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Sony Kuriakose Justin Paul

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Strategic and financial similarities of bank mergers

Sony Kuriakose
Department of Commerce, Newman College, Mahatma Gandhi University, Kerala, India, and

Justin Paul
Graduate School of Business, University of Puerto Rico, San Juan, USA

Abstract

Purpose – Consolidation through mergers and acquisitions indicates one of the major outcomes of the financial transformation process and contemporary trend in the Indian banking sector. Literature suggests that the pre-merger financials of banks are crucial in deciding the post-merger performance of merged entities. In this context, the aim of the present study is to provide insights on the strategic and financial similarities of merging partners in the bank mergers that occurred in the post-liberalization India.

Design/methodology/approach – This paper considers all bank merger deals in the post-liberalization period, which involve purchase consideration either in the form of stock or cash. Hypotheses about the strategic similarities and dissimilarities are tested. The study considers all important aspects such as relative size of targets, diversity of earnings, efficiency, financial leverage, prudential norms and profitability.

Findings – The study finds that banks are dissimilar in most of the key areas, and these might have an adverse impact on the post-merger performance.

Originality/value – The study is original because we take into account all the bank merger deals in the period, which involve purchase consideration either in the form of stock or cash.

Keywords Banking, Financial performance, Bank mergers, Strategic similarity

Paper type Research paper

Introduction

Banking and financial institutions (FIs) remain the most important components of any financial system. In India, the banking sector is the backbone of the economy, and it is sound, well capitalized and regulated. The sector is currently valued at US$1.31 trillion, has a growth rate of 23 per cent and contributes 6 per cent to the Indian gross domestic product (Reserve Bank of India (RBI) report on Indian Economy, 2013). Moreover, India's relatively conservative lending approach in the banking sector, when compared to the developed economies, seems to have helped the country in restricting the advancement of the global financial crisis 2008-2010 (Paul, 2010). When we discuss the Indian banking sector in the post-liberalized era, it is pertinent to confine the focus into three "C's": competition, consolidation and convergence. Further, it is to be noted that consolidation of banks can be used as a strategic tool to face competition and to create financial supermarkets through the process of financial service convergence. In that meaning, consolidation through mergers and acquisitions (hereafter M&As) indicates

one of the major outcomes of the financial transformation process and contemporary trend in the Indian banking sector.

The effect of consolidation on the merging banks and on the economy is a multi-dimensional issue (Altunbas and Ibanez, 2004). The volume and number of business combinations increased in parallel with the economic policies introduced in India during 1990s. M&As have been studied in depth by theoretical and empirical literature examining the reasons and effects of such business combinations. While an impressive body of literature exists on mergers in the international context, few studies have been conducted in India, particularly in the financial sector, and these studies are confined to market performance and efficiency gains. While studying the results of these studies, we understand that the pre-merger financials of merging banks hold an important role in deciding the performance in the post-merger scenario. Therefore, this paper discusses and compares the financial profiles of the merging partners. As far as policymakers are concerned, the important question for the discussion is whether the banks are strategically similar or not? This question has gained significant attention from the practitioners and analysts because the strategic similarity or dissimilarity of key variables has a significant impact on post-merger bank performance. A merger will substantially increase the value of the firm only when there is a proper integration of strategic, financial, economic and organizational characteristics (Ramaswamy, 1997). These factors are directly correlated to the performance of the firm after the merger. Synergy realization needs the proper matching of strategic features of the banks. Therefore, the study assesses the strategic and financial features of merging banks as well.

Structural differences in the Indian and US banking community
The US banking sector is the most competitive industry in the world, with more than 7,000 banks. Unlike the fragmented regulatory system in the USA, the Indian banking sector is regulated by a central bank, i.e. the Reserve Bank of India (RBI). The Indian banking structure is multi-tiered, and it consists of 82 commercial banks, 92 regional rural banks, 1,813 urban cooperative banks and 107,497 rural cooperative banks. The main structural difference between the US and the Indian banking scene is the presence of cooperative banks in rural India. Unlike the USA and other developed nations, the number of merger deals is negligible in India. There are two reasons for the lesser number of deals. Late and slow reform process and merger movement is not that popular in the cooperative sector.

In the USA, during 1990-2012, the number of banking institutions reduced from 17,325 to 7,083, and it can be taken as an indicator for the pace of market concentration, while the Indian banking sector is still fragmented. The fragmented nature of the Indian banking system enhances the risk factor in the sector, as the share of small banks in the deposits, profit after tax, borrowing, interest and non-interest income keeps on increasing. Unlike the global context, the Indian banking system consists of a larger number of small banks that will affect the financial stability of the system, as it extends the intermediation costs and the low capabilities of small banks in managing risks. The first five banks, in terms of size, cover only 45 per cent of balance sheet size of the Indian banking system, while it is 75-79 per cent in the global context. Further, total assets of first ten banks represent only 58.84 per cent of the gross domestic product of India, which is far below the corresponding figures for many countries like the USA, the UK,

Taiwan, China, Singapore, etc. Again, no banks from India have been included in the first 50 banks in the world in terms of market capitalization and asset size, and no Indian bank is ranked among the top ten Asian banks. Though India is the tenth largest economy in the world, the country does not have a decent-sized bank to compete with global banks.

The Indian banking scenario had not been a complex one until 1969. However, after the nationalization of 14 banks, the expectations of the government and the public changed considerably (Samal, 2001). With the second dose of nationalization in 1980, more banks started concentrating on social obligations and a very few banks had a commercial approach in their business. The overemphasis on the social motto caused heavy losses for the industry and non-performing assets (NPAs) mounted up. By 1991, the sector was burdened with bad loans, higher reserve requirements, administered interest rates, lack of competition, etc. To deal with this issue, the Government of India appointed a committee under the chairmanship of M. Narasimham and it paved the way of reforms in Indian banking.

The financial transformation process has brought about a comprehensive change in the competitive landscape of the Indian banking system. The industry became market driven, more competitive and deregulated. In line with the recommendations of Narasimham Committee Reports (1991, 1998), banks used M&As as a strategy to accentuate efficiency through cost savings or increased revenue, to acquire the status of "Universal Banks", to increase the geographical presence, business diversification, technology up-gradation, acquiring new skills, etc. Moreover, the expectations of the shareholders and their demand for improved returns played a major role in lifting M&As as an immediate agenda in the banking sector (Vision Report on Banking Industry, IBA, 2010).

In the USA, increased market power, elimination of competition, improvements in efficiency, technological progress are considered to be the expected consequences or motives of consolidation and deregulation (Berger et al., 1998). The Indian experience is not different from the US literature in terms of merger motives. An overview of the banking sector reforms in the past two decades would pinpoint the reasons and context of bank mergers in India. In general, regulatory interventions and other business environmental reasons are the motivating drivers behind the bank merger activity in India similar to global trends. Regulatory interventions of the state can be interpreted in two ways:

(1) compulsory mergers or forced mergers initiated by the state or the central bank to protect depositors' interest u/s 45 of the Banking Regulation Act, 1949 or caused by unexpected financial recessions (global experience) or compulsion from RBI to adhere with Basel II norms like capital adequacy, shareholding patterns; and

(2) policy changes announced in the way of economic reforms or deregulation process and recommendations of the various committees appointed by RBI have increased the corporate restructuring activity in the Indian banking sector.

Business environmental reasons include elimination of competition, growth prospects, tax benefits, acquisition of technology, synergies arising from geographical diversification, increased efficiency, cost savings and economies of scale and financial service convergence, etc.

Finally, the hazards caused by the implementation of Basel II norms stressed banks to adopt the standardized approach for capital adequacy, asset quality and credit risk management. Even if it enhances the quality and efficiency of the banking system, a study conducted by the Federation of Indian Chamber of Commerce and Industry in the year 2005, revealed that the Indian banking system needs more than Rs 500bn to implement Basel II norms. Consequently, this inefficiency forced weak banks to merge with strong banks (Table I).

Consolidation process and phases

In the pre-nationalization period (1961-1968) and in the nationalization period, the Indian banking sector witnessed 46 deals and 13 deals. Majority of the deals that occurred in the aforementioned period were caused by the regulatory interventions of the RBI u/s 45 of the Banking Regulation Act, 1949 and induced by the larger public interest. In the reform period (1993-till date), the Indian banking sector experienced 25 merger deals including the latest State Bank of India–State Bank of Indore merger in 2011. In contrast to the pre-reform period, the post-reform period witnessed voluntary mergers and universal banking models (Bank-non-banking finance company merger) as per section 44A of the Banking Regulation Act. Again, during this period, the State Bank of India acquired two of its subsidiaries as per the State Bank of India (Subsidiaries Banks) Act, 1959.

M&A activity and post-merger performance relationships

Studies on short-term wealth effects using event study method cover the prominent literature in the merger studies across the globe. These studies are based on the hypothesis that excess returns around announcement day could explain the value creation associated with the bank mergers (Altunbas and Ibanez, 2004). In efficiency, researchers adopted different methodologies from simple ratio analysis to advanced econometric models. In terms of the methodology, the US and European studies followed two empirical approaches, namely, event study methodology and pre- and post-merger performance using accounting data (Hogarty, 1970; Dodd, 1980; Jenson and Ruback, 1983; Healy et al. (1992); Adel et al., 2008; Kumar and Suhas, 2010). But, the results from the US and European Union are contradictory. The US studies argue that mergers cause

Period	No.
Pre-nationalization period	46
Nationalization period	13
Post-reform period	25
Forced merger	13
Voluntary mergers	08
Universal banking model	02
SBI and its associates	02
Total	84

Source: Different RBI publications

Table I.
Bank merger activity
in India

wealth destruction to the bidder banks and document shifting of wealth from bidder banks to target banks. In operating performance also, the US firms showed a sharp decline in the post-merger cash flows (Cornett and Tehranian, 1992). But in the European Union, studies well documented the efficiency gains in the bank acquisitions and noted that the differences in the value creation for bidders and targets are not significant. In short, the results are ambiguous in nature.

Previous empirical studies from other economies also give inconsistent results. While Malaysian studies give positive results, Japanese acquisitions give the opposite results. Further, Australian studies produce insignificant post-merger profitability. Indian studies also addressed similar issues using the same methodologies mentioned at the beginning. Most of the studies in the Indian corporate sector documented substantial decline in the after-merger cash flows. In the financial sector, studies showed mixed results.

Most empirical studies of merger effects use the US data to ascertain whether merger creates wealth to shareholders or not (Scholtens and De Wit, 2004). Hogarty (1970) is one of the first researchers who addressed this issue in the US corporate sector by examining 43 mergers during 1953 and 1964. He assumes that merger will be successful only when it increases the firm value. The sample was taken from various manufacturing industries that varied in size from US$ one mn to US$500mn in assets. The study also used an investment performance index created by Fisher and Lorie (1964). In evaluating post-merger performance, only 23 per cent of firms in the sample outperformed industry averages. Additionally, stock prices and dividends were found to be lower in firms which utilized aggressive means in acquiring merger candidates. Hogarty (1970) concludes that there exists high variability in the stock prices of firms which initiate M&A activities.

Dodd and Ruback (1977) studied 306 tender offers between 1973 and 1976 in the USA and found that acquisitions caused abnormal returns to the target firms. They used the capital asset pricing model model to identify the cumulative abnormal returns and stated that stockholders of successful acquiring firms earn positive abnormal returns, and in the case of target firms, the price change was permanent. They observed that these deals did not result in any synergy, internal efficiency and monopoly, as bidders already had control over 50 per cent in the target firms.

Muller (1980) made a comparison of 287 acquired and non-acquired firms between 1962 and 1972. He used univariate test with sales, total assets, net income, growth and leverage. He found that mergers did not lead to profitability and that non-acquired firms outperformed merging entities. Dodd (1980) researched deals for the period from 1970 to 1977 and added that target shareholders showed positive abnormal returns but bidders resulted in wealth destruction. Firth (1980) supported Dodd's findings by his work on 486 deals between 1969 and 1975. In contrast to Dodd's study, he used the market model to compare the actual returns against those expected if the merger had not been announced. The study shows that after the deal, the compensation levels of the directors of the acquiring firms increased considerably. He concluded that the increased returns for the target firms can be traced with the higher merger premiums paid.

Jenson and Ruback (1983) reviewed 20 research papers on M&As published between 1974 and 1983. They inferred that, on average, the target firm's share prices increased 20 per cent for mergers and 30 per cent for tender offers. Further, they identified the

potential sources of takeover gains. Dennis and McConnell (1986) researched 132 merging firms between 1962 and 1982 using market-adjusted model and they found that target stock price increased 8.16 per cent on event day and on previous trade day. Trifts and Scalon (1987) examined 14 target banks and 17 bidder banks during 1982 and 1985. They found that target shareholders had large abnormal returns and bidding firms had negative returns. They used a market model of 40 weeks before and 20 weeks after announcement share price data.

Revenscraft and Scherer (1989) examined pre-merger (251 companies) and post-merger (2,732 companies) performance for the period of 1950-1977 in the USA. They used cash flow over sales for analysis and found negative abnormal returns in the post-merger period. Servaes (1991) researched 704 mergers using Tobin's q ratio and found that gains are more when the target company performs badly and the bidder performs well. Healy et al. (1992) addressed the issue of long-term economic gains due to mergers in the USA corporate sector. They used cash flow analysis [sales − (cost of goods sold + selling and administration expenses) + depreciation + goodwill expenses] and found an increase of 2.8 per cent in operating cash flow. They also found a positive correlation between this gain and share price movement.

Cornett and Tehranian (1992) give a remarkable exception to the negative findings on acquiring the firm's returns. They compared the pre- and post-merger performance of 30 large bank mergers and found positive abnormal growth. They found significant improvement in the cash flow returns to shareholders from the pursuit of both interstate and intrastate bank mergers. They determined that return on equity (ROE) of merged banks outperformed the banking industry average. When it comes to the sources of gains, they stated as follows:

> The improvement in the cash flow performance is because of improvement in the ability to attract loans and deposits, in employee productivity and in asset growth. In addition, we find significant correlation between stock market announcement period abnormal returns cash flow and accounting performance measures.

Paul et al. (2004) studied the long-term performance of 267 Canadian acquisitions, using different calendar-time approaches with and without overlapping cases. The results say that Canadian acquirers underperformed over the post-three-year-event period. Further, they observed that cash deals performed better than stock deals. Schottens and Wit (2004) investigated the announcement effect of large bank mergers in the US and European market. They used event study methodology to explore short-term wealth effects in the USA and European stock market. Their results are inconsistent with those of previous studies. Findings indicate that in the post-merger environment, M&A target companies experienced higher returns than "acquiring" firms. Additionally, these authors report the emergence of geographical differences in the post-merger returns of firms. In general, returns proved to be significantly higher for firms in the USA than in Europe. Moeller et al. (2005) analyzed 12,023 acquisitions (1980-2001).They observed that acquiring shareholders lost 12 per cent around acquisition announcement. They observed that acquisition announcements in the 1990s are profitable in aggregate for acquiring entities until 1997, but the losses incurred from 1998 to 2001 wiped out all the gains made earlier. Hackbarth and Morellec (2008) have developed a framework to analyze dynamics of stock returns and firm-level betas. They concluded that a run-up

(run-down) in the beta of bidding firm before the announcement and a drop (rise) in beta at the time of announcement when the acquiring firm has a higher (lower) pre-announcement beta than its target. Adel *et al*. (2008), using a modified market model and EGARCH(1,1) that adjusts for the violated regression assumptions of the traditional market model event studies, found that target shareholders enjoy significantly positive abnormal returns and vice versa.

In the European Union, Meeks (1977) explored the gains from merger for a sample of 233 transactions in UK (1969-1971). He analyzed the data by the return on assets (ROA) method and found underperformance in 75 per cent deals. But, announcement-related studies in continental Europe or UK found abnormal returns to both bidders and targets (Marina Martynova, 2006). In the European banking sector, Cybo-ottone and Murgia (2000) showed a significant increase in the shareholder value after the merger deal. They have used event study methodology for studying 54 acquisitions in the 13 European banking markets in European Union and Swiss market. The study covered the bank acquisitions during 1988 and 1997. Karceski and Smith (2005) established the impact of bank mergers on the welfare of the borrowers. They took the sample of Norwegian banks and found an eight per cent decline in the return of target banks' borrowers and increase in acquirer's borrowers.

Outside the USA and the European Union, Sharma and Ho (2002) viewed negative-return post-merger performance from a sample of 36 Australian companies. Rehman and Limmack (2004) investigated 94 mergers in Malaysia (1998-1992) using operating cash flow ROA and they could find positive merger gains. Dymski (2002) argues that bank mergers in developing countries are not efficiency driven; instead, this merger wave has arisen because of macro-structural circumstances and the bank's strategic motives. Therefore, it cannot be argued that social impact is positive.

In the Indian corporate sector, Pawasker (2001) analyzed 36 mergers (1992-1995) using operating cash flow returns and did not find any increase in profitability. In the year 2003, Gurmindar Arora analyzed the motives of merger in the Indian corporate sector. In addition, the study used the economic value added approach for measuring the efficiency gains and found no value addition as a result of merger. In the same line, Chakrabarti (2008) shows that Indian firms are associated with strong positive announcement effects for acquirers, but in the long term, performance is considerably worse than pre-merger performance. Kumar and Rajib (2007) identified the characteristics of merging firms in India, based on 227 acquirer and 215 targets. The results indicate that low financial leverage and unused debt capacity would be the motive for firms using multiple mergers as a strategic business tool. They pointed out that firms, which have undergone multiple mergers, have higher average sales, profits and cash flow in the past 10 years as compared to peer firms in the industry.

Ram Mohan (2005) did not observe any compelling rationale for consolidation in the Indian banking sector. He says that the Indian public sector banks improved profitability consequent to the deregulation in contrast to the experience elsewhere. He highlights the improved spread and good performance of the bank stocks in the Indian capital market and strictly rejects the scope for value maximization. Against Ram Mohan's argument, Mehta and Kakani (2006) observe that M&As in the Indian

banking sector are an important necessity. They also quoted reasons for their argument:

> Fragmented nature of Indian banking sector resulting in poor global competitive pressure and position; large intermediation costs and consequent reduction profitability, in increasing its risk profile; and meet the new stringent international regulatory reforms.

Gourlay *et al.* (2006) researched the effectiveness of economic policy reforms in the Indian banking system by examining the efficiency of mergers among scheduled commercial banks in India, over the post-reform period from 1991-1992 to 2004-2005. They used the methodology developed by Bogetoft and Wang (2005) and found that bank mergers possessed considerable efficiency gains. Jayadev and Sensarma (2007) analyzed the critical issues of consolidation in the Indian banking sector from the point view of shareholders and managers. They found that in a forced merger, the shared price of both the bidder and the target reduces. In the case of voluntary merger, results are mixed. Further, a survey of bank managers identified three critical issues in the successful merger such as valuation of loan portfolio, integration of information technology platforms and issues in human resource management.

Anand and Singh (2008) analyzed five mergers in the Indian banking sector during the period 1999-2005 using event study methodology and found positive and substantial cumulative abnormal returns. In the study, they used both single- and multi-factor models, wherein they observed that:

> The results document positive and significant increase in value to the shareholders of bidder banks, target banks and their combined portfolio. The Oriental Bank of Commerce and Global Trust Bank is exceptions.

Behr and Heid (2008) argue that the question of whether or not M&As have helped to enhance banks' efficiency and profitability has not yet been conclusively resolved in the literature. Their results indicate a neutral effect of mergers on profitability and a positive effect on cost efficiency. Kumar and Suhas (2010) analyzed bank mergers in India from a shareholder's perspective. The study showed that a merger causes an improvement in the bidder bank's returns and eroded the target bank's cumulative abnormal returns. In the operating performance part, it does not provide support to the view that mergers improve corporate performance.

Data and methodology
We considered all the bank merger deals in India (excluding bank–financial Institution mergers) in the post-reform period in which the bidder bank has paid consideration in cash or stock or a combination of both[1]. Out of the ten deals included in the sample, seven deals were voluntary merger deals, two deals were forced deals and one deal was as per the State Bank of India (Subsidiaries Banks) Act, 1959 (Table II). Data for the present analysis are taken from the annual reports of the banks, Capital Line Plus database, Centre for Monitoring Indian Economy Prowess database system, Indiastat, National Stock Exchange of India, etc.

Following the review of literature, particularly, Anand and Singh (2008) and Behr and Heid (2008), we specified the following hypothesis:

H1. The bidder banks and the target banks show similarity in prudential norms.

H2. The bidder banks and the target banks show similarity in capital structure.

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Table II.
Sample bank merger
deals

Year	Target bank	Bidder bank	Nature	Medium of exchange
2000	Times Bank	HDFC Bank	Voluntary merger	Stock deal
2001	Bank of Madura	ICICI Bank	Voluntary merger	Stock deal
2005	Centurion Bank	Bank of Punjab	Voluntary merger	Stock deal
2006	United Western Bank	IDBI Bank	Forced deal	Cash deal
2006	Lord Krishna Bank	Centurion Bank of Punjab	Voluntary merger	Stock deal
2006	Sangli Bank	ICICI Bank	Voluntary merger	Stock deal
2007	Bharat Overseas Bank	Indian Overseas Bank	Regulatory intervention	Cash deal
2008	Centurion Bank of Punjab	HDFC Bank	Voluntary merger	Stock deal
2010	Bank of Rajasthan	ICICI Bank	Voluntary merger	Stock deal
2011	State Bank of Indore	State Bank of India	SBI-associate merger	Stock deal

H3. The bidder banks and the target banks show similarity in cost-to-income ratio (CIR).

H4. The bidder banks and the target banks show similarity in diversity of earnings.

The analysis is completely based on the year-ending financial results of the banks adjacent to the date of merger announcement. The study has taken all relevant financial and strategic variables to analyze the financial profiles of the bidder and target banks. Variables can be broadly classified as size-, prudential norms- and profitability-related variables.

The merging partner's strategic relatedness holds a significant impact on the post-merger bank performance (Lubatkin, 1983). Also, the literature argues that the dissimilarity in some of the variables like diversity of earnings, size, etc. will improve the post-merger performance (Ramaswamy, 1997; Altunbas and Ibanez, 2004). Therefore, the analysis of strategic features will be useful in evaluating the consequences of bank mergers. It is assumed that the balance sheet resource allocation indicates the strategic focus of the bank, and the interpretation of the results is completely based on the previous empirical findings[2]. For this purpose, the study performed an analysis by using the framework developed by Ramaswamy (1997) and Altunbas and Ibanez (2004), and it is assumed that balance sheet resource allocation denotes the strategic focus of the banks. This analysis is done on the basis of previous empirical results on this issue. As the sample size (population too) is small and lacks normality, this study has used the non-parametric test called Mann–Whitney test and Wilcoxon matched-pair test for testing the significance of similarity between merging partners. Results of the test are given in Tables VII and VIII.

Strategic and financial similarity

As mentioned in the methodology section, we have incorporated the models suggested by Ramaswamy (1997) and Altunbas and Ibanez (2004) for the selection of the strategic variables for the study (Table III).

Due preference is also given to the factors which are more relevant in the Indian context. Tables IV and V provide the figures of these variables at the time of merger announcement. In addition to the consolidated results, a case-by-case discussion is also given in this section.

Univariate analysis
Table VI shows the univariate results of the financial and strategic variables taken for assessing the financial suitability of the bidder and target banks and the following facts can be extracted from it:

- Total assets of the bidder banks are larger than the target banks so that the results support the evidences from global context.

- Bidder banks have more diversity in their earning structure.

- Target banks are more levered than bidder banks, as their owner's equity-to-total assets ratio is less than that of the bidder banks.

- Bidder banks are more efficient than target banks, as the targets have incurred more non-interest expenses related to their total income.

- In prudential norms, the bidder banks showed better results in capital adequacy ratio and non-performing assets.

- In the matter of profitability, ROA and ROE of the bidder banks are much higher than those of the target banks.

Variable	Algorithm	Hypothesis related to post-merger performance
Relative size of the target	SOT/SOB	Dissimilarity will improve performance
Diversity earnings	OOR/TR	Dissimilarity will improve performance
Cost-to-income ratio	TC/TI	Similarity will improve performance
Financial leverage	CPT/TA	Dissimilarity will improve performance
Loans-to-deposit ratio	LN/DEP	Vital in determining post-merger asset quality
Efficiency ratio	NIE/TR	Similarity will improve performance
Return on loan	INT/LN	Similarity will improve performance
Liquidity risk	LN/TA	Similarity will improve performance

Sources: Ramaswamy (1997) and Altunbas and Ibanez (2004)

Table III.
Explanation of variables included in strategic similarity index

Variables	Bidder bank		Target bank	
	Mean	SD	Mean	SD
Total assets	1,941,341	3,246,144	94,822.77	100,941.80
Diversity of earnings	0.04	0.04	0.02	0.02
Cost-to-income ratio	0.83	0.08	0.97	0.15
Financial leverage	0.09	0.03	0.05	0.02
Efficiency ratio	0.30	0.16	0.37	0.12
CRAR	15.33	3.45	8.96	4.59
NPA	1.27	0.61	2.90	1.63
Return on assets	0.01	0.003	(0.003)	0.004
Return on equity	0.13	0.07	(0.25)	0.60

Source: Prepared based on the annual reports of the banks

Table IV.
Results of univariate analysis

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Variables	HDFC Bank – Times Bank		ICICI Bank – BoM		Centurion Bank – Bank of Punjab		Centurion Bank of Punjab – Lord Krishna Bank		ICICI Bank – Sangli Bank		HDFC Bank – Centurion Bank of Punjab		ICICI Bank – BoR	
Relative size of the target	0.76		0.37		1.06		0.23		0.01		0.21		0.05	
Diversity of earnings	0.02	0.02	0.05	0.02	0.06	0.01	0.02	0.01	0.01	0.003	0.05	0.02	0.02	0.09
Cost-to-income ratio	0.81	0.91	0.78	0.79	0.93	1.15	0.86	0.98	0.76	1.02	0.67	0.72	0.88	1.06
Financial leverage	0.08	0.05	0.09	0.06	0.13	0.05	0.09	0.07	0.09	0.01	0.07	0.07	0.14	0.05
Loans-to-deposit ratio	0.48	0.46	0.37	0.45	0.62	0.56	0.70	0.62	0.89	0.44	0.69	0.76	0.89	0.55
Efficiency ratio	0.20	0.17	0.15	0.23	0.55	0.46	0.48	0.33	0.26	0.43	0.29	0.42	0.34	0.38
Return on loan	0.27	0.21	0.18	0.16	0.16	0.14	0.13	0.13	0.02	0.15	0.15	0.12	0.12	0.16
Liquidity risk	0.32	0.40	0.30	0.37	0.50	0.50	0.58	0.55	0.58	0.41	0.52	0.61	0.49	0.48
Return on assets	0.02	0.07	0.01	0.01	0.005	(0.01)	0.01	0.001	0.01	0.01	0.01	0.01	0.01	(0.01)
Return on equity	0.24	0.16	0.09	0.21	0.04	(0.44)	0.09	0.02	0.11	(1.16)	0.21	0.08	0.07	(0.11)

Sources: Prepared by the authors based on the annual reports just preceding the year of merger announcement. Figures in the parenthesis indicate negative

Table V.
Key strategic and financial variables of merging partners in voluntary merger deals

Variables	IDBI Bank – United Western Bank		Indian Overseas Bank – Bharat Overseas Bank		State Bank of India – State Bank of Indore	
Relative size of the target	0.08		0.03		0.03	
Diversity of earnings	0.14	0.01	0.01	0.01	0.01	0.01
Cost-to-income ratio	0.88	1.18	0.85	0.98	0.89	0.90
Financial leverage	0.07	0.01	0.05	0.05	0.06	0.06
Loans-to-deposit ratio	0.13	0.62	0.69	0.63	0.79	0.77
Efficiency ratio	0.13	0.56	0.39	0.46	0.34	0.28
Liquidity risk	0.01	0.56	0.58	0.55	0.60	0.73
Return on assets	0.01	(0.01)	0.01	0.001	0.01	0.01
Return on equity	0.09	(1.50)	0.25	0.03	0.14	0.17

Strategic and financial similarities

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Table VI.
Key strategic and financial variables of merging partners in other deals

Sources: Prepared by the researcher based on the annual reports just preceding the year of merger announcement. Figures in the parenthesis indicate negative

Relative size of the target
Relative size of the target is found by dividing the balance sheet size of the target by the balance sheet size of the bidder bank. The underlying hypothesis related to relative size in domestic mergers states that the smaller the ratio, the higher the post-merger performance. The reason for this argument is that if relative size is small, the integration is easier and it will enhance cost-cutting measures like sharing of technology and elimination of overlapping branches (Ramaswamy, 1997; Altunbas and Ibanez, 2004). So, the dissimilarity will improve the performance. In most of the cases, the size of the target bank is much smaller than that of the bidder banks which resulted in low relative size for the target banks.

However, in the Centurion Bank–Bank of Punjab deal, the balance sheet size of the target bank is larger than that of the bidder bank. In the Housing Development Finance Corporation (HDFC) Bank–Times Bank deal, the relative size of Times Bank is 0.76 which holds the second position in the list. It is very evident that most of the bidder banks see merger as a means to penetrate areas where they do not have much presence. For instance, in Industrial Credit and Investment Corporation of India (ICICI)– Bank of Madura (BoM) deal, out of the 263 branches of BoM, 182 were in Tamil Nadu (southern part of India) and in ICICI Bank–Sangli Bank deal, out of 198 branches of Sangli Bank, 158 were in Maharashtra only (western part of India). In ICICI–Bank of Rajasthan (BoR) merger, the target bank had a branch network of 466 branches, out of which 280 were in Rajasthan (northern part of India). This dissimilarity will improve the performance.

Prudential norms
H1, which states that the bidder banks and the target banks show similarity in prudential norms, is proposed and tested related to this topic.

If we go through the loan-to-deposit ratios of merged entities in the financial year after 2005, we can see the impact of "Report of the Committee on Banking Sector Reforms" (Narasimham, 1998). In all the cases, the ratio is higher than 60 per cent due to the substantial reduction of Cash Reserve Ratio (CRR) = Ration of Reserves to be maintained by the commercial banks with the reserve bank except in the case of Sangli Bank and Industrial Development Bank of India (IDBI) Bank. Before 2005,

loan-to-deposit ratio of the banks was below 40 per cent. Further, loan to book value of asset ratio also points to the same. After the implementation of Basel II norms, it is better to take capital to risk-weighted assets ratio (CRAR) which is very important from the prudential regulatory point of view, to measure the liquidity position of the banks. CRAR of the target bank is higher than that of target banks and some of the targets showed CRAR to be even below 2 per cent. In non-performing assets also, the target banks showed very bad results, and this will harm the post-merger performance. Mann–Whitney test statistics reject the hypothesis, and it can be stated that banks are dissimilar in prudential norms, affecting post-merger performance adversely (Ramaswamy, 1997; Altunbas and Ibanez, 2004).

Financial leverage

The strategic management literature argues that dissimilarity in capital structure will enhance the performance as the combination of indifferent asset structures result in the optimum capital structure (Altunbas and Ibanez, 2004).

Here, we test *H2*, which states that the bidder banks and the target banks show similarity in capital structure.

As compared to other industries, banks and FIs have low-geared capital structure due to the regulatory requirements. To understand the financing pattern of the merging entities, the study has used the capital/asset ratio. The numerator of the equation includes reserves and surplus also for the present study. As per corporate finance literature, an optimal capital structure will increase the earnings per share (EPS) and will cause shifting of returns from bondholders to shareholders (Modigliani and Miller, 1958; Modigliani, 1988). Tables IV and V show that target banks are more levered than bidder banks, and this will reduce the borrowing capacity of the combined entity in the post-merger period. However, it will help to increase the ROE of the combined entity, as the proportion of capital in the capital structure of the target banks is low as compared to that of the bidder banks. As Mann–Whitney U test is less than the table value ($U = 23$), the study rejects the above hypothesis.

Cost-to-income ratio

To address the efficiency issue, the study has taken two important measures such as CIR and efficiency ratio. CIR is also known as the operating margin. It measures how costs are changing compared to the banks' income. It provides an outlook of the firms' cost-controlling strategies, and a lesser ratio indicates the firm's efficiency in cost-cutting measures. The existing studies suggest that the dissimilarity in this aspect will harm the performance as CIR is inversely related to the profitability of the banks and consequently the operational efficiency of the bank (Burger and Juergen, 2008). Here, we test *H3*, which states that the bidder banks and the target banks show similarity in (CIR).

In all cases, CIR is higher for target banks, and it indicates the potential problems in the efficiency of the combined entity[3]. As Mann–Whitney U test is less than the table value ($U = 23$), the study rejects the above hypothesis (Tables VII and VIII).

Similarly, some of the target bank's total cost exceeds their total income (Bank of Punjab, Sangli Bank, BoR and United Western Bank [UWB]) which signals that they had used other funds to finance their interest and other expenses. The second measure is efficiency ratio. The efficiency ratio is found by dividing the non-interest expenses by

Financial variables	ROE	ROA	NPA	CRAR	ER	FL	CIR	DIV	TA
Mann – Whitney U	23.500	25.000	15.000*	11.000*	36.000	11.000*	18.000*	28.500	17.000*
Wilcoxon W	78.500	80.000	70.000	66.000	91.000	66.000	73.000	83.500	72.000
Z	−2.007	−2.073	−2.646	−2.948	−1.059	−2.992	−2.421	−1.696	−2.495
Asymptotic significance (two-tailed)	0.045	0.038	0.008	0.003	0.290	0.003	0.015	0.090	0.013
Exact significance [2 × (one-tailed Significance)]	0.043[a]	0.063[a]	0.007[a]	0.002[a]	0.315[a]	0.002[a]	0.015[a]	0.105[a]	0.011[a]

Note: *Indicates significant difference

Table VII.
Mann–Whitney test statistics

Variables	Grouping variable	N	Mean rank	Sum of ranks
Return-on-equity	Target banks	10	7.85	78.50
	Bidder banks	10	13.15	131.50
	Total	20		
Return-on-assets	Target banks	10	8.00	80.00
	Bidder banks	10	13.00	130.00
	Total	20		
Non-performing assets	Target banks	10	14.00	140.00
	Bidder banks	10	7.00	70.00
	Total	20		
Capital adequacy ratio	Target banks	10	6.60	66.00
	Bidder banks	10	14.40	144.00
	Total	20		
Efficiency ratio	Target banks	10	11.90	119.00
	Bidder banks	10	9.10	91.00
	Total	20		
Financial leverage	Target banks	10	6.60	66.00
	Bidder banks	10	14.40	144.00
	Total	20		
Cost-to-income ratio	Target banks	10	13.70	137.00
	Bidder banks	10	7.30	73.00
	Total	20		
Diversity of earnings	Target banks	10	8.35	83.50
	Bidder banks	10	12.65	126.50
	Total	20		
Total assets	Target banks	10	7.20	72.00
	Bidder banks	10	13.80	138.00
	Total	20		

Table VIII.
Ranks of different financial and strategic variables

total income of the banks. Here too, a higher ratio shows inefficiency. Banks showed mixed results, wherein it is higher for target banks which will harm the post-merger performance. Only Centurion Bank and UWB showed a figure higher than 50 per cent which is not at all good. The main reason for UWB's bad performance was their increased provisions and contingencies. At the same time, it can be argued that high

non-interest expenses depict the investment in technology and may improve the post-merger performance.

Diversity of earnings
The earnings diversification strategy indicates the bank's exposure to the components of revenues other than interest income. In the modern banking era, the income from other sources measures the bank's efficiency to tap financial service market and other segments of income such as income from commissions and treasury operations. Here, we specify *H4*, which states that the bidder banks and the target banks show similarity in diversity of earnings.

The hypothesis is that dissimilarity in the sources of revenues of banks will enhance post-merger performance (Ramaswamy, 1997; Altunbas and Ibanez, 2004). Diversity of earnings is the ratio between non-interest incomes and total assets. The higher the ratio, greater the post-merger performance. From Tables VII and VIII, it is very clear that non-interest component of income is higher for HDFC Bank, IDBI Bank, Centurion Bank, Centurion Bank of Punjab, ICICI Bank, Sangli Bank and BoR as compared to their partners and this will help to create synergies in the post-merger period. Mann–Whitney U is greater than the table value ($U = 23$), we accept the above hypothesis.

Profitability
ROE and the ROA of Bank of Punjab, Sangli bank, BoR and UWB showed negative figures. So this dissimilarity will thin the ROA and ROE of the combined entity. The reason for this argument is that if the bidder bank already possesses a good level of profitability and if the target's earnings capacity is low, it will cause a dilution in the combined profitability initially (Vander vennet, 2002). Only in HDFC–Times Bank deal, the target bank showed higher ROA compared to that of the bidder bank. In other cases, ROA of the banks are similar, and it is one percentage of the total assets. In many cases, although the ROA of the bidder banks is the same as that of the target banks, ROE of the target banks is higher than that of the bidder banks. The reason is that targets are more levered than bidders.

The similarity of banks in terms of diversity of earnings stream will not give any advantage in the post-merger period, as it will not provide any diversification in the income structure of the combined entity. Regarding the profitability of the banks, results are different. However, it can be stated that the poor profitability of some of the targets will thin the performance of the combined entity in the post-merger period.

Conclusion
As expected, in the case of size-related variables, namely, market capitalization, balance sheet size, deposits, advances and owner's equity, the bidder banks are larger than the target banks as similar to the global results. Further, it is very clear that all these variables have shown very high level of dispersion for the bidder banks and the target banks. Capital adequacy ratio of the bidder banks is higher than the target banks, with mean values of 15.34 and 8.96 per cent, respectively. The target banks mean value of CRAR is lower than the minimum ratio prescribed by the prudential norms. In NPAs, the bidder bank's books are fairer than the target banks' books and their consistency is also good. Bidder banks have better profitability as compared to target banks. Bidder banks have shown better results in terms of quantum of profits, i.e. net profit after tax,

EPS, ROA and ROE in the pre-merger scenario. Further, Mann–Whitney test shows that merging partners are dissimilar in most of the financial and strategic aspects, and it will dilute the post-merger performance of the combined entity.

Notes

1. In the 25 merger deals occurred in the post-liberalization period, there were no considerations in 15 deals so that such deals are excluded. For deciding the population, the study has taken a criteria that at least one party, either bidder or target bank, should be an Indian bank.

2. The existing literature suggests that strategic similarity of merging partners will improve the post-merger performance. In all such studies, researchers assumed that balance sheet resource allocation represents the strategic focus of the banks (Ramaswamy, 1997; Altunbas and Ibanez, 2004).

3. We have included fee-based expenses and fee-based incomes also while calculating the CIR.

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Corresponding author

Justin Paul can be contacted at: profjust@gmail.com

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