CONSOLIDATION IN INDIAN FINANCIAL SECTOR: DOES IT MAKE THE SECTOR VULNERABLE TO FINANCIAL CONTAGION?

Priya Bhalla[1]

In the wake of continuously changing forces of globalisation and deregulation, the financial sector entities are increasingly involved in merger and acquisition. The present study attempts to evaluate the impact of type of merger and acquisition deal (such as geographical dimension i.e., domestic or cross-border; motive, i.e., regulatory or market driven; etc.) on the performance of financial entities in India. Specifically, the model specification enables separation of short, medium and long term effects. For this purpose, the post-merger and acquisition performance of acquiring firms is regressed on a set of independent variables using random effects panel data regression technique. The analysis reveals that there has been a deterioration of capital, liquidity and asset quality and increase in profits (not robust) and size (long run) of the acquirers. The decline in asset quality puts the financial system at the risks of financial contagion, calling for effective regulation.

Keywords*: Mergers & Acquisitions, Financial Entities, Performance, CAMEL Indicators, Financial Contagion, Regulation*

JEL classification: E44, G21, G34

1. Introduction

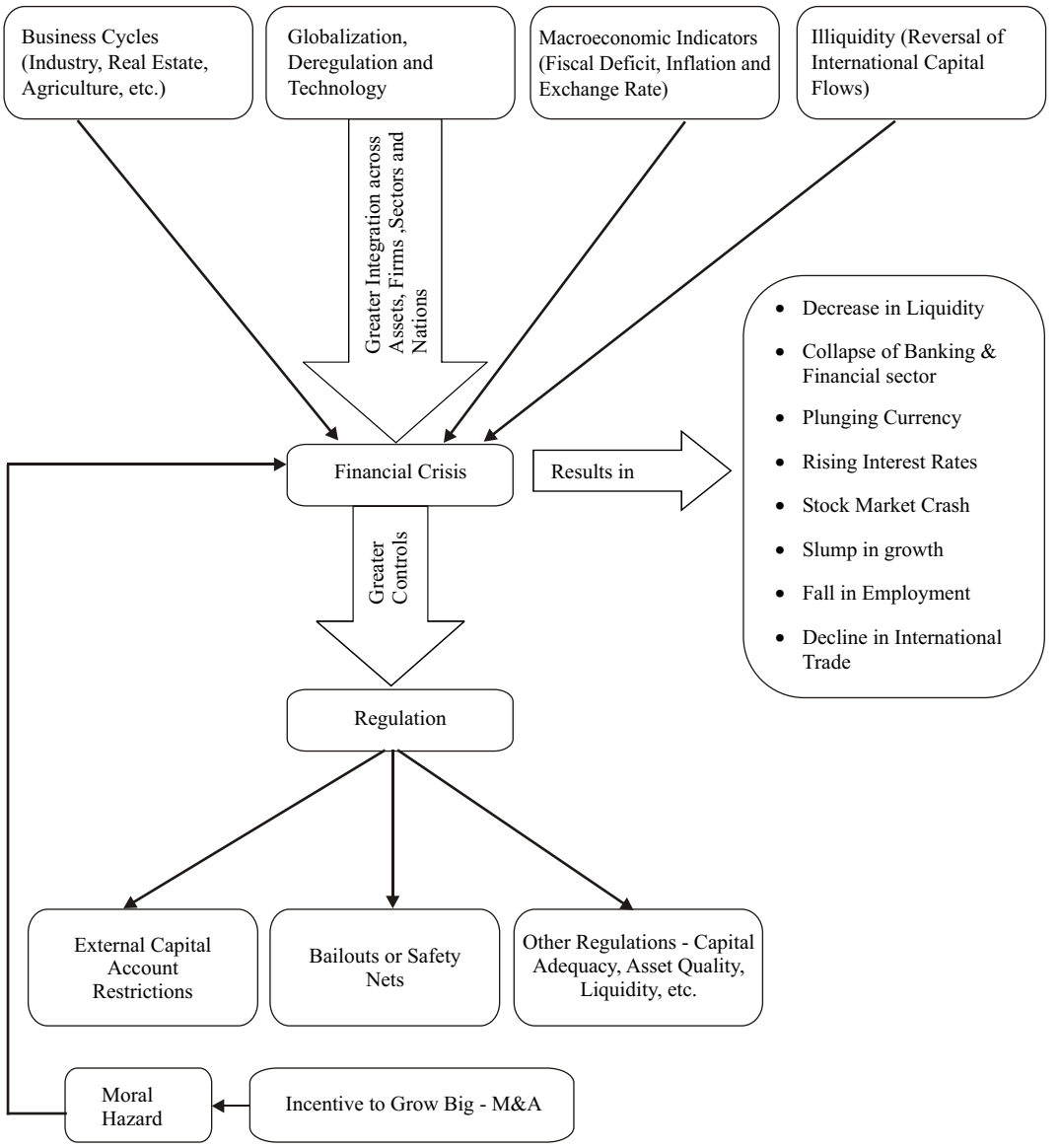
The financial sector plays a significant role in the smooth allocation of funds for investment. Various developments have resulted in sweeping transformation of this sector over time. As a result of the increasing significance of financial sector in an economy, there is a renewed global interest in these entities. The researchers are exploring a number of fundamental questions, particularly, what has been the change in the structure of these entities as a result of various restructuring activities such as mergers and acquisitions (*M&A*).[2] Have they become bigger, complex, volatile and vulnerable than before?

It has been long maintained that the financial markets are extremely different from other markets (Stiglitz *et al.*, 1993), mainly, due to the threat of market failure arising from the existence of imperfections such as information costs and asymmetric information resulting in moral hazard and agency problems (Thiel, 2001; Gomes, 2004; Kohn, 2009). Moreover, the pressures of the 'maturity mismatch' between assets and liabilities make these

[1]Assistant Professor, Department of Economics, Moti Lal Nehru College (E),University of Delhi,India

financial entities highly susceptible to crisis. Essentially, their assets have a long term maturity (such as mortgages) while their liabilities are of short term maturity (such as deposits payable on a short notice).

Figure 1: A Theoretical Approach to Financial Contagion



Further, the failure of one bank could be contagious and likely to precipitate runs on other sound entities thereby creating wider banking panics (Kohn, 2009). Due to highly integrated products, firms and markets made possible by rapid developments in technology and deregulation (Stiglitz *et al.*, 1993; Rangarajan, 2009), this financial distress may spread from one asset to another, one firm to another, one market to another, and one nation or geographical region to another leading to occurrence of 'financial contagion' (Kolb, 2011). Figure 1 sketches the causes, channels of transmission and impact of contagion in the economy.

The forces of globalization, deregulation and improvements in technology have made the assets, firms, markets and nations highly interdependent, increasing the potential for contagion. In this context, it is imperative to emphasize the inter-linkage between macroeconomic stability (as reflected in sustained economic growth, modest rates of inflation, appropriate level of fiscal and revenue deficit, orderly conditions in interest rates, exchange rates and balance of payments) and financial stability (Rangarajan, 2009).

In order to reduce the incidence and severity of recurring financial crisis, central banks regulate the financial sector, especially large banks and financial entities in almost all economies. Due to the fear of systemic risk, the government in all countries provide a 'safety-net' to rescue or 'bailout' these large financial entities considered 'too big to fail'. Besides, the large financial entities may wield significant economic power and influence the working of the economy by restricting the supply of credit to certain borrowers. This raises certain relevant questions. Do these safety-nets provide additional incentives for the firms in the financial sector to grow big either organically or inorganically through mergers and acquisitions Does the rising *M&A* activity in this sector point to greater volatility and instability calling for more effective regulation? Further, in this context, are these big global entities a cause of concern?

With this backdrop, it is important to examine the financial entities that have been actively engaged in acquisitions in order to consolidate and grow big at a rate much faster than intrinsic growth strategies would permit them. In order to analyze these effects in Indian financial sector, the study attempts to evaluate the impact of type of *M&A* deal (such as geographical dimension- domestic or cross-border; motive- regulatory or market driven; etc.) on the financial entity's performance. Specifically, the study attempts to separate short, medium and long term effects on the performance.

2. Literature Survey

An important issue in most *M&A* related studies is whether mergers are a means of enhancing performance. At the outset, it must be pointed out that the performance-based empirical studies are broadly of two kinds: Stock Market Event Studies (Agarwal *et al.*, 1992; Tourani-Rad and Van Beek, 1999; Liargovas and Repousis, 2011) and Accounting Data Studies (Mueller, 1980; Berger and Humphrey, 1992, 1997; Healy *et al.*, 1992; Rhoades, 1994; Cabanda and Pascual, 2007). The former approach assesses performance of the firms by measuring stock market response to merger announcements (Pautler, 2001).

However, the stock market or event studies as a performance indicator have been widely criticized (Bradley *et al*., 1988; Jensen, 1988; Healy *et al.,* 1992; Chatterjee and Meeks, 1996). Moreover these studies generally assess the impact of *M&A* in the immediate period, while the literature suggests that *M&A* may have a long term impact. Furthermore, restricting the sample to only listed firms would result in a smaller dataset for analysis. Accordingly, the present study uses accounting ratios to investigate the impact of *M&A*.

Partly due to the widely different methodology, the results of various studies conducted on mergers worldwide are controversial and have not been able to reach a consensus. Some of the existing studies have examined the relation between *M&A* and performance, by comparing the performance of the combined entity in the post-merger with the weighted average of separate firms in the pre-merger (Healy *et al.*, 1992; Focarelli *et al.*, 2008; Devereux *et al*., 2006; Georgiev and Burghof, 2007, among others). However, in such studies the increase in combined weighted average of performance is less likely to get captured if the target is relatively small compared to the acquirer (Langhe and Ooghe, 2001).

Due to this difficulty, many other studies have focused the analysis only on acquirers, as in mergers target cease to exist. Therefore, a better approach may be to assess the performance of the acquiring firms in a controlled framework. Accordingly, in the present study the analysis is based on comparing the acquiring firm's performance in the two periods (pre-and post-*M&A*) with a random control sample of non-participating firms. Further, many of these studies have confined to only large acquisitions. This could lead to problems as size is a crucial determinant of probability of acquisition in *M&A* literature.

Some existing studies have confined the analysis to listed firms (Hagendorff and Keasey*,* 2009) or the firms that have been engaged in single mergers (Mantravedi and Reddy, 2008). These studies based on either of the selection criterion are likely to suffer from the problem of selection bias that could lead to spurious conclusions (Peristiani, 1997).

Accordingly, the present study does not adopt any such selection mechanism and the analysis is based on all those firms for which complete information is available rather than a segment of the population.

Thus, the studies on post-merger performance of the firms have produced mixed results. Based on the review of literature across indicators, methodologies, industries and countries, it has been found that some researchers observe gains resulting from mergers. These include Avikran (1999) based on Australian banks and Cummins *et al.* (1999) on US life insurance firms. Avikran (1999) found the acquiring banks to be more efficient than the target banks. In addition, the study provides evidence that the acquiring banks do not always maintain their pre-merger efficiency but during the deregulated period overall efficiency improved. This indicates that merger motives may not be time invariant.

In contrast to the findings of these studies, some studies found no significant predictable effect on performance (Fauzias *et al.,* 2006 on Malaysian banks). Lopez *et al*. (2006) in their analysis of 94 Italian banks (involved in *M&A* during 1980-90) found that mergers yield no significant improvements in post-merger performance. While some others found worsening of performance (Beena, 2008 on Indian manufacturing firms; Mishra and Chandra, 2010 on Indian pharmaceutical firms) and some have argued that benefits may vary according to the type of merger (Hagendorff and Keasey, 2009).

While the evidence on post-merger impact across the globe is ambiguous, at the same time, the parallel literature in India is limited. A number of researchers have focussed on case study based methodology, mainly providing qualitative assessment of performance. Very few studies have attempted to empirically assess the impact on performance, especially using rigorous econometric techniques. In a study on 115 manufacturing firms in India, Beena (2008) attempts to explain the relationship between firm's performance and *M&A* using accounting based measures (such as price-cost margin, rate of return, shareholders' profit, dividend per equity, debt-equity ratio, export-intensity, R&D intensity, capacity utilization, product market share and the Herfindahl Index of Concentration). The study does not find any significant evidence of improvement in the performance. A similar finding was derived in another study by Mishra and Chandra (2010) on 52 Indian pharmaceutical firms for the period 2000-08. Specifically, it was found that *M&A* did not have any significant impact on the profitability.

Mantravadi and Reddy (2008) examined the pre- and post-merger financial ratios of public limited and traded firms during 1991-2003. The study makes a number of simplistic

assumptions such as considering only mergers (and not acquisitions), omitting multiple merger cases, cross-border deals and BIFR registered sick companies. Using the two sample t-test, it is found that mergers in India have caused a decline in profitability, return on net-worth and return on capital employed. The findings also point to variations in impact on performance following mergers of different kinds, though one does not assess it econometrically.

In addition, studies based on firms in different sectors indicate that the impact on performance may vary across the sectors (for instance, Mantravadi and Reddy, 2008 and Selvam *et al.*, 2009). However, these studies have mostly failed to appropriately control for different sectors. Moreover, these studies have utilized simple statistical tests such as t-ratios or Wilcoxon signed rank tests and suffer from lack of control sample. These studies have also been deficient in the use of advanced econometric techniques, except Gourlay *et al.* (2006) and Kaur and Kaur (2010). Both these studies have used stochastic frontier analysis but restrict their analysis to only scheduled commercial banks, providing an incomplete analysis of consolidation activity in the financial sector.

Finally, among the myriad studies assessing the impact of *M&A* on performance worldwide, there is a paucity of studies that relate the performance differentials to heterogeneity of acquiring firms (such as age, listing classification, or type of financial intermediation such as banking or non-banking, etc.) and *M&A* (such as relatedness of merging partners prior to *M&A*, issue of nationality - cross border or domestic deals, motive - consolidation or diversification, etc.). Accordingly, it would be valuable to relate the performance of acquiring firms to the characteristics of the firms and type of *M&A* deal they are involved in. This is so because each *M&A* deal is likely to create different synergistic conditions for the entities involved in the process. Since there is little evidence on variation in performance according to type of firm and *M&A* in India, particularly the financial sector, the present study attempts to fill the gap in literature.

3. Research Methodology

The model attempts to evaluate the impact of type of *M&A* deal on firm's performance. The specification enables separation of short, medium and long term effects. For this purpose, the post-*M&A* performance of acquiring firms is regressed on a set of independent variables using random effects panel data regression technique. The following equations are estimated (1-7).

$$CAP_{it} = \alpha_0 + \alpha_1 PreM\&AY_{it} + \alpha_2 STMERGER_t + \alpha_3 MTMERGER_t + \alpha_4 LTMERGER_t + \alpha_5 M\&AType_i + \alpha_6 FIRMTYPE_i + \varepsilon_{it} \quad (1)$$

$$DDP_{it} = \beta_0 + \beta_1 PreM\&AY_{it} + \beta_2 STMERGER_t + \beta_3 MTMERGER_t + \beta_4 LTMERGER_t + \beta_5 M\&AType_i + \beta_6 FIRMTYPE_i + \epsilon_{it} \quad (2)$$

$$HHI_{it} = \gamma_0 + \gamma_1 PreM\&AY_{it} + \gamma_2 STMERGER_t + \gamma_3 MTMERGER_t + \gamma_4 LTMERGER_t + \gamma_5 M\&AType_i + \gamma_6 FIRMTYPE_i + \pi_{it} \quad (3)$$

$$INEFY_{it} = \theta_0 + \theta_1 PreM\&AY_{it} + \theta_2 STMERGER_t + \theta_3 MTMERGER_t + \theta_4 LTMERGER_t + \theta_5 M\&AType_i + \theta_6 FIRMTYPE_i + \sigma_{it} \quad (4)$$

$$PRT_{it} = \vartheta_0 + \vartheta_1 PreM\&AY_{it} + \vartheta_2 STMERGER_t + \vartheta_3 MTMERGER_t + \vartheta_4 LTMERGER_t + \vartheta_5 M\&AType_i + \vartheta_6 FIRMTYPE_i + \tau_{it} \quad (5)$$

$$LIQ_{it} = \mu_0 + \mu_1 PreM\&AY_{it} + \mu_2 STMERGER_t + \mu_3 MTMERGER_t + \mu_4 LTMERGER_t + \mu_5 M\&AType_i + \mu_6 FIRMTYPE_i + \varphi_{it} \quad (6)$$

$$SIZE_{it} = \rho_0 + \rho_1 PreM\&AY_{it} + \rho_2 STMERGER_t + \rho_3 MTMERGER_t + \rho_4 LTMERGER_t + \rho_5 M\&AType_i + \rho_6 FIRMTYPE_i + \partial_{it} \quad (7)$$

Dependent Variables

In the equations (1-7), the dependent variables are the performance indicators given by *CAMEL* ratios (Capital adequacy, Asset quality, Management, Earnings and Liquidity) in the post-*M&A* period. These ratios are commonly used by regulators to assess performance of financial entities (Rangarajan, 2009). Additionally, we also include *SIZE* as it has been observed to be one of the highly significant variables. The capital structure (*CAP*) of a firm is measured as paid-up equity capital/total assets. The asset quality (*DDP*) is assessed by the ratio of doubtful debts to total loans. The inefficiency ratio (*INEFY*) is measured by total expenses incurred to total income earned. The extent to which a firm has diversified its portfolio (*HHI*) has been measured by loans to total earning assets. The profitability (*PRT*) is measured by net interest income to total loans. The liquidity position (*LIQ*) is assessed by ratio of cash and bank balances and marketable securities to total assets. Finally, the size of a firm (*SIZE*) is measured as logarithm of total assets.

Independent Variables

Initial Conditions: It is expected that a firm's post-*M&A* performance would be highly correlated to its pre-*M&A* performance ($PreM\&AY_{it}$). The inclusion of this term enables to control for adjustment effects of the past shocks on the explained variables, thereby preventing the difficulties arising from potential omitted variable bias (Georgiev and Burghof, 2007). The pre-*M&A* performance is based on average of three years prior to *M&A*.

Merger Timing Dummies: It is expected that the acquiring firm may not experience substantial changes in the year immediately following *M&A*, as the restructuring process within the firm would have just begun (Kwoka and Pollitt, 2010). In order to capture these dynamic effects associated with *M&A*, three merger related time dummies

STMERGER, MTMERGER and LTMERGER are included to capture the short term, medium term and long term impact of *M&A* on performance of acquiring firms respectively. The dummy variable *STMERGER* takes value 1 in three years following the event of *M&A* (i.e. 1 to 3 years after *M&A*). In the similar manner, *MTMERGER and LTMERGER* takes value 1 for 4 to 6 years and 7 to 9 years after *M&A* takes place respectively.

Type of *M&A* Deal: The empirical literature suggests that characteristics of the merging partners in a particular deal *(M&AType)* may be critical in explaining the post-*M&A* outcomes (Pilloff, 1996; Kruse *et al.*, 2007; Hagendorff and Keasey, 2009; Bena and Li, 2012). It is likely that different synergistic benefits may emanate when different kinds of firms are paired together. Accordingly, a set of characteristics related to the type of *M&A* activity such as geographical scope (i.e. domestic versus cross-border deals, as measured by *CROSSBORDER*), inducement behind the mergers (i.e. government or market driven, as measured by *REGULATORY*), number of firms involved (i.e. involvement of more than two firms in an *M&A* deal, *MULTIPLEFIRMS*), a firms expansion strategy (i.e. activity focussed or product diversifying *M&A*, as measured by *DIVERSIFICATION*) and affiliated partners (i.e. firms that are affiliated prior to *M&A*, as measured by *RELATEDFIRMS*) have been incorporated.

Based on these types of *M&A* it is hypothesized that all other things being equal, the type of *M&A* is likely to have a significant impact on post-*M&A* performance. All other things being equal, the firms that are repeatedly involved in *M&A* are involved in cross-border deals, involve acquiring more than two firms in a single deal and are related prior to *M&A* are likely to show better performance following *M&A*. In contrast, the firms that are involved in regulatory mergers are not likely to demonstrate higher performance (Table 1).

Table 1: Characteristics of *M&A* Deals

Variable	Notation	Measurement	Expected Sign
Process of Acquisition (Merger or Acquisition)	*MERGER*	*MERGER*=1 if firm is involved in merger and 0 if acquisition	+/-
Involvement in Multiple *M&A* deals	*REPEATED*	*REPEATED*=1 if firm is repeatedly involved in *M&A* and 0 otherwise	+
Type of Firms Involved	*DIVERSIFICATION*	*DIVERSIFICATION*=1 if *M&A* takes place amongst different firms such as banks and NBFC and 0 otherwise	+/-
Nationality of Firms	*CROSSBORDER*	*CROSSBORDER*=1 if deals are across national borders and 0 otherwise	+

Variable	Notation	Measurement	Expected Sign
Inducement behind *M&A*	*REGULATORY*	*REGULATORY*=1 if *M&A* are government induced and 0 otherwise	-
No. of Firms Involved in *M&A* deal	*MULTIPLEFIRMS*	*MULTIPLEFIRMS* = 1 if more than two firms are involved in a deal and 0 if only two firms are involved	+
Relatedness of Firms	*RELATEDFIRMS*	*RELATEDFIRMS* = 1 if firms belong to same group or if one is a subsidiary of other and 0 otherwise	+

4. Data

Since there is no comprehensive database available on *M&A* in India, the data for the study is mainly compiled from the several available sources of information on *M&A* in India:

- Mergers & Acquisitions database compiled by Centre for Monitoring Indian Economy (CMIE)
- Prowess database compiled by CMIE
- Company News and Notes (CNN), a publication by Department of Company Affairs (DCA)
- Securities and Exchange Board of India (SEBI)

The present study includes both merger and acquisition transactions that take place within the financial sector. The analysis in this model is based on all the available post-*M&A* years on 89 acquiring firms. This results in an unbalanced panel data (n=1, 2….14) on 89 firms resulting in 606 observations. There are certain adjustments made to the dataset to estimate these equations. For each firm, the available post-*M&A* years are considered. Of course, the number of observations varies for each firm as the year of *M&A* is different. For example, the firms that acquire during 1996-97, a maximum of 14 years of data is available after *M&A* (t=14 years), while in the case of firms that acquire in 2010, only a single year's data would be available (t=1) after *M&A*. Further, the *M&A* that take place after 2011 have not been considered due to lack of financial data consequent to *M&A*.

5. Results and Analysis

Table 2 presents the long term performance dynamics associated with *M&A*.

Table 2:Estimates of Random Effects Panel Regression on Post-*M&A* Performance of Acquiring Firms (1998-2011)

Dependent Variable: Post-*M&A CAMEL* ratios										
Independent Variables	**CAP**	**DDP**	**DDP2**	**HHI**	**PRT**	**PRT2**	**INEFY**	**LIQ**	**LIQ2**	**SIZE**
Pre M&A	0.57*** *3.46*	1.41*** *5*	-0.01 *-0.59*	0.51*** *8.07*	-0.04 *-0.09*	0.15*** *3.23*	0.03 *0.38*	-0.1 *-0.19*	-0.07 *0.27*	0.79*** *7.6*
STMERGER	-0.43*** *-4.33*	0.08 *1.17*	0.002 *0.98*	0.03 *0.58*	18.35 *0.67*	1.61** *2.00*	-0.37 *-0.47*	-0.06 *-0.99*	-0.17*** *-2.65*	-0.14 *-0.56*
MTMERGER	-0.37*** *-3.9*	0.08 *1.27*	0.003 *1.4*	-	-8.98 *-0.56*	1.62** *2.10*	0.11 *0.16*	-0.07 *-1.48*	-0.14** *-2.48*	0.17 *0.79*
LTMERGER	-0.32*** *-3.42*	-	0.001 *0.75*	-0.08 *-1.48*	10.63 *0.69*	1.43* *1.85*	0.01 *0.01*	-0.08 *-1.67*	-0.13*** *-2.4*	0.37** *1.91*
NEW	-0.13** *-2.01*	-0.13 *-1.51*	0.002 *1.31*	0.18*** *3.42*	23.64 *1.19*	-0.02 *-0.32*	0.13 *0.16*	0.2 *-1.83*	0.08 *0.98*	0.46 *1.24*
BANK	0.15** *-2.01*	-0.15 *-1.26*	0.006** *2.32*	-	26.59 *1.54*	-0.01 *-0.04*	0.21 *0.60*	-	-	0.46 *0.81*
LISTED	-0.04 *-1.13*	0.18 *1.3*	0.007*** *2.34*	0.21*** *3.59*	2.9 *0.17*	0.04 *0.34*	-0.93* *-1.63*	-0.20* *-1.83*	-0.12** *-1.91*	0.47 *1.21*
REPEATED	0.4*** *2.44*	0.71 *1.17*	-0.01 *-2.37*	-0.25 *-0.62*	-259.33 *-1.34*	-2.67** *-2.39*	0.59 *0.44*	-0.24 *-1.03*	-0.07 *-0.42*	0.79* *1.62*
*REPEATED*SIZE*	-0.05*** *-3.47*	-0.05 *-1.22*	0.001** *2.07*	0.05 *1.23*	17.98 *1.3*	0.22*** *2.37*	-0.09 *0.44*	0.01 *0.58*	0.00 *0.19*	-
MERGER	0.06 *1.33*	0.001 *0.02*	0.004*** *2.59*	-0.12* *-1.67*	-44.2 *-1.17*	-0.04 *-0.33*	0.41 *1.05*	-0.02 *-0.15*	0.02 *0.27*	-0.24 *-0.59*
DIVERSIFICATION	0.02 *0.24*	0.01 *0.4*	0.01** *2.19*	-	31.13 *1.3*	0.20 *1.41*	-0.05 *-0.16*	-	-	-0.55 *-1.28*
CROSSBORDER	-	0.19 *1.42*	0.014*** *3.35*	-	-18.8 *-1.59*	0.36** *2.19*	-1.18** *-2.04*	-	-	1.30** *2.00*
REGULATORY	0.04 *0.66*	-0.08 *-1.5*	-0.004 *-1.18*	-	27.32 *1.29*	-0.18 *-0.95*	0.04 *0.12*	-	-	0.35 *0.68*
MULTIPLE FIRMS	-0.14*** *-2.37*	-	0.34*** *3.03*	-	-6.43 *-0.3*	-0.66* *-1.80*	1.16 *1.03*	0.05 *0.25*	-0.05 *-0.41*	0.58 *0.78*
RELATED FIRMS	0.06 *1.21*	0.05 *1.47*	0.004** *2.05*	0.14*** *3.41*	33.44 *1.52*	0.00 *-0.01*	-0.17 *-0.36*	-0.2** *-2.26*	0.00 *0.07*	-0.11 *-0.28*
PERIOD1997-02	-	-	-0.0002 *-0.11*	0.04 *0.51*	-	0.36 *1.54*	-	-	-0.10 *-1.53*	0.30 *1.36*
PERIOD2003-07	0.14** *1.96*	0.02 *1.24*	0.002 *1.21*	-0.13** *-2*	-80.45 *-1.25*	0.11 *1.55*	0.97 *1.25*	0.2*** *2.68*	-	-0.22** *-2.05*
PERIOD2008-11	0.07 0.93	-	-	-	-56.65 -1.21	-	0.64 0.99	0.14** 2.16	-0.02 -0.60	-
Constant	0.39** *2.1*	-0.13 *-1.15*	-0.01** *-2.29*	0.12** *-1.85*	32.54 *0.8*	-1.68** *-2.08*	1.16 *0.98*	0.4** *2.38*	0.34*** *2.71*	2.32*** *2.62*
No. of Observations	312	77	101	41	155	264	339	144	148	349
No. of Groups	53	14	20	8	26	45	57	23	24	59
R square Overall	0.47	0.95	0.84	0.96	0.17	0.41	0.05	0.39	0.35	0.85
Wald Chi-Square	119.51	59.12	87.97	1130.23	29.63	54.95	15.02	41.26	24.32	3775.37
p value	0	0	0	0	0.03	0	0.59	0	0.03	0

Note: All estimations are robust; Z values are reported in Italics below the coefficient values;
*** significant at 1 per cent level, ** significant at 5 per cent level and * significant at 10 per cent level.

To check for the robustness of our findings several additional ratios are investigated. Since the data on total assets is available for larger number of observations than that of total loans, a new measure of asset quality (*DDP2)* has been computed as doubtful debts provision to total assets[3]. Similarly, to check for robustness of other financial ratios, additional indicators of liquidity (*LIQ2)* and profitability (*PRT2)* are computed as cash and bank balances/total assets and net interest income/total income respectively. The equations where significant coefficients are obtained have been reported.

As is expected, the performance indicators are positively related to their pre-*M&A* value (except *DDP2, PRT, INEFY, LIQ* and *LIQ2*). The estimation results suggest that in the short and medium term (given by *STMERGER and MTMERGER*), it is likely that there would be deterioration of capital and liquidity (only *LIQ2*) and improvement in profitability (only *PRT2*). The negative impact on capital and liquidity especially in the short term could be directly attributed to sudden increase in legal, personnel and other restructuring and integration expenses, although this should have reflected in the profitability ratio as well. Likewise, in the long term, *M&A* are likely to adversely affect the capital structure and liquidity position (only *LIQ2*) of the acquirers. However, *M&A* are seen to increase the profitability and size of the acquirers in the long run.

On the whole, this dynamic performance analysis of acquirers suggests that there is evidence of deterioration in capital and liquidity over time. These findings are similar to those derived in the short run (Bhalla, 2013), suggesting that the findings of the studies in the short term may also be valid in the long term. In contrast, the firms that have been highly active in *M&A* are better-off than one-time acquirers in terms of capital ratio as the coefficient of *REPEATED* in *CAP* regression is positive. Further, the highly active and dynamic players in the *M&A* activity are bigger in size post-*M&A*. This is intuitive and confirms most of the earlier findings in this study. However, unlike the one-time acquirers frequent participants are likely to have lower profits in the post-*M&A* period.

Further, it is observed that acquirers in cross-border *M&A* experience an increase in profitability, efficiency and size, confirming some theoretical intuitions developed earlier. However, in contrast, Hagendorff and Keasey (2009) found no evidence of increase in profitability in European cross border *M&A*. Further, there is evidence that cross-border *M&A* are likely to result in worsening of a financial entity's asset quality (*DDP2*). This

[3] *DDP* is computed as doubtful debt provisions to total loans. *DDP2* is computed as doubtful debt provision to total assets, as data on total assets is more widely available than total loans.

finding has significant policy implications. The regulators need to effectively monitor such acquisitions as falling asset quality in these entities is likely to create conditions of financial instability. The deterioration in asset quality in such global entities raises the concern on 'multilateral supervision' i.e., who bails out a failed bank that has been created from cross-border merger involving two banks in different countries (Valdez and Molyneux, 2010). In sum, the increase in profits and size in cross-border *M&A* indicate the rising market power that these financial entities are able to possess. The rise in profits particularly at the cost of decline in asset quality makes the financial system susceptible to financial crisis.

A large number of mergers in the Indian financial sector are forced or regulatory mergers, i.e. weak banks are merged with strong banks to protect the interests of depositors. In such cases the acquired firms are likely to be characterized by low profitability and high NPAs. The analysis does not provide any evidence on the generally accepted belief that government induced mergers involving sick or weak entities are likely to adversely affect an acquirer's performance (*REGULATORY*). It is generally argued that mergers should be recommended on purely economic grounds in order to boost efficiency in the system. For instance, Jayadev and Sensarma (2007) using event based methodology, found that forced mergers neither resulted in gains for the acquirer banks (in fact, acquirers lost their wealth) nor the target bank on announcement of merger. However, these findings are based on an entirely different methodology and investigate the immediate short run following announcement of merger, rather than the long run impact on performance after the actual merger.

Furthermore, when more than two firms participate in a *M&A* deal (*MULTIPLEFIRMS*), capital (*CAP*), asset quality (*DDP2*) and profitability ratio (*PRT2*) decline. The adverse performance in terms of these indicators could be attributed to the higher acquisition cost resulting from simultaneous acquisition of more than two firms. In such mergers, the cost of integrating the employees in the new restructured entity is also likely to be higher. However, no study has quantified these aspects; therefore, there are no results with which our findings could be compared.

Finally, in the diversifying *M&A* (*DIVERSIFICATION*), there is no evidence of improvement in performance. In fact, there has been deterioration of asset quality (*DDP2*). Similarly, in case of *M&A* among firms having a pre-existing relationship (*RELATEDFIRMS*), there may not be any significant improvement in performance. It is hypothesized that such *M&A* may lead to improvement in efficiency by providing integrated

financial services. So it seems that, contrary to our expected hypothesis, acquisitions among the closely related firms may not provide substantial improvement in performance. In fact, there is a decline in quality of asset (*DDP2*), diversification and liquidity. The decline in diversification could be explained by measures adopted by RBI to curtail the spread of financial activities in these entities, particularly banks. In the analysis based on manufacturing firms in Japan, Kruse *et al*. (2007) could not find any significant gains in performance in firms having pre-existing relationship.

In general, the empirical evidence from the Indian financial sector suggests that *M&A* are not likely to significantly improve the performance of firms. This is in conformity with the findings of other studies based on non-financial sector entities (Agarwal *et al*., 1992) as well as financial entities. Several studies have found no significant change in performance (Beena, 2004), while, other studies on financial and non-financial entities (Healey *et al*., 1992) have found improvement in performance.

Based on these findings, it can be inferred that it is far more likely that motives apart from performance improvement could be driving these *M&A*. In particular, the benefits that emanate from rise in size, such as monopoly power could be the explanation. Alternatively, managerial interests and rewards could be the motive behind these *M&A*. Thus, although theory suggests that economic factors like profitability and efficiency may be important, but in reality, it may be the monopoly or market power and managerial self-interest that may be motivating factors (Pombo *et al.*, 2009). Accordingly, several studies have focussed on human aspects in *M&A* (Gaughan, 1996; Empson, 2001). These are likely to be particularly dominating in entities where equity shareholders may not be well represented on the firms' board of directors or the corporate governance controls may be weak, thereby allowing managers to follow their own interests rather than that of shareholders.

6. Conclusion

The analysis extends empirical exercise on *M&A* in at least two ways. First, it models the post *M&A* performance of acquirers in a dynamic framework. It is important to conduct such an analysis based on a long period. This is so because many firm level and macro level changes take place constantly, particularly in the financial sector, requiring a dynamic exploration. Second, it econometrically investigates the qualitative aspects related to firms and *M&A*. The findings of the study also provide new insights into the consequences of different pairings of firms or different types of *M&A* deals. This allows a deeper understanding of the *M&A* in the financial sector and its implications on the acquiring firms.

The analysis reveals some interesting findings. The dynamic performance analysis reveals that there has been a deterioration of capital, liquidity and asset quality (short, medium and long term) and increase in profits (not robust) and size (long run) of the acquirers. At the same time it is observed that acquirers in cross-border *M&A* find an increase in profitability, efficiency and size as well as a worsening of asset quality. The decline in asset quality puts the financial system at risk of financial contagion, calling for effective regulation.

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