mergers helped the selected banks to achieve such physical performance.

Hypothesis of the Study

Based on the objectives of the study, the following two hypotheses have been formulated and tested.

H0:There is no significant difference between pre and post-merger physical performance of select public sector banks in India.

H0:There is significant difference between pre and post-merger physical performance of select public sector banks in India.

Research Methodology

Sample Descriptions:

As the complete sources list of all the banks is not available, the data for this study have been select based on the convenience sampling method, among the banks list with RBI Report. The list of commercial banks only three scheduled commercial banks were select based on consistent of data, the same is presented in Table-1.

Table-1

The list of Selected Merged Banks

S. No	Target Bank	Acquiring Bank	Category	Year
2	South Gujarat Local Area Bank Ltd.	Bank of Baroda	Pr-P	2004
3	Global Trust Bank Ltd.	Oriental Bank of Commerce	Pr-P	2004
4	Bharat Overseas Bank Ltd.	Indian Overseas Bank	Pr-P	2007

In order to evaluate post-merger financial performance of the merging banks in the long run, at least 10 years financial data is required i.e., five years pre-merger period and five years post-merger period. Only domestic mergers taking place were selected. Cross-border mergers, i.e., in which either bidder or the target was based outside India were dropped. This was done to ensure homogeneity of the economic and industrial environment so that generalizability of the results could be achieved for Indian Mergers.

Data Collection:

For the purpose of evaluation, investigation data is collected merger of the Indian commercial Banks. The financial and accounting data of banks is collected from banks Annual Report to examine the impact of the mergers on the financial performance of sample banks. Financial data has been collected from Bombay Stock Exchange (BSE), National Stock Exchange (NSE), Securities and Exchange Board of India (SEBI) and Centre for Monitoring Indian Economy (CMIE) for the study.

Data Analyses Method:

The statistical tool like- Mean, Standard deviation, simple and multiple correlation, Regression, t-Test, one way and two way ANOVA are used to study the Physical and financial performance of the selected merged banks before and after merger. The year of merger was considered as a base year and denoted as 0 and it is not considered for analysis

Analysis of Physical Performance of Merged Bank

The physical performance of the selected six merged banks before and after merger has been analyzed below with help of various parameters, which characterize a commercial banks performance.

Analysis of Physical Performance of Bank of Baroda

Bank of Baroda is a 107 years old state owned bank with a modern and contemporary personality offering banking products and services to large industrial, SME, retail and agricultural customers across the country. In 2004 Bank of Baroda acquired the failed Gujarat Local Area Bank. In order to examine the impact of this acquisition on physical performance of bank five years before the merger and five years after merger data has been selected; same are presented in Table-2 and 3

Table-2

Pre and Post Merger Physical Performance of Bank of Baroda

Period*	Deposits (Rs in Crore)	Advances (Rs in Crore)	Business (Rs in Crore)	No of Branches	No of Employees	Profit (Rs in Crore)
-5	51276	24393	75874	2666	47527	503
-4	53986	27421	107606	2757	48345	275
-3	61804	33663	86651	2718	38899	546
-2	66366	35348	95812	2798	40313	773

-1	72967	35601	100507	2770	39803	967
0	81333	43400	124912	2775	39529	677
1	93662	59912	153545	2777	38774	827
2	124916	83621	214252	2812	38604	1026
3	152034	106701	266222	2931	37496	1436
4	192397	143251	333062	3006	36440	2227
5	241262	175035	374271	3182	38152	3058

Source: BOB Annual Report, RBI Repor-2012-13, CMIE data base

*-5 to -1=Pre Merger Period, 0=Merger year, 1 to 5= post-Merger Period

Table-3

Group Statistics and Independent Sample Test of BOB (Assuming Equal Variance)

Indicator	*Merger*	Mean	SD	N	df	t Stat*	P(T<=t) two-tail	t Critical two-tail
Deposits (Rs in Crore)	*pre*	61280	8889	5	8	-3.810	0.005	2.31
	post	160854	57759	5				
Advances (Rs in Crore)	*pre*	31285	5080	5	8	-3.978	0.004	2.31
	post	113704	46049	5				
Business (Rs in Crore)	*pre*	93290	12357	5	8	-4.366	0.002	2.31
	post	268270	88767	5				
No of Branches	*pre*	2742	51	5	8	-2.684	0.031	2.31
	post	2942	163	5				
No of Employees	*pre*	42977	4564	5	8	2.436	0.041	2.31
	post	37893	951	5				
Profit (Rs in Crore)	*pre*	613	266	5	8	-2.578	0.033	2.31
	post	1715	923	5				

Source: Compiled from Table-2

*5% level of significance

Table-4: Regression of Analysis of BOB

Bank	Multiple R	R Square	Adjusted R Square	Standard Error
BOB	0.992*	0.984	0.969	147.725

Source: Compiled from Table 2

Table-5: ANOVA of BOB

Bank		*df*	*SS*	*MS*	*F*	*Significance F*
BOB	Regression	5	6833570.309	1366714.062	62.629	0.000165
	Residual	5	109112.7172	21822.54344		
	Total	10	6942683.026			

Source: Compiled from Table 2

From the table -2, the following observation can be made;

Pre and Post merger average deposits are Rs. 61 280 crores and 160 854 crores respectively. The average growth of the deposits of the bank is found to be 162.5 percent after the merger. The Mean Advances disbursed by the bank to various parties before and after merger is Rs. 31,285 crores and Rs 1,13,704 crores respectively. And the mean percentage increases was at 264 percent after the merger. The average number of branches observed before and after the merger are 2742 and 2942 respectively. The mean percentage increases in number of branches was 7.3 percent. The average number of employees before and after merger is recorded at 42,977 and 37,893 respectively but there is a decrease in number of employees with 5084 after the merger. The overall business of the bank increased after the merger with an average growth rate of 187.56 percent.

There is a tremendous growth observed in first three physical indicators (i.e, Deposits, Advances and Business) and less growth in number branches and number of employees are decreased after the merger. This is indicates that, the productivity and efficiency of the banks increased after the merger

T-test is conducted to test for equality of means before and after the merger of bank's selected physical indicators. The t-value of different parameters of the bank is given in Table-3. the t value of all the physical parameters before and after merger period are significant at 5 percent level. This indicates that there is a significance difference between means of pre and post-merger deposits, advances, business, number of branches and number of employees.Further the researcher, attempted to know the direction of change and relationship among the physical parameters of the bank. For analyzing relationship among the selected physical parameters of the bank, profit is considered as dependent variable and other variables (deposits, advances, business, number of branches and number of employees) are taken as independent variables. For this analysis multiple correlation and multiple regression technique has been worked out (see table 4) and the study found that, there is a high degree positive correlation (R=0.992) between the variable. The researcher also examined ANOVA by selecting independent variable (deposits, advances, business, number of branches and number of employee) and dependent variable profit (see table 5). This test is significant at 5 percent level.

From the above analysis the following conclusion can be drawn about physical performance of Bank of Baroda;there is tremendous increase in average growth rate of deposits, Advances and Business after the merger there is decline percentage in number branches and numbers of employees were recorded in the banks. This is positive sign for performance of banks and it indicates that, the less number of branches and employees were expanding more amount of growth in business. Therefore the productivity and efficiency of the bank has increased after the merger.Finally, it can conclude that there is a significant difference between pre and post-merger physical performance of bank.

Analysis of Physical Performance of Oriental Bank of Commerce

Oriental Bank of Commerce is one of the public sector bank India. The bank was nationalized on 15 April 1980. The bank has witnessed many ups and downs since its establishment (1943). In 1997, OBC acquired Bari Doab Bank and Punjab Cooperative Bank. The acquisition of these two banks brought with it no additional branches. On August 2004, OBC amalgamated Global Trust Bank. Global Trust Bank was a leading private sector bank in India that was associated with various financial institutions. To examine the impact of merger between OBC and GTB on physical performance of banks five years before the merger and five years after the merger data has taken and presented in Table-6.

Table-6

Pre and Post Merger Physical Performance of Oriental bank of Commerce

Perod*	Deposits (Rs in Crore)	Advances (Rs in Crore)	Business (Rs in Crore)	No of Branches	No of Employees	Profit (Rs in Crore)
-5	22095	9,326	120327	962	15195	278.62
-4	24680	11,076	151851	989	15358	202.89
-3	28488	14,158	432130	1005	13589	320.55
-2	29809	15,677	463290	1028	13507	456.95
-1	35674	19,681	565261	1051	13588	686.07
0	47850	25,299	745669	1168	14563	726.07
1	50197	33,577	853223	1191	14962	557.16
2	63996	44,138	1093879	1334	14730	580.81
3	77857	54,566	1368452	1376	14804	353.22
4	98369	68,500	1674301	1472	14656	890.42
5	120258	83,489	2044457	1580	15358	1134.68

Source: BOB Annual Report, RBI Repor-2012-13, CMIE data base

*-5 to -1=Pre Merger Period, 0=Merger year, 1 to 5= post Merger Period

Table-7

Group Statistics and Independent Sample Test of Oriental Bank of Commerce

(Assuming Equal Variance)

Indicators	*Merger*	Mean	SD	N	df	t Stat	P(T<=t) two-tail	t Critical two-tail
Deposits (Rs in Crore)	*Pre*	28149.324	5200.205	5	8	-4.273	0.003	2.306
	Post	82135.314	27767.807	5				

Advances (Rs in Crore)	*Pre*	13983.561	4046.781	5	8	-4.764	0.001	2.306
	Post	56854.240	19709.166	5				
Business (Rs in Crore)	*Pre*	346571.820	198665.032	5	8	-4.646	0.002	2.306
	Pst	1406862.565	470106.591	5				
No of Branches	*Pre*	1007.000	34.387	5	8	-5.703	0.000	2.306
	Post	1390.600	146.420	5				
No of Employees	*Pre*	14247.400	941.789	5	8	-1.490	0.175	2.306
	Post	14902.000	278.944	5				
Profit (Rs in Crore)	*Pre*	389.016	189.983	5	8	-1.941	0.088	2.306
	Post	703.258	308.229	5				

Source: Compiled from Table 6

*5% level of significance

Table-8: Regression of Analysis of OBC

Bank	Multiple R	R Square	Adjusted R Square	Standard Error
OBC	0.892	0.796	0.593	180.615

Source: Compiled from Table 6

Table-9: ANOVA of OBC

Bank		*Df*	*SS*	*MS*	*F*	*Significance F*
OBC	Regression	5	637587.06	127517.41	3.91	0.08
	Residual	5	163108.81	32621.76		
	Total	10	800695.87			

Source: Compiled from Table 6

From the table 6, the following observation can be made;

Pre and Post merger average deposits are Rs. 28,149.324 crores and 82,135.314crores respectively. The average growth of the deposits of the bank is found to be 191.78 percent after the merger. The Mean Advances disbursed by the bank to various parties before and after merger is Rs. 13983.561 crores and Rs 56854.240 crores respectively. And the mean percentage increases was at 306.58 percent after the merger. The average number of branches observed before and after the merger are 1007 and 1390 respectively. The mean percentage increases in number of branches was 38 percent. The average number of employees before and after merger is recorded at 14 247 and 14902 respectively. The number of employees increases with 655 after the merger. The overall business of the bank increased after the merger with an average growth rate of 305.3 percent.

There is a tremendous growth observed in first three physical indicators (i.e, Deposits, Advances and Business) and less growth in number branches and very less number of employees are inceased after the merger. This is indicates that, the productivity and efficiency of the banks increased after the mergerT-test is conducted to test for equality of means before and after the merger of bank's selected physical indicators. The t-value of different parameters of the bank is given in Table-7. The t values of all the physical parameters before and after merger period are significant at 5 percent level. This indicates that there is a significance difference between means of pre and post-merger deposits, advances, business, number of branches and number of employees.Further the researcher, attempted to know the direction of change and relationship among the physical parameters of the bank. For analyzing relationship among the selected physical parameters of the bank, profit is considered as dependent variable and other variables (deposits, advances, business, number of branches and number of employees) are taken as independent variables. For this analysis multiple correlation and multiple regression technique has been worked out (see table 8) and the study found that, there is a high degree positive correlation (R=0.992) between the variable. The researcher also examined ANOVA by selecting independent variable (deposits, advances, business, number of branches and number of employee) and dependent variable profit (see table-9). This test is significant at 5 percent level.

From the above analysis the following conclusion can be drawn about physical performance of Oriental Bank of Commerce;there is tremendous increase in average growth rate of deposits, Advances and Business after the merger. There is less percentage of growth in number branches and numbers of employees were recorded in the banks. This is positive sign for performance of banks and it indicates that, the less number of branches and employees were expanding more amount of growth in business. Therefore the productivity and efficiency of the bank has increased after the merger.Finally, it can conclude that there is a significant difference between pre and post-merger physical performance of bank.

Analysis of Physical Performance of Indian Overseas Bank

Indian Overseas Bank is a leading public sector bank in India. It provides a wide range of consumer and commercial banking services, including Savings Account, Current Account, Depositary Services, VISA Cards, Credit Cards, Debit Cards, Online Banking, Any Branch Banking, Home Loans, NRI Account, Agricultural Loans, Payment of Bills / Taxes, Provident Fund Scheme, Forex Collection Services, Retail Loans, etc. IOB was the first bank to venture into consumer credit, as it introduced the popular personal loan scheme in 1964. Since its inception, IOB has absorbed various banks including the latest acquisition of Bharat Overseas Bank in 2007. Bharat overseas Bank was one of Private bank in India. The impact of this Merger on Physical performance of Banks has analyzed below.

Table-10

Pre and Post Merger Physical Performance of Indian Overseas Bank

Period*	Deposits (Rs in Crore)	Advances (Rs in Crore)	Business (Rs in Crore)	No of Branches	No of Employees	Profit (Rs in Crore)
-5	36699	17447	49982	1512	24458	**567**
-4	41483	20295	56691	1544	24382	**1050**
-3	44241	25205	65661	1583	24366	**1073**
-2	50529	34756	85767	1601	24178	**707**
-1	68740	47060	111486	1777	23861	**1326**
0	84326	60424	144300	1951	24764	**1202**
1	100116	74885	175905	2012	25512	**1008**
2	110795	78999	190332	2099	26732	**783**
3	145229	111833	257541	2281	25626	**651**
4	178435	140724	319884	2733	27201	**513**
5	202135	160364	364246	3042	28280	**416**

Source: BOB Annual Report, RBI Repor-2012-13, CMIE data base

*-5 to -1=Pre Merger Period, 0=Merger year, 1 to 5= post Merger Period

Table-11

Group Statistics and Independent Sample Test of Indian Overseas Bank

Indicators	*Merger*	Mean	SD	N	df	t Stat	P(T<=t) two-tail	t Critical two-tail
Deposits (Rs in Crore)	*pre*	48338.428	12453.075	5	8	-4.901	0.001	2.306
	post	147341.900	43415.2885	5				
Advances (Rs in Crore)	*pre*	28952.708	12072.1641	5	8	-4.792	0.001	2.306
	post	113361.194	37488.3443	5				
Business (Rs in Crore)	*pre*	73917.365	24947.914	5	8	-4.940	0.001	2.306
	post	261581.708	81198.0511	5				
No of Branches	*pre*	1603.400	103.00631	5	8	-4.111	0.003	2.306
	post	2433.400	439.539873	5				
No of Employees	*pre*	24249.000	240.12705	5	8	-4.601	0.002	2.306
	post	26670.200	1152.04219	5				
Profit (Rs in Crore)	*pre*	944.530	304.833575	5	8	1.575	0.154	2.306
	post	674.399	232.823771	5				

Source: Compiled from Table 10

*5% level of significance

Table-12: Regression of Analysis of IOB

Bank	Multiple R	R Square	Adjusted R Square	Standard Error
IOB	**0.796**	**0.633**	**0.266**	**258.619**

Source: Compiled from Table 10

Table-13: ANOVA of IOB

Bank		*Df*	*SS*	*MS*	*F*	*Significance F*
IOB	Regression	5	576846.064	115369.213	1.725	0.282
	Residual	5	334419.283	66883.857		
	Total	10	911265.347			

Source: Compiled from Table 10

From the table 10, the following observation can be made;

Pre and Post merger average deposits are Rs. 48,338.428 crores and 147341.90 respectively. The average growth of the deposits of the bank is found to be 204.81 percent after the merger. The Mean Advances disbursed by the bank to various parties before and after merger is Rs. 28952.708 crores and Rs 113361.194 crores respectively. And the mean percentage increases was at 291.54 percent after the merger. The average number of branches observed before and after the merger are 1603 and 2433 respectively. The mean percentage increases in number of branches was 51.78 percent. The average number of employees before and after merger is recorded at 24249 and 26670 respectively. There is an increase in number of employees with 2421 after the merger. The overall business of the bank increased after the merger with an average growth rate of 253.89 percent.

There is a tremendous growth observed in first three physical indicators (i.e., Deposits, Advances and Business) and less growth in number branches and number of employees are decreased after the merger. This is indicates that, the productivity and efficiency of the banks increased after the merger. T-test is conducted to test for equality of means before and after the merger of bank's selected physical indicators. The t-value of different parameters of the bank is given in Table- the t value of all the physical parameters before and after merger period is significant at 5 percent level. This indicates that there is a significance difference between means of pre and post-merger deposits, advances, business, number of branches and number of employees.

Further the researcher, attempted to know the direction of change and relationship among the physical parameters of the bank. For analyzing relationship among the selected physical parameters of the bank, profit is considered as dependent variable and other variables (deposits, advances, business, number of branches and number of employees) are taken as independent variables. For this analysis multiple correlation and multiple regression technique has been worked out (see table-12) and the study found that, there is a high degree positive correlation (R=0.992) between the variable. The researcher also examined ANOVA by selecting independent variable (deposits, advances, business, number of branches and number of employee) and dependent variable profit (see table 13). This test is significant at 5 percent level.

From the above analysis the following conclusion can be drawn about physical performance of Indian Overseas Bank;There is tremendous increase in average growth rate of deposits, Advances and Business after the merger There is a less percentage of growth in number branches and numbers of employees were recorded in the banks. This is positive sign for performance of banks and it indicates that, the less growth in number of branches and employees were expanding more amount of growth in business. Therefore the productivity and efficiency of the bank has increased after the merger.Finally, it can conclude that there is a significant difference between pre and post merger physical performance of bank.

FINDINGS

From the above analysis and interpretation, the following important findings of each bank are identified.

Name of Merged Bank	Findings
Bank of Baroda	1. The average growth in deposits, a dvances, business and number of branches is 162.5, 264, 187.56, and 7.3 percent after the merger respectively. 2. The average percent decreases after the merger in number of employees is 11.82 percent.
Oriental Bank of Commerce	The average growth in deposits , advances, business, number of branches and number of employees is 191.78, 306.58, 305.3, 38 and 4.6 percent respectively.
Indian Overseas Bank	The average growth in deposits, advances, business, number of branches and number of employees is 204.8, 291.5 4, 253.85, 51.78 and 9.8 percent respectively.

Conclusion:

Merger is a useful tool for the growth and expansion in any industry and the Indian banking sector is no exception. It is helpful for the survival of the weak banks by merging into larger bank. In this chapter, the researcher examined the impact of merger on physical performance of selected commercial banks in India. Total three merged banks have been taken for the study as sample for this purpose, a comparison between pre and post merger physical performance in terms of deposits, advances, business, number of branches and number of employees has been made in all the cases. And the study reveals that, there is a significant improvement in physical performance of the banks after the merger.

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