

M&A's in the Indian Banking Sector - Strategic and Financial Implications

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India is slowly but surely moving from a regime of large number of small banks' to 'small number of large banks'. Both mergers and acquisitions are attempts from companies to combine their strengths in order to achieve synergistic benefits. The reasons behind a merger or acquisition may be various, e.g. increasing market share, entering new markets, developing new products through R&D, or achieving administrative benefits. In a merger, two companies combine to form a new company. In an acquisition, one company takes over the other in terms of management or ownership. Mergers and acquisitions can create economies of scale, in which costs of similar functions can be reduced. Cost per unit of output can reduce as well with increased output bringing down the cost per unit to be produced. Investors are happy with the notion that the merger or acquisition will give the company added strength and benefits. This paper aims to probe into the various motivations for mergers and acquisitions in the Indian Banking sector. In contrast, when a merger or acquisition does not work, management can choose to de-merge or disinvest ownership in acquired companies, spinning them off to retain its inherent strengths. (Source: Investopedia)

Like all business entities, banks want to safeguard against risks, as well as exploit available opportunities indicated by existing and expected trends. M&A's in the banking sector have been on the rise in the recent past, both globally and in India. In this backdrop of emerging global and Indian trends in the banking sector, this research paper illuminates the key issues surrounding M&A's in this sector with the focus on India. It seeks to explain the motives behind some M&A's that have occurred in India post-2000, analyze the benefits and costs to both parties involved and the consequences for the merged entity. A look at the future of the Indian banking sector, and some key recommendations for banks, follow from this analysis.

Keywords: Strategy, Banking, Financial Services, India, Mergers, Acquisitions

Introduction

The Indian banking scenario has shown major turmoil in the past few years in terms of mergers and acquisitions. Deregulation has been the main driver, through three major routes - dismantling of interest rate controls, removal of barriers between banks and other financial intermediaries, and

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lowering of entry barriers. It has led to disintermediation, investors demanding higher returns, price competition, reduced margins, falling spreads and competition across geographies forcing banks to look for new ways to boost revenues. Consolidation has been a significant strategic tool for this and has become a worldwide phenomenon, driven by apparent advantages of scale-economies, geographical diversification, and lower costs through branch and staff rationalization, cross-border expansion and market share concentration. The new Basel II norms have also led banks to consider M&As.

This research paper looks at some M&As that have happened post-2000 in India to understand the intent (of the targets and the acquirers), resulting synergies (both operational and financial), modalities of the deal, congruence of the process with the vision and goals of the involved banks, and the long term implications of the merger.

The Indian Banking Sector

The history of Indian banking can be divided into three main phases ¹:

- ❑ Phase I (1786- 1969) - Initial phase of banking in India when many small banks were set up
- ❑ Phase II (1969- 1991) - Nationalization, regularization and growth
- ❑ Phase III (1991 onwards) - Liberalization and its aftermath

With the reforms in Phase III the Indian banking sector, as it stands today, is mature in supply, product range and reach, with banks having clean, strong and transparent balance sheets. The major growth drivers are increase in retail credit demand, proliferation of ATMs and debit-cards, decreasing NPAs due to Securitization, improved macroeconomic conditions, diversification, interest rate spreads, and regulatory and policy changes (e.g. amendments to the Banking Regulation Act).

Certain trends like growing competition, product innovation and branding, focus on strengthening risk management systems, emphasis on technology have emerged in the recent past. In addition, the impact of the Basel II norms is going to be expensive for Indian banks, with the need for additional capital requirement and costly database creation and maintenance processes. Larger banks would have a relative advantage with the incorporation of the norms.

Review of Literature

Government policy can be the one of the major forces in banking consolidation. In 1997, as a result of the Asian financial crisis, the governments of the region have promoted consolidation of the banking system on the ground that this would contribute to the stabilization of the banking system of the region (Berger et al (1999)). Besides this guided merger, consolidation due to market driven has also increased. According to Amel (2002), between 1990 and 2001, more than 8000 bank consolidations has occurred globally. It has been argued that the rationale for consolidation of banking institutions through mergers and acquisitions is to improve cost and revenue efficiency that will in turn improve profitability, safety and soundness of these institutions (Berger, Hunter and Timme (1993)).

Ahmad Ismail, Ian Davidson & Regina Frank (2009) concentrates on European banks and investigates post-merger operating performance and found that industry-adjusted mean cash flow return did not significantly change after merger but stayed positive. Also find that low profitability levels, conservative credit policies and good cost-efficiency status before merger are the main determinants of industry-adjusted cash flow returns and provide the source for improving these returns after merger. Anthony (2008) investigates the effect of acquisition activity on the efficiency and total factor productivity of Greek banks. Results show that total factor productivity for merger banks for the period after merging can be attributed to an increase in technical inefficiency and the disappearance of economies of scale, while technical change remained unchanged compared to the pre-merging level.

Elena Carletti, Philipp Hartmann & Giancarlo Spagnolo (2007) modelled the impact of bank mergers on loan competition, reserve holdings, and aggregate liquidity. The merger also affects loan market competition, which in turn modifies the distribution of bank sizes and aggregate liquidity needs. Mergers among large banks tend to increase aggregate liquidity needs and thus the public provision of liquidity through monetary operations of the central bank.

George E Halkos & Dimitrios (2004) applied non-parametric analytic technique (data envelopment analysis, DEA) in measuring the performance of the Greek banking sector. He proved that data envelopment analysis can be used as either an alternative or complement to ratio analysis for the evaluation of an organization's performance. Marc J Epstein. (2005) studied on merger failures and concludes that mergers and acquisitions (M&A) are failed strategies. However, analysis of the causes of failure has often been shallow and the measures of success weak.

Morris Knapp, Alan Gart & Mukesh Chaudhry (2006) research study examines the tendency for serial correlation in bank holding company profitability, finding significant evidence of reversion to the industry mean in profitability. The paper then considers the impact of mean reversion on the evaluation of post-merger performance of bank holding companies. The research concludes that when an adjustment is made for the mean reversion, post-merger results significantly exceed those of the industry in the first 5 years after the merger.

Ping-wen Lin (2002) findings proves that there is a negative correlation and statistical significance exist between cost inefficiency index and bank mergers; meaning banks engaging in mergers tend to improve cost efficiency. However, the data envelopment analysis empirical analysis found that bank mergers did not improve significantly cost efficiency of banks. In another study, he found that (1) generally, bank mergers tend to upgrade the technical efficiency, allocative efficiency, and cost efficiency of banks; however a yearly decline was noted in allocative efficiency and cost efficiency. (2) In terms of technical efficiency and allocative efficiency improvement, the effect of bank mergers was significant; however, in terms of cost efficiency improvement, the effect was insignificant.

Robert DeYoung (1997) estimated pre- and post-merger X-inefficiency in 348 mergers approved by the OCC in 1987/1988. Efficiency improved in only a small majority of mergers, and these gains were unrelated to the acquiring bank's efficiency advantage over its target. Efficiency gains

were concentrated in mergers where acquiring banks made frequent acquisitions, suggesting the presence of experience effects. SU WU (2008) examines the efficiency consequences of bank mergers and acquisitions of Australian four majors banks. The empirical results demonstrate that for the time being mergers among the four major banks may result in much poorer efficiency performance in the merging banks and the banking sector.

Suchismita Mishra, Arun, Gordon and Manfred Peterson (2005) study examined the contribution of the acquired banks in only the non conglomerate types of mergers (i.e., banks with banks), and finds overwhelmingly statistically significant evidence that non conglomerate types of mergers definitely reduce the total as well as the unsystematic risk while having no statistically significant effect on systematic risk. Ya-Hui Peng & Kehluh Wang (2004) study addresses on the cost efficiency, economies of scale and scope of the Taiwanese banking industry, specifically focusing on how bank mergers affect cost efficiency. Study reveals that bank merger activity is positively related to cost efficiency. Mergers can enhance cost efficiency, even though the number of bank employees does not decline. The banks involved in mergers are generally small were established after the banking sector was deregulated.

Data and Methodology

Since 2000, only seven bank mergers were identified and are considered for the study. The data used in this study is gathered from the annual reports of all the seven banks for the period 2000 to 2007. The data was divided into pre- and post-merger according to each individual banks completed merger date for the descriptive equality test analysis. If a merger was completed before the middle of the year, that year is considered as the starting period of the post merger analysis. On the other hand, if it was completed after the middle of the year, then that year is considered as pre-merger period. Finally, analysis was carried out on a three year pre-merger period and a three year post-merger period.

Objectives of the study

1. To determine differences in the average values of different variables during pre-merger and post-merger period
2. To compare impact of different factors on merged bank(Pre and Post Analysis)
3. To analyze the performance of banks before and after merger in terms of return on capital employed.

Hypotheses of the study :

Regarding First Objective

H_0 : There is no significant differences in the average values of different variables during pre-merger and post-merger period.

H_1 : There is a significant difference in the average values of different variables during pre-merger and post-merger period

Regarding Second Objective

H₀: There is no significant impact of different factors during pre-merger and post-merger period.

H₁: There is significant impact of different factors during pre-merger and post-merger period.

Regarding third Objective

H₀: It is hypothesized that performance of the banks are not improved during pre-merger and post-merger period.

H₁: It is hypothesized that performance of the banks are improved during pre-merger and post-merger period.

Research Methodology

The analysis is divided into two parts; namely, Regression analysis and Factor analysis using Kaiser Normalization method where the data's are converted in to ratios. The study used CRAMEL model for further analysis. An entity specific analysis of the risk profile is done through qualitative cum quantitative approach following a structured methodology called the "CRAMEL" model. Based on the rating criteria, relative strengths and weakness of each entity in comparison to its peer group are evaluated. The CRAMEL model consists of the following:

- ❑ Capital Adequacy
- ❑ Resource raising ability
- ❑ Asset Quality
- ❑ Management and systems evaluation
- ❑ Earning Potential
- ❑ Liquidity / Asset Liability Management

By performing tests on mean differences for the CRAMEL variables it can be determined whether there are significant differences in the average values of those variables during the pre-merger and post-merger periods. Based on the CRISIL (**Credit Rating Information Services of India Limited**) methodology, the following variables are taken into consideration:

Capital Adequacy	: Debt- Equity, Advances to Total Assets, Capital buffer Ratio
Resources	: Cost efficiency (CE), Cost/Total Asset
Asset Quality	: Gross NPA /Net advances, Loans/ Deposits
Management Quality	: Operating rev. / Turnover per share, Total Advances / deposits
Earnings Quality	: Earnings per share, Interest Earning Ratio, Price Earning Ratio, Return on Total Assets (%), Profit Margin (%), Return on Shareholders Funds (%)
Liquidity	: Current Ratio, Solvency Ratio (%), Liquid Asset / Deposits, Liquid Asset/ Total Advances

An examination of the impact of the CRAMEL model variables is done by data reduction using Factor analysis. By performing Regression analysis and t tests on the CRAMEL variables it can be determined whether there are significant relationship of those variables during the post-merger periods. Detailed description of the variables will be provided in the following section when the empirical findings are discussed. An examination of the impact of the CRAMEL –type variables is done by data reduction using factor analysis.

Empirical Findings

Regression Analysis on Pre- Merger CRAMEL Variables

The results of the regression analysis conducted on Pre- Merger CRAMEL type variables (Table1) infers that, out of 16 variables considered for the study only five variables such as cost buffer ratio, Advances to Total Assets, Profit margin, solvency ratio, current ratio, were found to be highly significant, which is evident from (table no.1) the t test. Also from the analysis of variance (ANOVA) conducted on those significant variables infers that there is a significant relationship between those variables.

Table 1: Regression Analysis on the Pre Merger CRAMEL type Variables

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	.743	.198		3.746	.066
ADVtoTA	3.194	.553	1.443	5.778	.059
Profitmargin	-.385	.049	-2.445	-7.919	.080
CR	-.033	.003	-1.122	-9.905	.064
SR	-.015	.002	-1.016	-7.703	.082
CBR	-4.719	.772	-.591	-6.111	.093
Adjusted R Square	.980				
Durbin-Watson Score	2.708				

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.117	5	.023	59.449	.048 ^a
2. Residual	.000	1	.000		
3. Total	.117	6			

A regression equation has been developed on the significant variables which are shown below:

Regression Equation:

$$\text{ROSF} = 0.743 + 3.194 (\text{ADVTA}) - 3.85 (\text{PM}) - 0.033 (\text{CR}) - 0.015 (\text{PM}) - 4.719 (\text{CBR}) + (3.746) (5.178) \\ (-7.919) \quad (-9.905) \quad (-7.703) \quad (-6.111)$$

* note the number in brackets denote the t- values.

The regression equation infers that there is a positive relationship between ROSF and Advances to Total and there is negative relationship with cost buffer ratio, profit margin, solvency ratio, current ratio.

Factor Analysis on the Pre Merger CRAMEL type Variables

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis (for example, to identify collinearity prior to performing a linear regression analysis). The table No.2 shows the factor analysis undertaken on the Pre- merger CRAMEL-type variables. The variables are rotated through varimax with Kaiser Normalization method and extracted using principal component analysis. Three factors are evolved through this factor analysis.

Table 2: Factor Analysis on Pre- merger CRAMEL-type variables

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Capital adequacy	.900	-.285	-.265	-.056
D E ratio ADVtoTA CBR	.866	.387	.292	-.047
CE	-.060	.069	-.301	.887
Cost toTA	.191	.295	.331	.849
Loan to deposits	-.007	.232	-.134	.937
TAtoTD EPS	.788	-.039	.417	.438
Profit margin	.126	.713	-.510	-.055
IER ROSF CR	-.919	-.127	-.334	.115
SR LATD LATA	.306	.943	.046	.011
	.129	-.142	-.333	.918
	.179	.973	.074	-.090
	-.585	.733	.241	.057
	.049	.945	-.023	.112
	.671	-.193	-.020	-.668
	-.234	.739	-.261	-.528
	.036	.925	.053	.281

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser.

Normalization

From the factor analysis on the post merger performance of the Indian banking institutions, it is found that three major factors are identified and they are interlinked. In the first factor variables like capital adequacy, Debt- equity, Cost to total Asset, Total advances to deposits and solvency ratios join together to form this factor. In the second factor variables like, Current Ratio, Loans to deposits, Earnings per share, Liquid Assets to Total Deposits, Liquid Assets to Total Advances, Return on share holders fund and interest earning ratios joined together. In the last group variables like, Advances to Total Assets, Cost Efficiency, Capital Buffer Ratio, and Profit Margin ratios are joined to-gether which interprets again the profitability is majorly linked with advances and deposits.

To summarize the factors, the CRAMEL type variables appropriately combine together to and clearly indicate us which are the variables that we should closely monitor. Variables such as Advances to Total Assets, Cost Efficiency, Capital Buffer Ratio, and Profit Margin ratios, which are grouped together is found to be highly significant variables identified through T-test. So we will analyse these variables in the post merger performance also and find out the variables which are significantly during both the periods.

Regression Analysis on Post - Merger CRAMEL Variables

The results of the T-test conducted in comparison with Indian banks are presented in Table1, shows the regression analysis of CRAMEL variables. Only five variables cost efficiency, Advances to Total Assets, interest earning ratio, Profit margin, current ratio, solvency ratio were found to be highly significant, which is evident from (table no.1) the t test and from the analysis of variance (ANOVA) conducted on those significant variables infers that there is a significant relationship between the variables.

A regression equation has been developed on the significant variables which are shown below:

Table 3: Regression Analysis on the post merger CRAMEL variables

Coefficient ^a					
CRAMEL- type variables	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 ROSF(Constant)	.311	.538		4.578	.067
Cost Efficiency (CE)	-3.756	.220	-1.144	-17.052	.037
Advances to total Assets (ADVtoTA)	2.734				
Profit Margin (PM0)	-.033	.901	.380	3.035	.023
Current Ratio (CR)	10.584				
Interest Earning ratio (IER) Adjusted	-2.803	.003	-.873	-10.357	.061
R Square Durbin-Watson Score	.995	.771	2.001	13.730	.046
	2.266	.147	-1.794	-19.127	.033

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.473	5	.095	256.391	.047 ^a
Residual	.000	1	.000		
Total	.474	6			

From the Regression analysis of CRAMEL type variables keeping return on shareholders funds (ROSF) as constant since performance is assumed to be based on the return on the funds employed. From the t values we find that out of 16 CRAMEL type variables considered for the study only 5 variables seems to be significant. Also the adjusted R Square (0.995) and Durbin- Watson Score (2.266) were found to be highly significant. Also the F test signifies that there is a significant relation between the variables.

Regression

$$\text{ROSF} = 0.310 \text{ (4.577)} - 3.755 \text{ (-17.052)} \text{ (CE)} + 2.733 \text{ (3.034)} \text{ (ADVTA)} - 0.0032 \text{ (-10.357)} \text{ (PM)} + 10.584 \text{ (13.729)} \text{ (CR)} - 2.803 \text{ (-19.127)} \text{ (IER)}$$

Factor Analysis on the Post Merger CRAMEL Variables

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis (for example, to identify collinearity prior to performing a linear regression analysis). The table No.2 shows the factor analysis undertaken on the CRAMEL-type variables before bank merger. The variables are rotated through varimax with Kaiser Normalization method and extracted using principal component analysis. Three factors are evolved through this factor analysis.

From the Factor Analysis on the CRAMEL- type variables it is found that 3 major factors are evolved. In the first factor variables like capital adequacy, Debt- equity, Cost to total Asset, Cost Efficiency and all liquidity ratios join together to form this factor. In the second factor variables like, Total advances to deposits, Capital Buffer Ratio, Loans to deposits, EPS, Return on share holders fund and interest earning ratios joined together. In the last group variables like, Advances to Total Assets, and Profit Margin are joined together. The Factors are grouped based on certain significance and we find that the ADTA and PM have formed a factor which is the important finding of the study, since those two variables are seemed to highly significant in regression.

From the factor analysis on the post merger performance of the Indian banking institutions, it is found that three major factors are identified and they are interlinked. In the first factor variables like capital adequacy, Debt- equity, Cost to total Asset, Cost Efficiency and all liquidity ratios join

Table 4: Factor Analysis on the Post merger CRAMEL-type variables

Component Matrix				
	Component			
	1	2	3	4
Capital Adequacy (CA)	0.960	0.069	0.206	0.136
Debt- Equity (DE)	0.987	0.059	0.151	0.005
Advances to Total Assets (ADTA)	0.314	0.878	0.141	0.266
Capital buffer Ratio (CBR)	0.011	0.911	0.388	0.106
Cost efficiency (CE)	0.795	0.113	0.444	0.310
Cost/Total Asset (CTA)	0.961	0.236	0.046	0.097
Loans/ Deposits (LD)	0.286	0.708	0.543	0.289
Total Advances / deposits (TAD)	0.400	0.492	0.341	0.646
Earnings per share (EPS)	0.148	0.935	0.103	0.029
Interest Earning Ratio (IER)	0.424	0.640	0.607	0.107
Profit Margin (%) (PM)	0.048	0.064	0.315	0.810
Return on Shareholders Funds (%) (ROSF)	0.057	0.978	0.178	0.030
Current Ratio (CR)	0.833	0.163	0.426	0.210
Solvency Ratio (%) (SR)	0.098	0.100	0.949	0.279
Liquid Asset / Deposits (LAD)	0.147	0.835	0.425	0.210
Liquid Asset / Total Advances (LATA)	0.183	0.926	0.068	0.151

together to form this factor. In the second factor variables like, Total advances to deposits, Capital Buffer Ratio, Loans to deposits, EPS, Return on share holders fund and interest earning ratios joined together. In the last group variables like, Advances to Total Assets, and Profit Margin ratios are joined together which interprets again the profitability is majorly linked with advances and deposits.

To summarize the factors, the CRAMEL type variables appropriately combine together to and clearly indicate us which are the variables that we should closely monitor. Variables such as advances to total assets, profit margin, which are grouped together is found to be highly significant variables identified through T-test. Also both these variables seems to highly significant during both pre-merger and post merger periods. So the banks that tend to merge have to carefully analyze those two variables before and after merger, since they are closely associated with the performance of the banks. This paper attempt to analyze the parameter which affects the performance of the banks before and after merger. The analysis of CRAMEL-type variables using regression analysis and further by factor analysis tends to identify the important variables such as Advances to Total Assets and profit margin that significantly affect the performance of the mergers before and after the bank mergers. In conclusion, the results on the post-merger performance suggest that banks are becoming more focused on their high net interest income activities and the main reasons for their mergers are to scale up their operation. The performance of various CRAMEL type variables depend mainly on the above said factors, so the banks have to concentrate on their profitability, which is one of their major merger objectives.

Future Implications of the study

This research paper is focussing on one motive only i.e. Forced Merger Restructuring of weak bank. Study may be conducted on other motives also like Voluntary Merger, Universal banking etc. Sample Size may be expanded and year of analysis may also be extended. Other approaches for comparing pre-merger and post-merger may also be observed and analyzed. Factors affecting mergers and acquisition may be extended

Conclusion

Based on the trends in the banking sector and the insights from the cases highlighted in this study, one can list some steps for the future which banks should consider, both in terms of consolidation and general business. Firstly, banks can work towards a synergy-based merger plan that could take shape latest by 2009 end with minimization of technology-related expenditure as a goal. There is also a need to note that merger or large size is just a facilitator, but no guarantee for improved profitability on a sustained basis. Hence, the thrust should be on improving risk management capabilities, corporate governance and strategic business planning. In the short run, attempt options like outsourcing, strategic alliances, etc. can be considered. Banks need to take advantage of this fast changing environment, where product life cycles are short, time to market is critical and first mover advantage could be a decisive factor in deciding who wins in future. Post-M&A, the resulting larger size should not affect agility. The aim should be to create a nimble giant, rather than a clumsy dinosaur. At the same time, lack of size should not be taken to imply irrelevance as specialized players can still seek to provide niche and boutique services.

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