CHAPTER – 7
SUMMARY AND CONCLUSION

This chapter summarizes the results of the study. It further attempts to conclude and give the managerial implications of the findings of the study. It concludes by providing suggestions and scope for future research.

Mergers and Acquisitions have become the most acceptable tool for companies to grow externally. The M&A market has grown tremendously all over the world in last few decades. Several merger waves have been witnessed in various countries, US has witnessed five merger waves since 1920s and the present merger wave could be considered as sixth wave. UK also has seen large merger activity during last four decades. India being no exception has witnessed a tremendous increase in merger and acquisitions transactions after the liberalized policy of 1991. A large number of companies employed mergers and acquisitions as a tool for inorganic growth. An alternative way for a company to grow is through external routes like mergers and acquisitions. In today's competitive world, companies striving for growth find mergers and acquisitions an appropriate means for improving performance. Many companies have grown as big empires through mergers and acquisitions programs. The period after mid-nineties saw a tremendous growth in mergers and acquisitions all over world which led to many successful mergers resulting in increase in market value of the firm thus validating the value maximization behavior of management. Value maximization theory posits that managers take decisions which are in the best interest of shareholders. Many studies relating to mergers and acquisitions have found the acceptance of wealth maximization hypothesis (Asquith, 1983, Bradley, Desai and Kim, 1988). On the contrary there is equally strong and opposite theory of management’s utility maximization postulated by some researchers that had found its way in finance literature due to some major
failures in mergers and acquisitions (Firth, 1979). With separation of ownership and control, there exists principal-agent relationship between management and shareholders and managers may act in their own interest instead of acting for the benefit of shareholders resulting in agency costs which may lead to loss of shareholders wealth. The present study focused on wealth maximization hypothesis and attempted to examine whether value is created through mergers or not.

7.1 VALUE CREATION THROUGH MERGERS AND ACQUISITIONS-EVIDENCE FROM EXISTING EMPIRICAL LITERATURE

A large strand of literature on mergers and acquisitions studied market reaction on merger announcements, focusing on value creation through mergers and acquisitions. Studies relating to market reaction of mergers report positive returns to target firms and very less or zero returns to acquirer firms (Firth, 1970; Dodd, 1980; Franks and Harris 1989). Recent studies focused on long run performance of companies after mergers which have been studied through abnormal returns on share prices as well as operating performance. Most of the long-run event studies show negative abnormal returns to acquirers in case of mergers (Asquith, 1983; Loughran and Vij, 1997; Aggarwal et al, 1992). Among operating performance studies some of the studies reported positive and significant improvement in performance after mergers (Healy, Palepu and Ruback, 1992; Parrino and Harris 1999; Heron and Lie, 2002) whereas few reported insignificant results about the impact of mergers on performance (Sharma and Ho, 2002; Pawaskar, 2001; Martinova et al, 2006). The relationship between pre merger and post merger performance has also been the focus of few studies in mergers and acquisition literature (Healy et al 1992; Aggarwal, Jaffe and Mandelkar, 1992; Dash, 2004).

Mergers and acquisitions has been an emerging area for research in the field of finance. In India, the subject has not been well explored. Very few studies relating to impact of mergers and acquisitions have been done in India (Pawaskar, 2001; Dash, 2004; Mantravadi and Reddy; 2007).
The present study contributes to the existing literature in following ways:

- It has attempted to trace the impact of merger announcements on shareholders' value based on available empirical evidence.
- The study examined the abnormal returns around merger announcements to the shareholders of both acquirer and target firms using event study methodology.
- It has also examined the pre-merger and post-merger operating performance of acquiring firms in the long-run.
- The relationship between abnormal returns acquirer firms and target firms and firm-specific characteristics such as size and book to market ratio.
- The study has also examined relationship between merger announcement period returns and post-merger performance of companies through multiple regression analysis.

### 7.2 HYPOTHESES OF THE STUDY

#### 7.2.1 Hypotheses based on Event Study Literature

- **H₀₁** – The abnormal returns to the acquirer firms around merger announcement are equal to zero
- **H₀₂** – The abnormal returns to the target firms around merger announcement are equal to zero
- **H₀₃** – The average abnormal returns to the acquirer firms around merger announcement are equal to zero
- **H₀₄** – The average abnormal returns to the target firms around merger announcement are equal to zero
- **H₀₅** – The cumulative average abnormal returns to the acquirer firms around merger announcement are equal to zero
- **H₀₆** – The cumulative average abnormal returns to the target firms around merger announcement are equal to zero
7.2.2 Hypotheses based on Operating Performance Literature

H₀₁ - The average adjusted profit margin is equal to zero
H₀₂ - The average adjusted return on capital employed is equal to zero
H₀₃ - The average adjusted return on net worth is equal to zero
H₀₄ - The average adjusted cash flow return on sales is equal to zero
H₀₅ - The average adjusted cash flow return on net worth is equal to zero
H₀₆ - The average adjusted cash flow return on assets is equal to zero
H₀₇ - The median adjusted profit margin is equal to zero
H₀₈ - The median adjusted return on capital employed is equal to zero
H₀₉ - The median adjusted return on net worth is equal to zero
H₁₀ - The median adjusted cash flow return on sales is equal to zero
H₁₁ - The median adjusted cash flow return on net worth is equal to zero
H₁₂ - The median adjusted cash flow return on assets is equal to zero
H₁₃ - There is no difference between pre merger and post merger operating performance of companies.

7.3 RESEARCH METHODOLOGY USED IN THE STUDY

Event study methodology (Brown and Warner, 1985) has been used to examine the abnormal returns to acquirer as well as target firms around the merger announcements. The event study examines the abnormal returns to acquirer and target firms around the merger announcement. Abnormal returns are estimated as difference between actual return and predicted returns. Abnormal returns are measured through three different methods-market model, market adjusted method and mean adjusted method. The results are studied by examining abnormal returns to acquirer companies, abnormal returns to target companies, average abnormal returns to acquirer and target companies, cumulative average abnormal return to acquirer and target companies. Wealth created by acquirer and target companies has also been examined. The impact of size and book to market ratio on abnormal returns has also been examined.

Operating Performance Benchmark Methodology (Barber and Lyon, 1996) has been used to examine the post merger operating performance of companies. Control firm approach has been applied to study the adjusted
operating performance of sample firms. Control firm has been chosen on the basis of size and industry. Accounting as well as cash flow measures have been measured to assess the operating performance. The results were compared for pre-merger and post-merger period for three years before and three years after the merger.

The relationship between merger announcement period returns and post merger adjusted operating performance has also been examined through multiple regression analysis. Stepwise regression has been used to determine the most significant factors study the among various attributes like industry relatedness and ownership structure.

7.4 FINDINGS OF THE STUDY

7.4.1 Market Reaction around Merger Announcements

7.4.1.1 Abnormal Returns to Acquirer and Target Companies

The average abnormal returns to acquirer companies measured through all the three methods – market model, market adjusted and mean adjusted show that companies gained positive returns during pre announcement period but lost on an average 0.65% immediately after the announcement. The average abnormal returns to target firms show that target companies experienced substantially negative returns during pre announcement whereas they gained substantially positive returns during post announcement period. The returns of target firms are statistically significant, hence rejecting the null hypothesis that abnormal returns to target firms are equal to zero.

7.4.1.2 Cumulative average abnormal returns to acquirer companies

The cumulative average abnormal returns to acquirer firms are positive during shorter windows (1day, 2 day, 3 day and 5 day windows) as measured through all the three methods but they become negative as the windows are enlarged to 10 days, 20 days, 30 days and 40 days. The cumulative average abnormal returns to target firms are positive and statistically significant in 1 day window, 2 day window 3 day window in all the three methods.
7.4.1.3 Wealth Created by Acquirer and Target Companies

Wealth created by acquirer and target companies has been measured as a product of market capitalization and cumulative abnormal returns. The results show that acquirer companies have created positive wealth during 1 day, 2 day and 5 day window in all the three methods but lost wealth during larger windows. Wealth gains to target companies in all the windows market model method and wealth loss in 10 day and 20 day windows.

From the foregone we may conclude that acquirer companies lost shareholders' wealth during merger announcement whereas target companies gained substantially on merger announcement. This indicates that merger announcement give a positive signal to the market about the value of the target firm. The results are consistent with earlier studies which posit that target companies gained and acquirer companies lose during merger announcement.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Hypotheses</th>
<th>Test statistic</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>No average abnormal returns to acquirer companies around merger announcement</td>
<td>t-test</td>
<td>Significantly negative on day +2, day +11, and day +16</td>
</tr>
<tr>
<td>2.</td>
<td>No average abnormal returns to target companies around merger announcement</td>
<td>t-test</td>
<td>Significantly positive on day 0 and day +1, but significantly negative on day +3, day +4 and day +11</td>
</tr>
<tr>
<td>3.</td>
<td>No cumulative average abnormal returns to acquirer companies around merger announcement</td>
<td>t-test</td>
<td>Not significant</td>
</tr>
<tr>
<td>4.</td>
<td>No cumulative average abnormal returns to target companies around merger announcement</td>
<td>Paired t-test</td>
<td>Significantly positive in 1 day, 2 day and 3 day window under all the three methods and significantly negative in 10 day and 20 day window</td>
</tr>
<tr>
<td>5.</td>
<td>No difference between CAR of companies in top and bottom quartiles based on size</td>
<td>Paired t-test</td>
<td>Positive and significant difference in acquirer companies</td>
</tr>
<tr>
<td>6.</td>
<td>No difference between CAR of companies in top and bottom quartiles based on book-to-market ratio</td>
<td>Paired t-test</td>
<td>Not significant</td>
</tr>
</tbody>
</table>
7.4.2 Pre and Post Merger Operating Performance

Table 7.2 presents the summary of results of pre-merger and post-merger operating performance of merged companies. The pre-merger combined adjusted operating performance is compared with post-merger adjusted operating performance of merged firms. The statistical significance of average adjusted operating performance measures has been tested through t-test and that of median adjusted operating performance has been tested through Wilcoxon’s signed rank test. The results for accrual measures show that average adjusted profit margin is significantly positive in year +2. However adjusted ROCE and RONW are not significant in any of the pre-merger as well as post-merger years. The results for cash flow measures reveal that CFROS and CFROA are positive and significant in year +1 and year +3 whereas adjusted CFRONW is significantly positive in year +3. Among the median adjusted performance measures it has been observed that median adjusted profit margin is not significant in post-merger as well as pre-merger period. Median adjusted ROCE and RONW are positive and significant in year +1. The cash flow measures CFROS is significant and positive whereas CFROS and CFROA are not significant during pre-merger as well as post-merger years.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Hypotheses</th>
<th>Test statistic</th>
<th>Results</th>
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<tbody>
<tr>
<td>Average Operating Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Average adjusted profit margin is equal to zero</td>
<td>t-test</td>
<td>Significantly positive in post merger year +2</td>
</tr>
<tr>
<td>2.</td>
<td>Average adjusted ROCE is equal to zero</td>
<td>t-test</td>
<td>Not significant</td>
</tr>
<tr>
<td>3.</td>
<td>Average adjusted RONW is equal to zero</td>
<td>t-test</td>
<td>Not significant</td>
</tr>
<tr>
<td>4.</td>
<td>Average CFROS profit margin is equal to zero</td>
<td>t-test</td>
<td>Significantly positive in year -2, year +1 and year +3</td>
</tr>
</tbody>
</table>

Contd.....
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<tr>
<th>S. No.</th>
<th>Hypotheses</th>
<th>Test statistic</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Average adjusted CFRONW is equal to zero</td>
<td>t-test</td>
<td>Significantly positive in year +3</td>
</tr>
<tr>
<td>6.</td>
<td>Average adjusted CFROA is equal to zero</td>
<td>t-test</td>
<td>Significantly positive in year +1 and year +3</td>
</tr>
</tbody>
</table>

**Median Operating Performance**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Hypotheses</th>
<th>Test statistic</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Median adjusted profit margin is equal to zero</td>
<td>Wilcoxon Signed Rank Test</td>
<td>Not significant</td>
</tr>
<tr>
<td>2.</td>
<td>Median adjusted ROCE is equal to zero</td>
<td>Wilcoxon Signed Rank Test</td>
<td>Significantly positive in year +1</td>
</tr>
<tr>
<td>3.</td>
<td>Median adjusted RONW is equal to zero</td>
<td>Wilcoxon Signed Rank Test</td>
<td>Significantly positive in year +1</td>
</tr>
<tr>
<td>4.</td>
<td>Median CFROS profit margin is equal to zero</td>
<td>Wilcoxon Signed Rank Test</td>
<td>Significantly positive in year +1</td>
</tr>
<tr>
<td>5.</td>
<td>Median adjusted CFRONW is equal to zero</td>
<td>Wilcoxon Signed Rank Test</td>
<td>Significantly positive in year +1</td>
</tr>
<tr>
<td>6.</td>
<td>Median adjusted CFROA is equal to zero</td>
<td>Wilcoxon Signed Rank Test</td>
<td>Not significant</td>
</tr>
</tbody>
</table>

7.4.2.1 Operating Performance and Ownership

Companies owned by big business house and foreign companies perform better than their industry and size matched firms during all the three post merger years. The companies owned by big business houses and private owners report negative ROCE whereas foreign owned companies and Government owned companies report positive ROCE. The results of return on net worth show increase in operating performance in post merger years except in one case where Big Business Houses group report negative returns in post merger year +2. The results for cash flow return on sales report
positive cash flows as compared to industry and size based benchmark for big business houses and Government controlled companies and statistically significant adjusted cash flow return for foreign controlled companies whereas privately owned companies report positive cash flow returns in year +1 and negative returns in year +2.

The results for cash flow return on net worth for various ownership groups report positive cash flow return by big business houses but increased cash flow returns in post merger years as compared to pre merger years by foreign owned companies. The Government owned companies report substantially positive and statistically significant cash flows decline in year -1 but cash flow returns decline in year +1 and year +2.

7.4.2.2 Operating Performance and Industry Relatedness

The mean adjusted profit margin in related mergers show improvement in post merger year +1 and Year +2. The adjusted ROCE increased in post mergers in related mergers but declined in case of unrelated mergers. The results for adjusted RONW also show similar trend. The adjusted RONW show improvement in post merger years in case of related mergers whereas in unrelated mergers it increased in post merger year+1 but declined to -10.8% in year +2. The cash flow returns on sales reported large in crease in year +1 from year -1 but afterwards it show decline in CFROS in year +2 and year +3.

The adjusted CFROS in unrelated mergers show large decline in post merger year +1 as compared to year -1 but it improved in year +2 and year +3. The cash flow return on net worth in related mergers reported substantial increase in post merger year +1, decrease in year +2 and a large increase in year +3 again. In case of unrelated mergers cash flow returns show large increase in year +1 but a large decline in year +2. The cash flow return on assets also.

7.4.3 Relation between Pre-merger and Post-merger Performance

The relationship between pre merger and post merger operating performance has been examined through regression analysis. Six regressions
have been run for the six variables. The results of the regression show that the coefficients in all the six regressions are positive indicating that there is positive relationship between post merger operating performance and pre merger operating performance. The coefficient of profit margin, ROCE, CFRO and CFROA are positive and statistically significant. It may be concluded that pre merger performance predicts the possible future outcome of merger.

7.4.4 Relationship between Post-merger Operating Performance and Announcement Period Abnormal Returns

The relationship between post merger operating performance and announcement period returns has been examined through multiple regression analysis. Six set of regressions have been run taking each of operating performance variables as dependent variables and cumulative abnormal returns around the merger announcement through three different methods - market model, mean adjusted method and market adjusted method as independent variables. Industry relatedness of mergers and ownership structure of acquirer companies have been taken as dummy variables. The results indicate that regression for profit margin and return and return on net worth do not give any significant results in any of the three set of regressions. The results for regression taking return on capital employed as dependent variable show that only one variable relating to industry relatedness dummy has been entered into model its coefficient being significant which means that industry relatedness does have an impact on the explanatory power of the model. This indicates that mergers in related industry have positive relationship with post merger operating performance of companies. In regression for cash flow return on sales the variables included in the regression model are 10 day CAR and industry relatedness dummy variable. In third regression where CFRONW is taken as dependent variable, the two variables which are included in the regression model are industry relatedness dummy variable and 2 day CAR again showing positive and significant relationship of industry relatedness of mergers and announcement period returns with the post merger operating performance. In fourth The industry relatedness dummy and 5 day CAR are included in the model showing the positive and significant relationship between post merger CFROA.
In the results for second set of regressions where post merger operating performance variables are regressed upon cumulative abnormal returns based on market model, Industry relatedness is included in all the four models showing positive and significant relationship with post merger performance. In second regression where CFROS is dependent variable, 5 day CAR also show positive and significant coefficient and have been included in the regression model.

In the regression with ROCE as dependent variable, the variable included in the model is industry relatedness dummy which shows positive and significant relation with ROCE. In second regression industry relatedness dummy and 10 day CAR are entered in model thus showing positive and significant relationship between industry relatedness, announcement period returns and Cash flow return on sales. In third and fourth regression where CFRONW and CFROA are dependent variables, industry dummy and 2 day CAR significantly entered into the regression model and report positive relation with post merger operating performance.

The results of regression analysis show that there is a positive and significant relationship between post merger operating performance and announcement period returns indicating that the abnormal returns at the time of merger announcement predict the possible positive effects of mergers on the performance of companies in future.

### 7.5 DISCUSSION AND IMPLICATIONS OF THE STUDY

The results of market reaction of merger announcements show negative or very little gains to acquirer companies and substantially positive and statistically significant gains to target companies. The cumulative average abnormal returns to acquirer companies were not significant whereas target companies earned statistically significant CAAR during 1 day, 2 day and 3 day window. It may be implied that merger announcement gives a positive signal to the market about the value of the target companies. It has also been observed that although on an average target companies gained substantially positive returns on merger announcement but evidence shows that there are few acquirer companies that gained substantially during merger announcements when CAR of individual companies have been analyzed. To look behind the reason for such extreme results the effect of size and book-to-
market of companies has been analyzed but no consistent pattern has been observed. However it has been observed that the acquirer companies which gained substantially on merger announcement were among those companies that are listed under most respected companies of 2007 based on survey conducted by IMRB. We may conclude that better governed companies give appositve signal to the market about their growth capabilities. It is also evident that positive wealth has been created by acquirer and target firms at the time of announcement. The analysis of impact of size and book-to-market ratio on abnormal returns reveals that there is no significant difference in abnormal returns on the basis of size and book-to-market ratio. This implies that size of companies do have an impact on abnormal returns of companies.

The results of pre and post merger operating performance analysis reveal that operating performance of companies improved after merger. The results point out the synergy effect of mergers. However the improved performance is significantly visible only after second year and third year of merger as they are positive and significant in post merger year +2 and year +3. This may be due to the reason that generally it takes one year or more for acquirer companies to capture the potential synergies of merger and the results are visible only after second or third year of merger. This implies that managers must focus on post-merger integration to merger a successful event. It not only needs integration of capital and financial resources but also requires cultural adjustments.

The results of impact of industry relatedness on operating performance reveal significant adjusted operating performance in post merger years in case of related mergers, which indicates that mergers in related industry perform better than unrelated mergers. The results of regression analysis also show positive relationship with each of post-merger performance variable indicating that a part of post merger improved performance is due to industry relatedness of merger. This may be due to the reason that in related industry mergers resources of both the companies could be combined more efficiently and advantages of post-merger integration could be explored in better manner as compared to unrelated mergers. Managers may focus on combining the businesses in the same industry as a part of their inorganic growth strategy.
7.6 LIMITATIONS OF THE STUDY

The results of the study are based on the analysis of mergers completed in India. Cross border mergers or global mergers involving Indian companies did not form a part of the sample. Moreover the analysis is based on small sample size due to the data availability constraints. The reasons of having a small sample are:

i) For event study only those acquirer and target companies have been taken for which daily share price data is available for at least one year before the merger announcement. This led to sample of 39 merger announcements.

ii) Further for pre and post merger operating performance comparison the companies with 6 year accounting data (3 years before and 3 years after the merger) are included in the sample. This led to further shrinkage of sample to 29 mergers.

iii) Another reason for data availability constraint is that the analysis is based on the data available on single database - prowess which restricted the sample size to only those companies which are listed on prowess.

iv) The focus of the study was on mergers only and acquisitions have not been studied which is also an important corporate event.

7.7 SUGGESTIONS FOR FUTURE RESEARCH

The following issues have been felt to be explored further and hence been suggested for future research:

i) The research study is based on a limited sample due to data availability constraints. This study may be replicated by future researchers for a larger sample with use of more advanced techniques.

ii) The post merger performance was analyzed for three years period after the merger which may not be a long time period and future research may be done with longer post merger period.

iii) Further the impact of firm specific characteristics and merger related variables on the performance of companies may also be studied as in this study it was limited to ownership structure and
industry relatedness of mergers only due to time and data constraints.

iv) Market reaction to acquisitions could also been studied and a comparison may be done between the impact of mergers and acquisitions to have an insight into the market signaling of different corporate events.