



Stock Price Behavior around Mergers and Acquisitions Announcement: Evidence from India

Neethu . T . C

Research scholar, Department of International Business, School of Management, Pondicherry University, Kalapet, Pondicherry, India

Dr. Rajeesh Viswanathan

Assistant Professor, Department of International Business, School of Management, Pondicherry University, Kalapet, Pondicherry, India

ABSTRACT

The event study technique is the most valuable tool in strategic management research. It helps in analyzing the behavior of investors and forecasting the trends of stock market towards an event. In the current study the researcher has focused on the stock price reaction around the M&A announcement. The results indicated that the Indian bidders had a positive wealth gain around the announcement. The study also investigated the same with respect to different classification on the basis of location of the target, method of payment, industry relatedness and financial crisis.

KEYWORDS : .M&As, Stock Price Reaction, Event Study, Regression

1. Introduction

With globalization organizations have been expanding in an exponential manner. Mergers and acquisitions has become the order of the day, as many organizations wishes to merge for various reasons like technology sharing and so on. Organizations started merging and acquiring not only with domestic players but also international players. M&A became a channel of entry into foreign market.

Current study did a analysis on the wealth effect as a result of the M&As announcement during 2006 to 2011 in India. The inception of event study usage in the area of financial economics can be traced back to late 1960's (Fama et al., 1969) since then several disciplines are using the event study methodology including strategic management (Schijven and Hitt, 2012).

The event study can be used to find the wealth effect of M&A (Kiyamaz, 2009; Schijven and Hitt, 2012; Wansley et al ,1983; Fang Tao et al 2016; Lutao Ning et al, 2014). This study analysed the abnormal return after M&A announcement. The efficient market hypothesis stating that the share price 'at any time fully reflect' all the information that are available (Fama, 1970). So with the results one can assume the behavior of the investors to the reaction around an announcement (Schijven and Hitt, 2012). The previous studies states that the reaction of the investors is from rationale thoughts and not from emptiness (Shleifer 2000). However, without the refined information there is evidence that the announcement made the acquirer's value down (King et al 2004).

Though ample of studies have been done in the area of M&As which have been done to analyse whether there are any gain to investors around the announcement day (Kiyamaz, 2009; Schijven and Hitt, 2012; Wansley et al, 1983; Fang Tao et al 2016; Lutao Ning et al, 2014). The M&As will bring the overall change in the corporate strategy of a firm (Fang Tao et al 2016). The investors will react to the announcement through trading in the shares with their perceptions about the firm.

From the earlier studies it has been learnt that there will be significant negative return (Langtieg, 1978), and also positive return (Masulis et al. 2007; Faccio et al. 2006; Moeller & Schlingemann, 2005) around the announcement. However some studies state that there won't be neither positive nor negative gain but it was opinioned that the abnormal return will be zero (Bruner 2002; Mitchell & Stafford, 2000; Walker, 2000)

2. Data and Methodology

2.1. Sample Selection

This study focuses on the 300 M&A deals in India during the period of 2006-2011. The deal details have been extracted from the

Bloomberg Database. The financial service industry is excluded from the list. The acquirers which are not having the stock price data are excluded from the sample. The stock price data is collected from both BSE and NSE websites. The data of firm's characteristics are taken from the CMIE ProwessIQ database.

2.2 Sample Description

Table 1 explains the description of 300 M&A deals. There was a merger wave in the year 2007-2008 (74 deals). The researcher took 224 CBMAs and 76 Domestic M&As. The panel C shows that the majority of the deals are financed by cash. The acquisitions in the form of consolidation are 216. In this study the researcher took 100 deals before the crisis, 123 deals during the crisis and 103 deals after the crisis, the crisis period taken as December 2007 to June 2009.

Table 1. Sample Description

	No. of Deals	Percentage		No. of Deals	Percentage
Panel A: Completion Year		Panel C: Mode Of Payment			
2005-06	43	15%	Cash	234	78%
2006-07	57	19%	Stock And	66	22%
2007-08	74	25%	Cash		
2008-09	41	13%	Panel D: Industry Relatedness		
2009-10	43	15%	Consolidation	216	72%
2010-11	42	13%	Diversification	84	28%
Panel B: Location Of Deals		Panel E: Financial Crisis			
Cross Border	224	75%	Pre Crisis	88	29%
Domestic	76	25%	Crisis	120	40%
			Post Crisis	92	31%

Source: Bloomberg Database

1. Methodology

With the use of event study method the researchers find out the market reaction to the M&A announcement. The following market model is used for parameter estimation:

$$R_{it} = \alpha_i + \beta_i \times R_{mt} + e_{it} \text{ (Equation 1)}$$

Where R_{it} is the rate of return on stock i at day t , α_i is the intercept, β_i is the slope of the linear relationship between the return of i and the return of general market. R_{mt} is return on the market portfolio and e_{it} is the error term in the equation. From the above equation the abnormal return (AR_{it}) can be calculated as:

$$AR_{it} = R_{it} - (\alpha_i + \beta_i \times R_{mt}) \text{ (Equation 2)}$$

Where, $\hat{\alpha}$ and $\hat{\beta}$ are the OLS parameters of estimated market model computed by the use of pre estimation period (-256 to -30). With the use of these two the researcher predicted the normal return during the event window. To compute the daily AR deducted the normal return from actual return. Event window means the symmetric number of days around an event day. In this study 3, 5, 7, 11 and 21 day windows were [(-1, 1), (-2, 2), (-3, 3), (-5, 5) and (-10, 10)] used to measure the stock price reactions. To compute the cumulative abnormal returns (CAR) the daily AR were aggregated over the event window period. Parametric t-test was used to check whether CARs are statistically different from zero.

4. Results and Discussion

4.1. Wealth effect

Table 2 presents the result of t test on 300 CAR around the M&A announcement. Following the announcement the investors of bidding firm make a positive gain. The results shows that the CAR is positive with the value of 0.30%, 0.33% and 0.35% for the event windows (-10, 10), (-3, 3) and (-2, 2) respectively. And the t stat shows all are significant at 1% and 5% level.

Table 2. CAR around the M&As Announcement Days

Event Windows	Mean	S.D	t-stat
(-10,10)	0.0030	0.00225	6.147***
(-5,5)	0.0014	0.00290	1.609
(-3,3)	0.0033	0.00335	4.587***
(-2,2)	0.0035	0.00359	3.207**
(-1,1)	0.0045	0.00399	1.933

*** p < .01 ** p < .05 * p < .10. (two tailed test)

Table 3 shows the results of one sample t test on CAR which are classified into CBMAs and Domestic M&As. The share holders do not react immediately after one day of the acquisitions. From these results it is found that the share holders are reacting more to a domestic M&As announcement than CBMAs announcement. They make negative gain during the period. The third part of the table show the paired sample t test which tested whether the difference between the CBMAs and domestic is significant or not. It shows on the event windows (10,10), (-5,5) and (-3,3) the reaction is significantly different in two groups.

Table 3. CAAR around the M&As Announcement Days CBMAs vs Domestic M&As

Event Windows	CBMAs			Domestic Acquisitions			CBMAs – Domestic M&As		
	Mean	S.D	t-stat	Mean	S.D	t-stat	Mean	S.D	t-stat
(-10, 10)	-.0020	.00290	-3.090*	-0.0084	.01075	-3.596*	.00648	.00966	3.077¹
(-5,5)	.00042	.00312	0.459	-0.0137	.00723	-6.275*	.01412	.00784	5.973¹
(-3,3)	.00270	.00370	1.904	-0.0044	.00346	-3.346^b	.00703	.00535	3.480²
(-2,2)	.00323	.00403	1.758	-0.0003	.00343	-0.170	.00343	.00497	1.541
(-1,1)	.00447	.00457	1.681	0.0036	.00271	2.293	.00084	.00444	0.328

^a p < .01 ^b p < .05 ^c p < .10.
¹ p < .01 ² p < .05 ³ p < .10. (two tailed test)

Table 4 shows the results of one sample t test on CAR which are classified into Cash financed and Stock financed M&As. The reaction is more to stock financed acquisitions than cash financed acquisitions in long event windows and their return is negative here with the value of 1.68%, 1.66% and 0.45% for the windows (10,10), (-5,5) and (-3,3) respectively. But towards the cash financed M&As the investors are reacting positively and they are making positive gain from this with the value of 0.14%, 0.40%, 0.61% and 0.66% for the

windows (10,10), (-3,3), (-2, 2) and (-1, 1) respectively. The third part of the table shows the paired sample t test which tested to find whether there any significant difference between cash financed and stock financed M&As. It shows on every window the reaction is significantly different in two groups.

Table 4. CAAR around the M&As announcement days: Cash Financed vs Stock Financed

Event Windows	Cash Financed			Stock Financed			Cash – Stock		
	Mean	S.D	t-stat	Mean	S.D	t-stat	Mean	S.D	t-stat
(-10, 10)	-.0014	.00265	-2.401^b	-.0168	.01438	-5.362^a	.01548	.01358	5.210¹
(-5,5)	.00004	.00314	0.049	-.0166	.00966	-5.709^a	.01667	.01034	5.346¹
(-3,3)	.00406	.00356	2.948^b	-.0045	.00493	-2.429^c	.00850	.00654	3.438²
(-2,2)	.00614	.00334	4.096^b	-.0008	.00286	-0.648	.00694	.00467	3.326²
(-1,1)	.00669	.00159	7.193^b	.00119	.00189	0.980	.00552	.00180	5.313²

^a p < .01 ^b p < .05 ^c p < .10.
¹ p < .01 ² p < .05 ³ p < .10. (two tailed test)

Table 5 shows the results of one sample t test on CAR, which are classified into Consolidation and Diversification. In (-3, 3) window the shareholders are creating positive gain in consolidation. But in next two windows ie in (-5,5) and (10,10) it is negative. In the windows (-5,5) and (-3,3) the investors are experiencing negative return in diversification. The third part of the table show the two sample t test which tested whether the difference between the M&As in the form of consolidation and diversification is significant or not. On the (-3,3) window the reaction is significantly different in two groups.

Table 5. CAAR around the M&As announcement days: Consolidation vs Diversification

Event Windows	Consolidation			Diversification			Consolidation-Diversification		
	Mean	S.D	t-stat	Mean	S.D	t-stat	Mean	S.D	t-stat
(-10, 10)	-.00476	.00696	-3.128^a	-.00078	.00498	-0.674	-.00402	.01077	-1.709
(-5,5)	-.00266	.00426	-3.005^b	-.00466	.00296	-5.114^a	.00199	.00566	1.165
(-3,3)	.00348	.00348	3.559^b	-.00530	.00160	-8.760^a	.00865	.00272	.423¹
(-2,2)	.00329	.00399	1.799	0.0000	.00157	0.041	.00318	.00284	.509
(-1,1)	.00520	.00460	1.941	0.0019	.00186	1.737	.00329	.00343	.659

^a p < .01 ^b p < .05 ^c p < .10.
¹ p < .01 ² p < .05 ³ p < .10. (two tailed test)

Table 6a shows the results of one sample t test on CAR which is classified into pre crisis; crisis and post crisis M&As. the investors of bidding firm make positive gain around the announcement of M&As done in the Crisis period with the value of 1.09%, 1.25%, 0.34% and 0.37% for the windows (-2, 2), (-3,3), (-5,5) and (-10,10) respectively. But in both post crisis and pre crisis period the return is negative. The table 6b shows the paired sample t test which tested to find whether there any significant difference between post crisis and crisis period return and crisis and pre crisis period return. The comparison between the crisis period and post crisis period shows that in every windows the reaction was different for the two groups except for the (-1, 1) window. And the difference between the reaction towards pre crisis and crisis period also significant for every window

Table 6a. CAAR around the M&As announcement days: Pre-crisis vs Crisis vs Post crisis

Event Windows	Pre-crisis			Crisis			Post crisis		
	Mean	S.D	t-stat	Mean	S.D	t-stat	Mean	S.D	t-stat
(-10, 10)	0.0005	0.00533	0.451	0.0037	0.00568	2.997^a	-0.0157	0.00914	-7.873^a
(-5,5)	-0.0076	0.00373	-6.731^a	0.0034	0.00676	1.661^a	-0.0064	0.00577	-3.698^a
(-3,3)	-0.0044	0.0017	-6.786^a	0.0125	0.00677	4.873^a	-0.0074	0.00289	-6.758^a
(-2,2)	-0.0004	0.00207	-0.380	0.0109	0.00616	3.959^a	-0.0050	0.00232	-4.813
(-1,1)	0.0015	0.00263	0.971	0.0086	0.0062	2.401	0.0018	0.00206	1.517

^ap < .01 ^bp < .05 ^cp < .10. (two tailed test)

Table 6b. Crisis Effect

Event Windows	CAAR (Post Crisis – Crisis)			CAAR (Crisis – Pre Crisis)		
	Mean	S.D	t-stat	Mean	S.D	t-stat
(-10,10)	-0.01942	0.01267	-7.027¹	0.00319	0.00840	1.742³
(-5,5)	-0.00982	0.01090	-2.987²	0.01095	0.00832	4.364¹
(-3,3)	-0.01987	0.00821	-6.403¹	0.01683	0.00579	7.694¹
(-2,2)	-0.01591	0.00579	-6.146¹	0.01126	0.00429	5.875¹
(-1,1)	-0.00679	0.00448	-2.622	0.00712	0.00357	3.455²

¹p < .01 ²p < .05 ³p < .10. (two tailed test)

4. Conclusion

The study analyzed the wealth effect around the M&As announcement and the factors affecting wealth effect. It is found that around an M&A announcement the investors are making abnormal return. They made a positive gain around the announcement made during the financial crisis period 2008. The management should focus on the domestic acquisitions since the investors are showing a negative reaction to those. And they can make the deals by financing through the cash since the investors are positively and spontaneously to such deals. Since it is the most complex strategic decision the management should provide the details regarding the deals to the investors. The result of the study will contribute to the area of strategic management and also it will be helpful to managers and investors.

Limitations of the study: This research is not free from the limitations. So it may not give a broad idea about the behavior of the investors around the announcement. We took only stock price data for four year, so it may not give any comprehensive results.

Future research scope: Further studies can be done by having industry wise classification, which would enable to get a clarity for shareholders. Research can also be done by including factors like corporate governance and macro economics variables.

Reference

1. Beltratti, A., & Paladino, G. (2013). Is M&A different during a crisis? Evidence from the European banking sector. *Journal of Banking & Finance*, 37(12), 5394-5405.
2. Bruner, R. F. (2002). Does M&A pay? A survey of evidence for the decision-maker. *Journal of Applied Finance*, 12(1), 7-27.
3. F. Tao, et al.,(2016). Do cross-border mergers and acquisitions increase short-term market performance? The case of Chinese Firms, *International Business Review*
4. Faccio, M., McConnell, J. J., & Stollin, D. (2006). Returns to acquirers of listed and unlisted targets. *Journal of Financial and Quantitative Analysis*, 41(01), 197-220.
5. Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International economic review*, 10(1), 1-21.
6. King, D. R., Dalton, D. R., Daily, C. M., & Covin, J. G. (2004). Meta-analyses of post-acquisition performance: Indications of unidentified moderators. *Strategic management journal*, 25(2), 187-200.
7. Kiyamaz, H. (2009). The impact of country risk ratings on US firms in large cross-border acquisitions. *Global Finance Journal*, 20(3), 235-247.
8. Langetieg, T. C. (1978). An application of a three-factor performance index to measure stockholder gains from merger. *Journal of Financial Economics*, 6(4), 365-383.
9. Malkiel, B. G., & Fama, E. F. (1970). Efficient capital markets: A review of theory and

empirical work. *The Journal of Finance*, 25(2), 383-417.

10. Masulis, R. W., Wang, C., & Xie, F. (2007). Corporate governance and acquirer returns. *Journal of Finance*, 62(4), 1851-1889.
11. Mitchell, M. L., & Stafford, E. (2000). Managerial Decisions and Long-Term Stock Price Performance*. *The Journal of Business*, 73(3), 287-329.
12. Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2005). Wealth destruction on a massive scale? A study of acquiring-firm returns in the recent merger wave. *The Journal of Finance*, 60(2), 757-782.
13. Nicholson, R. R., & Salaber, J. (2014). The impact of the financial crisis on the performance of European acquisitions. In *International business and institutions after the financial crisis* (pp. 73-92). Palgrave Macmillan UK.
14. Ning, L., Kuo, J. M., Strange, R., & Wang, B. (2014). International investors' reactions to cross-border acquisitions by emerging market multinationals. *International Business Review*, 23(4), 811-823.
15. Schijven, M., & Hitt, M. A. (2012). The vicarious wisdom of crowds: Toward a behavioral perspective on investor reactions to acquisition announcements. *Strategic Management Journal*, 33(11), 1247-1268.
16. Shleifer, A. (2000). *Inefficient Markets: An introduction to behavioural finance*. OUP Oxford.
17. Walker, M. M. (2000). Corporate takeovers, strategic objectives, and acquiring-firm shareholder wealth. *Financial management*, 53-66.
18. Wansley, J. W., Lane, W. R., & Yang, H. C. (1983). Abnormal returns to acquired firms by type of acquisition and method of payment. *Financial management*, 16-22.