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Stock price reaction to merger announcements: an empirical note on Indian markets

Abstract

This research work empirically investigates the differences in stock price reaction of target and acquiring companies due to merger announcements. The role of insider information before merger announcements is also empirically tested and explained to be the cause for observed pre-announcement price run-ups. The investigation has been carried out using traditional event study methodology. Various event windows have been considered and compared to find out the period where the price run-up initiates. The post-merger price variations have also been studied. This analysis is suggestive of an upward trend in cumulative abnormal returns for companies in the pre-announcement period which in turn is indicative of insider information or anticipation. In addition, the evidence also suggests that around the announcement period the returns for the acquiring companies are higher than those for the target companies. In the post amalgamation period there is a downward trend in the cumulative returns implying a negative result of the merger.

Keywords: India, event study, mergers & acquisitions.

JEL Classification: G11, G34, G39.

Introduction

Traditional event-study residual analysis is used for testing a signaling model. Residual analysis in the event studies is the primary means to indicate how the market reacts to a signal (Merger Announcement). Event studies using residual analysis have reported a positive, monotonic market reaction to a signal. Abnormal security returns are usually used in such event studies.

The announcement of a Merger or an Acquisition is considered as an event in this study. The objectives of this paper are: (a) to investigate whether insider information or publicly available information drives the observed price pattern of the acquirer and target firms using event studies, and (b) to examine the effect of merger announcement on both target and acquirer companies' stock prices. A comparison of the price run ups prior to the announcement of the merger and post announcement price pattern has also been studied. Further we also analyze the merged entity's stock price post merger, by examining the daily closing price of all the stocks prior and post merger announcement.

The rest of the paper is divided into four sections. Section 1 reviews the literature related to event studies, especially relating to merger. The data description and methodology are presented in section 2. The empirical findings are given in section 3 and section 4 concludes.

1. Literature review

1.1 Event studies. The financial event study, as we define it, examines the impact of an event on the

stock returns of a firm, which is directly translated into the value of the firm. Published and unpublished studies on event study methodologies and applications are found aplenty. Khotari and Warner (2005), MacKinlay (1997) and Serra (2002) provide some of the best reviews of traditional event studies and techniques.

1.2. Merger events. It is usually seen that there is a great deal of attention when the actual merger occurs. Nelson (1959) documents merger waves dating back to the period of 1898-1902 while Holmstrom and Kaplan (2001), among others, describe the merger waves in the 1980s and 1990s. A good summary of the use of event studies for the assessment of merger effects on profits and efficiency is provided by Cox and Portes (1998). Pautler (2003) also summarizes the use of event studies for mergers and acquisitions. According to common practice, the announcement of a proposed merger can be analyzed by checking the stock returns of the acquiring and acquired firm on announcement dates (or other relevant news), as well as the stock returns of competitors to help them determine whether or not a proposed merger is likely to be anticompetitive.

1.3. Post merger performance. Here, a brief and selective review of prior research on long-run post-merger underperformance is presented. A comprehensive review has been carried out by Agrawal and Jaffe (2000). Langetieg (1978) reported significant cumulative abnormal returns (CARs) between -2.23% and -2.62% over a six-year period after a merger. Asquith (1983) found that acquiring firms' CAR decreases by 7.2% in one-year following the completion of mergers. Malatesta (1983) found a statistically significant CAR of -7.6% one-year after the merger announcement.

Jensen and Ruback (1983) surveyed seven studies, and reported an average CAR of -5.5% one year post merger. Magenheimer and Mueller (1988) reported a significant CAR of -2.4% in three years post merger. Lahey and Conn (1990) found a significant three-year CAR of -10.2% and -38.57% respectively relative to two benchmarks. The results also supported the robustness of previous studies that found significant negative post merger performance of acquiring firms. Agrawal *et al.* (1992) in a comprehensive analysis of the post-merger stock performance used a large sample of mergers over a 30-year period. They found that acquiring firms suffer a statistically significant wealth loss of about -10% over five years postmerger. Anderson and Mandelker (1993) also found significant five-year CARs of -9.6% and -9.3% under a size and book-to-market adjustment model respectively. Loughran and Vijh (1997) reported a statistically significant five-year BHAR (buy-and-hold abnormal return) of -15.9% following mergers relative to a size and book-to-market adjusted benchmark. Rau and Vermaelen (1998) used the size and book-to-market adjustment method and reported a statistically significant three-year CAR of -4%. Recently, in a review paper, Agrawal and Jaffe (2000) concluded that the long-run post-merger stock performance is significantly negative.

2. Data and methodology

To obtain sample for the study, all firms that were either an acquirer or a target of the merger announcements during the period of 2000-2007 are identified. In order to be included in the study, both the acquirer and the target firms should be listed either in the Bombay Stock Exchange (BSE) or National Stock Exchange (NSE) during the period (the two premier stock exchanges of India). A total of 25 firms met the above criteria and hence form the final sample in the study. The data on stock prices of the sample for the entire period of study are extracted from cmie-prowess, www.captialine.com, www.bse-india.com and www.nseindia.com. The announcement date is identified as the day when the target or acquiring company first publishes disclosed information about the merger. This was specified as day zero in the event time of our study. There were cases where some public announcements were also made after the market closed and some were made before. Importantly, in the latter case, market reaction took place a day before the merger news appeared in the national dailies. Hence, in this case we might incorrectly interpret the market reaction as a day before the news appeared in the national dailies as existence of “abnormal return” based on trading on non-public information. Thus, in order to eliminate this bias the

announcement date is defined as a range covering the date when the news appeared in the national dailies and the immediate preceding day, if it was a trading day. In such case, stock price for day ‘0’, i.e. the announcement date is calculated using a simple average of prices on the day when the news appeared in the national dailies and on the day immediately preceding it, if it was a trading day. For each of the securities, the daily return is calculated using residual analysis as follows

$$R_{jt} = (P_{jt} - P_{jt-1}) / P_{jt-1}, \quad (1)$$

where R_{jt} is the daily return for security j on day t and P_{jt} is the closing price for security j on day t . In order to measure the magnitude of pre-announcement, post announcement and actual merger of companies’ price variations, daily abnormal returns and cumulative daily abnormal returns are calculated. Several event windows have been taken to measure the magnitude of price variations for different time periods. For each of the days in the event window, the daily abnormal returns, cross sectional average abnormal returns (AAR_t), and cumulative average abnormal returns ($CAAR_t$) are calculated.

The $CAAR_t$ is calculated using the following,

$$CAAR_t = CAAR_{t-1} + AAR_t,$$

where t refers to the event period.

In light of the above, the hypothesis to be tested is “the abnormal returns on the announcement day and around the merger announcement are less than or equal to zero”. If AAR and CAR (post announcement) are greater than 0 and are statistically significant, it indicates that the stock prices on average react positively to merger announcement.

The various event windows considered are [-10, +5], [-15, +10], [-25, +15], i.e. for example [-10, +5] indicates a time period of 10 days prior to the announcement day and 5 days after the announcement day. Now for each of the event windows the pre-announcement and post-announcement periods of the acquirer and target companies are compared and analyzed. This is carried out by using descriptive statistics as well as the test for equality of means, and t-statistic. The above tests are carried out using normality assumption. But since there is a little variation from normality a non-parametric test, Wilcoxon signed rank test have also been carried out to test the hypothesis. The charts for the complete event window are analyzed by comparing the acquiring and target company’s returns during the period. Further the charts of the returns for hundred days post amalgamation are studied.

3. Results

If there were no unusual price movements prior to the announcement date, one would expect both AAR and CAAR to fluctuate about zero. However, if there is a leakage of insider information just prior to the announcement date, this should show up in the form of positive or negative daily average abnormal returns as 't' approaches zero and a corresponding build up in CAAR.

3.1. Event window [-10, +5]. Table 1 in the appendix presents the AAR value, the t-statistic and the CAAR values for the interval [-10, +5] of the acquirer and the target companies. The table also indicates that the AAR's for the pre-announcement period [-10,-1] are positive on all days except for one day in the case of the acquirer. The corresponding t-statistics suggest that there are no significant values at 5% significance level. For the target company, there was a significant variation in AAR's as it has on an average alternated from positive to negative values from [-10, -3] and thereafter remained positive. Abnormal returns are positive and significant on the day of announcement for the acquiring and target companies. In the post announcement period, on day 5 the abnormal returns

are negative for the acquirer. For the target company AAR's are negative on all days except for day 3 and day 0.

Figure 1 presents the cumulative average abnormal returns over the interval of [-10, -1]. It also indicates a price run-up for the acquirer company indicating a leakage of information or an anticipation of some good news. Though the pattern is not consistent for the target companies it is indicative of an increasing trend which may be due to leakage of insider information on the news of merger just prior to the announcement. It presents an increasing trend for the acquirer even after day 0 whereas there is an immediate drop for the target. The chart also indicates that in the pre-announcement period there is a 133% increase in abnormal returns for the acquirer companies which accounts for 5.99% of the total increase and a 0.5% decrease for the target firms. In the post announcement period the acquirer firms show a 28% increase which accounts for 622.22% of the total increase and the target firms show a 45.3% decrease which accounts for a total of 114% of the total decrease. The descriptive statistics for the interval discussed above is presented in Table 2 of the appendix.

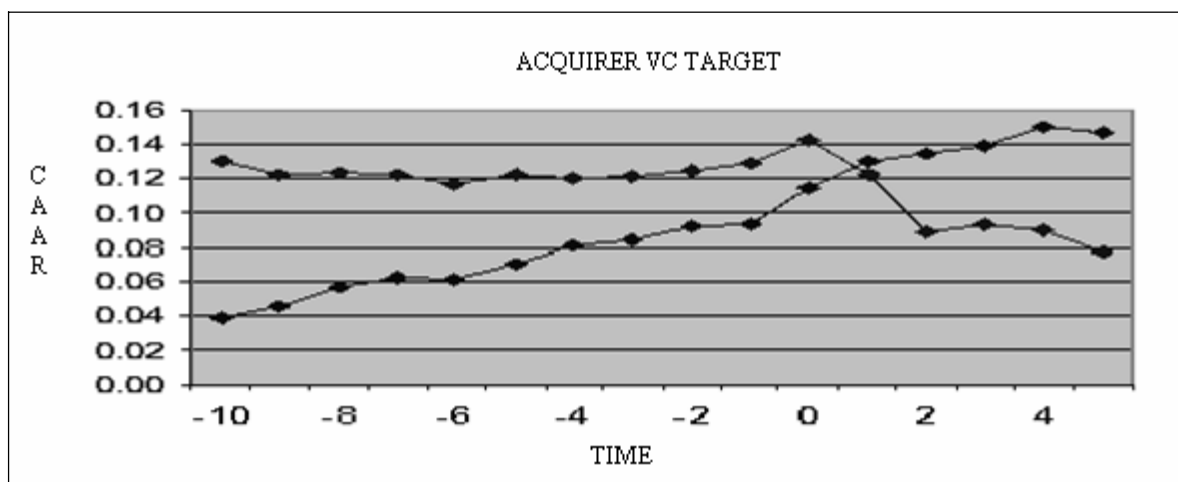


Fig. 1. CAAR for the period [-10, +5]

The descriptive statistics for the post announcement period [0, +5] for the event window is presented in Table 3 of the appendix. Since the descriptive statistics indicate a higher mean for the acquirer than the target it implies that the acquiring companies have higher abnormal returns than target companies in this event window.

3.2. Event window [-15, +10]. Table 4 in the appendix presents the AAR value, the t-statistic and the CAAR values for the sub-interval [-15, +10]. In the pre-announcement period, i.e. [-15, -1] the table for the acquirer companies indicates three negative AAR values indicating a slight fall in the returns and no significant values are found at 5% significance

level. For the target companies there are 5 negative values of AAR, which accounts for the variations in the increasing trend of CAAR. In the post announcement period, i.e. [0, +10], the AAR's for the acquiring companies are positive up to day 4 and then they become negative. On days 6, 7, 8 the returns are negative and significant showing negative effect on the merger for the acquiring companies. For the target companies the abnormal returns are negative and significant on day 2 indicating the negative effect of merger. Figure 2 indicates that till the announcement day, CAAR's for both acquirer and target companies are increasing and thereafter decreasing. CAAR's for the target are dropping faster

than for the acquirer firms. In the pre-announcement period there is a 997% increase for the acquirer and 31% increase for the target firms. In the period [-15, -10] there is a 340% increase for the acquirer and a 32.4% increase for the target firms accounting for 15.31% and 60.6% of their

total increases respectively. In the post announcement period there is a 1.74 E-2% decrease for the acquirer firms and a 60% decrease for the target firms. Similarly, in period [+10, +5] there is a 21.92% decrease for the acquirer firms and a 27.5% decrease for the target firms.

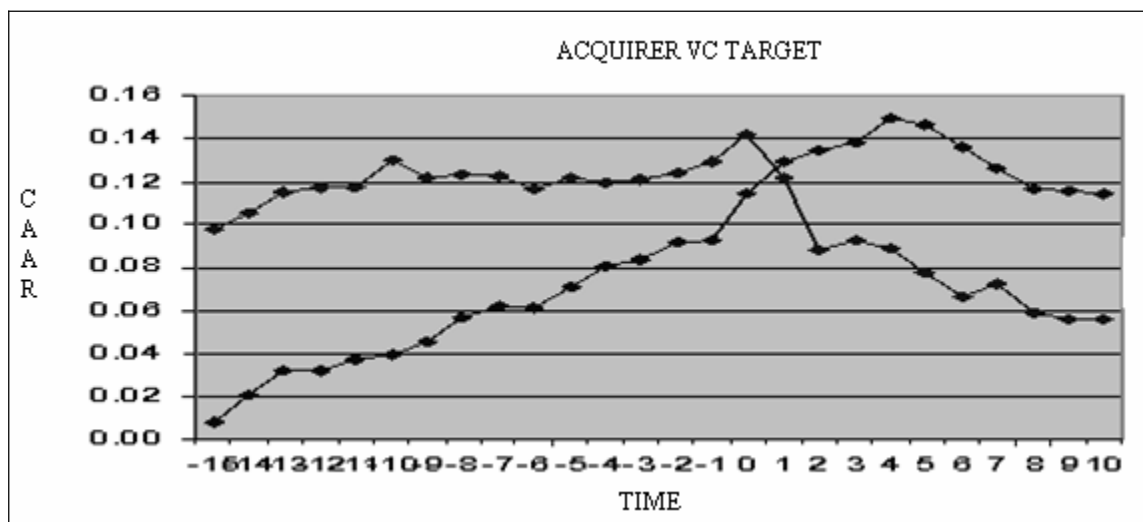


Fig. 2. CAAR for the period [-15, +10]

The descriptive statistics for the period [-15, -1] are presented in Table 5 in the appendix. The descriptive statistics for the post announcement period [0, +10] are presented in Table 6.

Since the descriptive statistics indicate a higher mean of acquirer than target it implies that the acquirer companies have higher share prices than target companies in the event window. It also indicates that this variation in mean is decreasing as the number of days increase.

3.3. Event window [-25, +15]. Table 7 in the appendix presents the AAR value, the t-statistic and the CAAR values for the interval [-25, +15]. In the pre-announcement period, i.e. [-25, -1] there are 7 negative values of AAR in the acquirer table and 8 negative values of AAR in target table. On the day $t = (-16)$ the AAR is positive and significant at 5%. In the post announcement period [0, +15], from the table for acquiring companies it can be inferred that the same results as for the [0, +10] period and with 7 negative AAR's on the whole. For the target companies returns become positive after day 11. Figure 3 indicates that the CAAR for the target firms is greater than that of acquirer firms prior to the announcement day. Thereafter the drop for the target firms is greater than that of the acquiring firms making the CAAR of acquirer firms greater than that of target firms in the post-announcement period. In the pre-announcement period there is a 2222.22% increase for the acquirer firms and 53.4% increase for the target companies. In the post announcement period

there is a 4.5% increase for acquirer, and 39.8% decrease for the target firms in this event window.

In the period [-25, -15] there has been a 252% increase for the acquiring firms and a 5.68% increase for the target firms which accounts for a 11.351% and 10.368% of the total increase respectively. Similarly in the period [+15, +10] it can be observed that there is a 18.58% increase for the acquiring firms, which accounts for 412.88% of the total increase. Therefore it can be concluded that the maximum percentage increase in the pre-announcement period for the acquiring and target firms has been during [-15, -10]. Also the maximum percentage decrease in the post-announcement period has been during the [+5, +10] period for the acquirer and target firms.

The descriptive statistics for the periods [-25, -1] and [0, +15] are presented in Table 9 of the appendix. The descriptive statistics are suggestive of a difference in mean and the difference decreasing with the increase in number of days in the analysis. This also implies that the returns of the acquirer firms are higher than those of target companies.

3.4. Post amalgamation. Table 10 in the appendix presents the AAR's and CAAR's for various companies after the merger for the period of hundred days. Figure 4 presents the CARR for 100 days post amalgamation. It can be inferred from the chart that there is a downtrend in the CAAR after the amalgamation is completed.

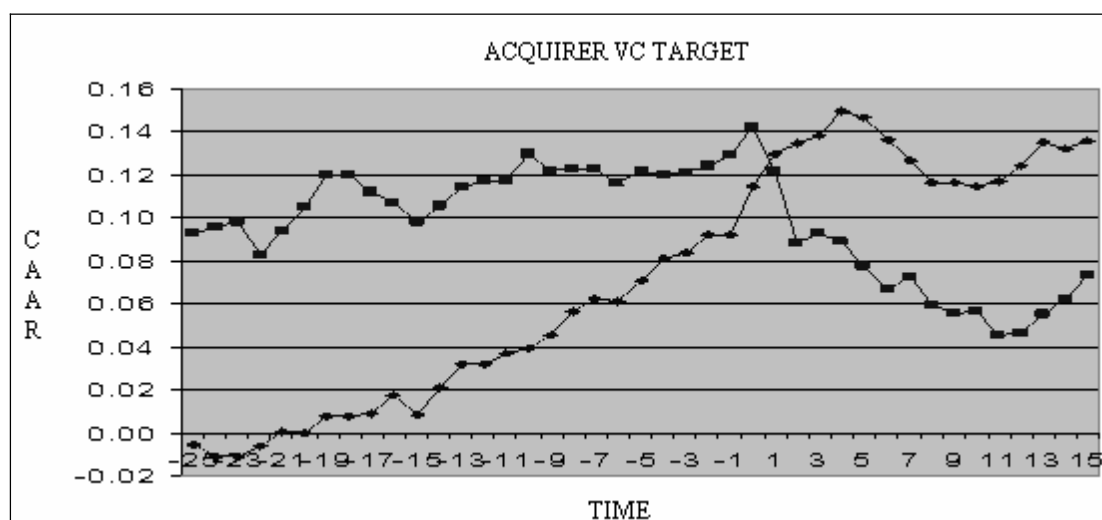


Fig. 3. CAAR for the period [-25, +15]

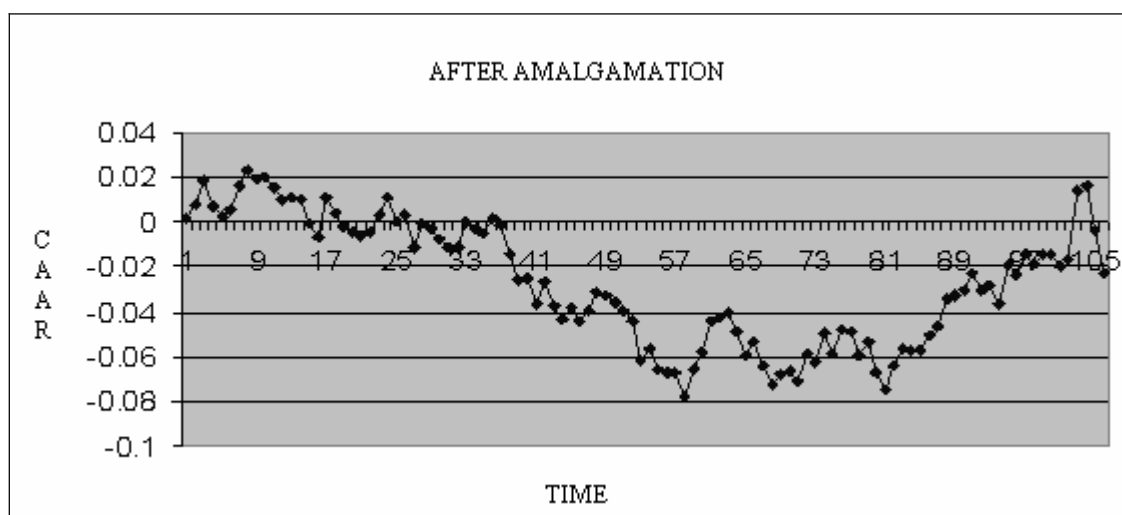


Fig. 4. CAAR post amalgamation

Conclusions

This study documents the market behavior around the merger announcement date for 25 stocks listed on the Bombay Stock Exchange in India for the period of 2000-2007. An event study is conducted using several event windows to examine when the price run-up begins and when the price falls down. It is found that on an average, both the target and the acquiring companies show an uptrend in the CAAR few days prior to the announcement. This may be due to anticipation of the merger or leakage of information. The increase in the cumulative average returns (CAAR) around the merger announcement pe-

riod (uptrend) for the acquiring companies is greater as compared to the target companies. It is also observed that there is a sudden downfall in the CAAR for the target companies from the day after the announcement which continues for a period of ten trading days. The AAR on day two after the announcement is negative and is also statistically significant. There is also a decline in the returns after the actual amalgamation between the companies. In general, the behavior of the AAR's and CAAR's is found to be in accordance with expectation, thereby lending support to the hypothesis that Indian Stock Market is semi-strong efficient.

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Appendix A

Table 1. AAR, CAAR and t-statistic for acquirer and target companies for [-10, +5]

DAY	ACQUIRER			TARGET		
	AAR	CAAR	t-statistic	AAR	CAAR	t-Statistic
-10	0.00257	0.32962	0.03965	0.0124092	1.098866961	0.129752961
-9	0.00600	1.26629	0.04565	-0.0076998	-0.979134508	0.122053155
-8	0.01088	1.39456	0.05652	0.0010562	0.141933435	0.12310942
-7	0.00568	0.80688	0.06221	-0.0007249	-0.126970798	0.122384483
-6	-0.00093	-0.14926	0.06128	-0.0060606	-1.071210859	0.116323807
-5	0.00963	1.12216	0.07090	0.0056573	0.797846204	0.121981113
-4	0.01011	1.67832	0.08101	-0.002204	-0.307367212	0.11977621
-3	0.00245	0.39374	0.08347	0.0011628	0.12214198	0.120939101
-2	0.00866	1.45336	0.09213	0.003493	0.433632625	0.124432211
-1	0.00029	0.05771	0.09242	0.0046709	0.810010075	0.129103143
0	0.02201	2.52814	0.11443	0.0131118	0.603674775	0.142215038
1	0.01528	1.78827	0.12971	-0.020691	-1.138022945	0.121523208
2	0.00511	0.63823	0.13482	-0.0333129	-2.697600071	0.088210279
3	0.00341	0.44360	0.13822	0.0043363	0.308886201	0.092546658
4	0.01119	1.80065	0.14942	-0.0032549	-0.311715817	0.089291735
5	-0.00288	-0.47024	0.14653	-0.0115729	-1.3746426	0.077718762

Table 2. Descriptive statistics for period [-10,-1]

	Mean	Std. deviation	Variance	Skewness (statistic)	Kurtosis (statistic)
AAR_acq_pre	0.0055307	0.0042778	0.0000183	-0.176307	1.4387051
AAR_tar_pre	0.0011760	0.0058737	0.0000345	0.2406052	2.3894686

Table 3. Descriptive statistics for period [0,+5]

	Mean	Std. deviation	Variance	Skewness (statistic)	Kurtosis (statistic)
AAR_acq_post	.0114000	.0076026	.0000578	.280599	1.387375
AAR_tar_post	-.0085641	.0169293	.0002866	-.185000	1.573240

Table 4. AAR, CAAR and t-Statistic for acquirer and target companies for [-15, +10]

DAY	ACQUIRER			TARGET		
	AAR	CAAR	t-Statistic	AAR	CAAR	t-Statistic
-15	-0.00932	-1.30113	0.00842	-0.009278249	-0.700819388	0.097939711
-14	0.01283	1.45672	0.02125	0.007573201	0.776882203	0.105512912
-13	0.01106	1.06088	0.03231	0.0092812	1.278817684	0.114794112
-12	-0.00007	-0.01324	0.03224	0.002383188	0.319365241	0.1171773
-11	0.00484	0.95116	0.03708	0.000166456	0.02542593	0.117343756
-10	0.00257	0.32962	0.03965	0.012409205	1.098866961	0.129752961
-9	0.00600	1.26629	0.04565	-0.007699806	-0.979134508	0.122053155
-8	0.01088	1.39456	0.05652	0.001056265	0.141933435	0.12310942
-7	0.00568	0.80688	0.06221	-0.000724936	-0.126970798	0.122384483
-6	-0.00093	-0.14926	0.06128	-0.006060677	-1.071210859	0.116323807
-5	0.00963	1.12216	0.07090	0.005657307	0.797846204	0.121981113
-4	0.01011	1.67832	0.08101	-0.002204903	-0.307367212	0.11977621
-3	0.00245	0.39374	0.08347	0.001162891	0.12214198	0.120939101
-2	0.00866	1.45336	0.09213	0.00349311	0.433632625	0.124432211
-1	0.00029	0.05771	0.09242	0.004670932	0.810010075	0.129103143
0	0.02201	2.52814	0.11443	0.013111895	0.603674775	0.142215038
1	0.01528	1.78827	0.12971	-0.02069183	-1.138022945	0.121523208
2	0.00511	0.63823	0.13482	-0.033312928	-2.697600071	0.088210279
3	0.00341	0.44360	0.13822	0.004336379	0.308886201	0.092546658
4	0.01119	1.80065	0.14942	-0.003254923	-0.311715817	0.089291735
5	-0.00288	-0.47024	0.14653	-0.011572973	-1.3746426	0.077718762
6	-0.01029	-2.19027	0.13624	-0.010881881	-0.865990101	0.066836881
7	-0.00970	-1.98335	0.12655	0.005810101	0.461668632	0.072646982
8	-0.01017	-2.47936	0.11637	-0.013517598	-4.929796788	0.059129384
9	-0.00025	-0.04967	0.11612	-0.003255778	-0.489723108	0.055873605
10	-0.00171	-0.29317	0.11441	0.000450414	0.066104187	0.056324019

Table 5. Descriptive statistics for period [-15,-1]

	Mean	Std. deviation	Variance	Skewness (statistic)	Kurtosis (statistic)
AAR_acq_pre	0.004976	0.0059498	0.0000354	-0.742809	2.9617665
AAR_tar_pre	0.001459	0.0061400	0.0000377	-0.110068	2.1954453

Table 6. Descriptive statistics for period [0,+10]

	Mean	Std. deviation	Variance	Skewness (statistic)	Kurtosis (statistic)
AAR_acq_post	.0020000	.0107331	.0001152	.4629344	1.9811890
AAR_tar_post	-.0066163	.0131795	.0001737	-.4806730	2.4621519

Table 7. AAR, CAAR and t-statistic for acquirer and target companies for [-25, +15]

DAY	ACQUIRER			TARGET		
	AAR	CAAR	t-Statistic	AAR	CAAR	t-Statistic
-25	-0.00046	-0.07092	-0.00539	-7.82276E-05	-0.011157188	0.092672717
-24	-0.00535	-0.93165	-0.01074	0.003208927	0.479096273	0.095881643
-23	-0.00039	-0.11469	-0.01113	0.00229323	0.281404141	0.098174873
-22	0.00522	0.67204	-0.00591	-0.015356314	-1.320780107	0.082818559
-21	0.00672	0.83693	0.00081	0.011329017	1.332662053	0.094147576
-20	-0.00066	-0.12053	0.00015	0.010446612	1.470490585	0.104594188
-19	0.00750	1.53292	0.00766	0.015124222	1.398515426	0.11971841
-18	0.00012	0.03417	0.00778	0.000236519	0.026244228	0.11995493
-17	0.00117	0.19485	0.00895	-0.007996916	-0.836641096	0.111958014
-16	0.00879	1.99744	0.01774	-0.004740053	-0.563901047	0.10721796
-15	-0.00932	-1.30113	0.00842	-0.009278249	-0.700819388	0.097939711
-14	0.01283	1.45672	0.02125	0.007573201	0.776882203	0.105512912
-13	0.01106	1.06088	0.03231	0.0092812	1.278817684	0.114794112
-12	-0.00007	-0.01324	0.03224	0.002383188	0.319365241	0.1171773
-11	0.00484	0.95116	0.03708	0.000166456	0.02542593	0.117343756
-10	0.00257	0.32962	0.03965	0.012409205	1.098866961	0.129752961
-9	0.00600	1.26629	0.04565	-0.007699806	-0.979134508	0.122053155
-8	0.01088	1.39456	0.05652	0.001056265	0.141933435	0.12310942
-7	0.00568	0.80688	0.06221	-0.000724936	-0.126970798	0.122384483
-6	-0.00093	-0.14926	0.06128	-0.006060677	-1.071210859	0.116323807
-5	0.00963	1.12216	0.07090	0.005657307	0.797846204	0.121981113
-4	0.01011	1.67832	0.08101	-0.002204903	-0.307367212	0.11977621
-3	0.00245	0.39374	0.08347	0.001162891	0.12214198	0.120939101
-2	0.00866	1.45336	0.09213	0.00349311	0.433632625	0.124432211
-1	0.00029	0.05771	0.09242	0.004670932	0.810010075	0.129103143
0	0.02201	2.52814	0.11443	0.013111895	0.603674775	0.142215038
1	0.01528	1.78827	0.12971	-0.02069183	-1.138022945	0.121523208
2	0.00511	0.63823	0.13482	-0.033312928	-2.697600071	0.088210279
3	0.00341	0.44360	0.13822	0.004336379	0.308886201	0.092546658
4	0.01119	1.80065	0.14942	-0.003254923	-0.311715817	0.089291735
5	-0.00288	-0.47024	0.14653	-0.011572973	-1.3746426	0.077718762
6	-0.01029	-2.19027	0.13624	-0.010881881	-0.865990101	0.066836881
7	-0.00970	-1.98335	0.12655	0.005810101	0.461668632	0.072646982
8	-0.01017	-2.47936	0.11637	-0.013517598	-4.929796788	0.059129384
9	-0.00025	-0.04967	0.11612	-0.003255778	-0.489723108	0.055873605
10	-0.00171	-0.29317	0.11441	0.000450414	0.066104187	0.056324019
11	0.00264	0.56180	0.11705	-0.010676998	-1.002761568	0.045647022
12	0.00746	1.09367	0.12451	0.000893798	0.139637733	0.046540819
13	0.01075	1.59060	0.13526	0.00861778	0.827937655	0.055158599
14	-0.00335	-0.62717	0.13191	0.007421829	0.686011282	0.062580428
15	0.00377	0.61657	0.13567	0.010539692	1.213451234	0.07312012

Table 8. Descriptive statistics for period [-25,-1]

	Mean	Std. Deviation	Variance	Skewness (statistic)	Kurtosis (statistic)
AAR_acq_pre	0.0038979	0.0054955	0.0000302	-0.374875	2.5342534
AAR_tar_pre	0.0014541	0.0073892	0.0000546	-0.199931	2.5713243

Table 9. Descriptive statistics for period [0,+15]

	Mean	Std. Deviation	Variance	Skewness (statistic)	Kurtosis (statistic)
AAR_acq_post	.0027044	.0000855	.0092466	.3115322	2.3371254
AAR_tar_post	-.0034989	.0125897	.0001585	-.7357263	2.8130977

AAR_acq_pre : Average Abnormal Return of the Acquirer pre announcement.

AAR_tar_pre : Average Abnormal Return of the Target pre announcement.

AAR_acq_post : Average Abnormal Return of the Acquirer post announcement.

AAR_tar_post : Average Abnormal Return of the Target post announcement.

Table 10. AAR and CAAR values for the period of 100 days post amalgamation

DAY	AAR	CAAR	DAY	AAR	CAAR	DAY	AAR	CAAR
1	0.001737	0.001737	35	-0.0022	-0.00507	69	0.004503	-0.06805
2	0.005864	0.007601	36	0.006754	0.001683	70	0.001454	-0.0666
3	0.011101	0.018702	37	-0.00332	-0.00164	71	-0.00411	-0.07071
4	-0.01163	0.007073	38	-0.0127	-0.01435	72	0.012008	-0.0587
5	-0.00443	0.002641	39	-0.01138	-0.02572	73	-0.00389	-0.06259
6	0.002913	0.005554	40	0.000497	-0.02523	74	0.012723	-0.04987
7	0.010895	0.016449	41	-0.01112	-0.03635	75	-0.00852	-0.05839
8	0.006688	0.023138	42	0.009806	-0.02654	76	0.010036	-0.04835
9	-0.00392	0.019214	43	-0.0111	-0.03763	77	-0.0001	-0.04845
10	0.000926	0.02014	44	-0.00578	-0.04341	78	-0.01115	-0.0596
11	-0.0044	0.015738	45	0.005115	-0.03829	79	0.006186	-0.05341
12	-0.00558	0.010158	46	-0.00562	-0.04391	80	-0.01344	-0.06686
13	0.000673	0.010831	47	0.003988	-0.03993	81	-0.00769	-0.07454
14	-0.00076	0.010076	48	0.008938	-0.03099	82	0.010487	-0.06406
15	-0.01045	-0.00038	49	-0.0016	-0.03259	83	0.007818	-0.05624
16	-0.00639	-0.00677	50	-0.00278	-0.03537	84	-0.00077	-0.05701
17	0.017674	0.010903	51	-0.00413	-0.0395	85	-0.00046	-0.05747
18	-0.00722	0.003686	52	-0.00479	-0.04429	86	0.007479	-0.04999
19	-0.00548	-0.00179	53	-0.01723	-0.06152	87	0.00335	-0.04664
20	-0.00274	-0.00453	54	0.005324	-0.05619	88	0.012325	-0.03431
21	-0.00131	-0.00584	55	-0.00975	-0.06595	89	0.001488	-0.03283
22	0.001158	-0.00468	56	-0.00086	-0.06681	90	0.002382	-0.03044
23	0.00794	0.003258	57	-6.6E-05	-0.06687	91	0.007861	-0.02258
24	0.007972	0.01123	58	-0.01122	-0.0781	92	-0.0077	-0.03028
25	-0.01096	0.00027	59	0.012273	-0.06582	93	0.001909	-0.02837
26	0.003388	0.003658	60	0.007588	-0.05824	94	-0.00824	-0.03661
27	-0.01479	-0.01113	61	0.014302	-0.04393	95	0.018063	-0.01855
28	0.010789	-0.00034	62	0.001016	-0.04292	96	-0.00531	-0.02386
29	-0.0025	-0.00284	63	0.002296	-0.04062	97	0.009448	-0.01441
30	-0.00447	-0.00731	64	-0.00835	-0.04897	98	-0.00483	-0.01924
31	-0.00363	-0.01094	65	-0.01044	-0.05941	99	0.005203	-0.01404
32	-0.00055	-0.01149	66	0.006353	-0.05306	100	-3.7E-05	-0.01407
33	0.011689	0.000198	67	-0.01074	-0.0638			
34	-0.00307	-0.00287	68	-0.00876	-0.07256			