

## Stock Market Reactions to Mergers and Acquisitions : Empirical Evidence from Indian Stock Market

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### Abstract

The present study is conducted with a sample of 41 companies by using event study methodology to measure the change in share prices and trading quantity after the merger announcement date. It is found that abnormal returns are significant in 10 day, 20 day and 30 day event window, but there is no significant abnormal return in 5-day event window. The impact of M&As on trading quantity is examined by using two methods. In percentile method, more than 53 per cent of sample companies have shown significant change in trading quantity after merger announcement date, while in case of T-test (paired two samples for means), the results showed that there is no significant change in average trading quantity in different event window. Large companies such as Ranbaxy Laboratories, Tata Steel, Wipro, Tips, Union Bank of India faced the negative impact on trading quantity after the mergers announcement. The study also revealed that there has been a positive impact of M&As on liquidity only in 30 companies in case of 30 day event window.

### Key Words

Event window, abnormal return, cumulative abnormal return, trading quantity, merger and acquisitions.

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### INTRODUCTION

Merger and acquisitions (M&As) is a critical mechanism to achieve and sustain competitive advantage and growth through inorganic means. With the passage of time, Indian companies have begun developing the relevant capabilities to create

more value from these modes. There has been significant growth in M&As activity in India since 1991. The total number of M&As announced in 2007 stood at 661, with a total announced value of US\$ 51.17 billion, against 480 deals in 2006 with a total announced value of US\$ 20.30 billion. There were 313 domestic deals (both acquirer and target being Indian) with an announced value of US\$ 2.83 billion and 348 cross-border deals with an announced value of US\$ 48.34 billion. As many as 240 of the cross-border deals were outbound (Indian companies acquiring businesses outside India) with a value of US\$ 32.73 billion and 108 were inbound deals (international companies or their subsidiaries acquiring Indian businesses) with an announced value of close to \$ 15.61 billion. Due to the rapid growth in M&As activity by Indian companies, India has emerged as the most acquisitive nation in emerging nations. Thus, the year 2007 turned into a remarkable year for Indian M&As both at home and abroad.

### REVIEW OF LITERATURE

Various articles on some aspects of mergers and acquisitions appeared in various journals and magazines, but they are restricted in nature and do not show a comprehensive picture. A brief review of some of the relevant literature is as under :

**Thompson and Mullineaux (1995)** conducted an event study which dealt with shareholder's reaction to the announcement of the merger of two Bank Holding Companies (BHC) for a time period of 1980-1987. It is found that positive abnormal returns accrued to the shareholders of the acquired firm.

**Aggarwal and Singh (2002)** examined the stock price effects and trading volume pattern for the possible existence of informed trading prior to merger announcement of the companies for which merger announcement date has been announced during 1996-1999. The analysis has been done for 150 trading days prior to the announcement and 15 days on and after the announcement date. It is found that there are eight companies out of 40, which do not exhibit insider-trading activity.

**Kale and Singh (2005)** analyzed the challenges and opportunities in value creation for Indian companies. The authors divided the post liberalization period in two parts: 1992-1997 and 1998-2002. During 1992-1997, there was no significant difference between returns accruing to relate and those to unrelated acquisitions while making a comparison to U.S. While in later period (1998-2002), there was a distinct difference in acquisition value creation between related and unrelated acquisitions. The stock returns pursuant to acquisition announcements were much more favourable for related acquisition (+3.5 per cent) than for unrelated

companies (+1 per cent).

**Tambi (2005)** evaluated the impact of mergers on Indian companies through a database of 40 companies, using paired t-test for mean difference by taking parameters such as total performance improvement, economies of scale, operating synergy and financial synergy. The results showed that Indian companies were no different than the companies in other parts of the world and mergers failed to contribute positively in the performance improvement.

**Bajo (2006)** investigated the role of abnormal trading volume on the Italian equity market as revealing new information. The study found the strong excess returns (higher when no new information is simultaneously released) around extreme trading levels and strong evidence of price continuation, even though mainly concentrated on the day after the event.

**Shaheen (2006)** used an event study methodology to empirically examine stock market reactions to acquisition announcements. The results indicated that target firms experience significant positive abnormal returns surrounding an acquisition announcement. In case of hostile transactions, the abnormal returns were maximized one after event day as opposed to event day for target firms. Acquiring firms experienced negative abnormal returns on announcement day for stock financed acquisitions. Based on this observation, a linear regression model was developed to use publicly available information in predicting abnormal returns.

**Rizvi (2008)** studied the phenomenon of acquisition of Gillette India Limited, by Proctor and Gamble and the significance of HR Systems as an integration mechanism (Capasso and Meglio, 2007). This study showed that qualitative and longitudinal studies of M&As are still uncommon and researchers face difficulties in negotiating and gaining access to merging companies.

**Anand and Singh (2008)** analyzed the five mergers in the Indian banking sector to capture the returns to shareholders as a result of the merger announcements using the event study methodology (Brown and Warner, 1980,1985; and MacKinlay,1997), the Fama and Miller market model (1972) and Cox and Portes two-factor Model (1998) form the theoretical framework of this study.

**Singh and Mogla (2008)** analyzed the impact of mergers on corporate performance in India. After considering a sample of 56 companies merged between 1994 and 2002, it is observed that profitability declined significantly after the mergers. However, the profitability of matching firms also declined significantly over the same time period. Regression analysis showed that current ratio, debt equity ratio and size are negatively related to profitability, whereas interest coverage ratio and age affect the profitability positively.

**Zhu and Malhotra (2008)** examined the short-term stock performance of a sample of Indian firms acquiring U.S. firms from 1999-2005. Event study showed that Indian stock market reacts positively to the acquisition announcement and found that positive abnormal returns last only for three days, after which the returns become negative. On carrying out multiple empirical tests, the researcher concluded that the announcement returns in the Indian cross border mergers and acquisitions are mainly driven by price pressure effect rather than information effect.

Earlier studies mainly focus on single parameter like cross-border mergers, M&As in banking, operating synergy, profitability, etc. and used only single event window. But in the present study, an attempt is made to analyze whether there will be any change in the results in case of the companies selected randomly from different sectors if different event windows i.e. 5 day, 10 day, 20 days, 30 days are used.

#### **OBJECTIVES OF THE STUDY**

The main object of the study is to analyze the stock market reactions to mergers and acquisitions in Indian corporate sector. In this broader framework, the following are the specific objectives of the study :

- To examine the significance of abnormal returns and cumulative abnormal returns around the announcement date
- To analyze the changes occurred in trading quantity after the mergers announcement.
- To examine whether there is any change in the results by using different event window.

#### **RESEARCH HYPOTHESES**

To achieve the objectives of the study, the following null hypotheses are formulated and tested :

- $H_{01}$  : There is no significant change in abnormal returns around the mergers announcement.
- $H_{02}$  : There is no significant change in cumulative abnormal returns around the mergers announcement.
- $H_{03}$  : There is no significant change in the trading quantity after the mergers announcement.
- $H_{04}$  : There is no significant change in the results of abnormal returns, cumulative abnormal returns and trading quantity by using different event windows.

## RESEARCH METHODOLOGY

### Data Collection and Sample Design

In order to carry out the analysis, a database of 54 randomly selected companies has been constructed. The data on selected companies on stock prices, trading volume and for sensex are collected from CMIE-PROWESS database. But in case of 5 companies, no data was available on the announcement date and in case of another 3 companies, no data was available for one week just after the announcement date. While in another 5 companies, historical prices were not available for calculating the daily returns. Therefore, the study is conducted only with a sample of 41 companies, which include 8 companies from IT and telecom sector, 6 from pharmaceutical sector, 5 from banking, 4 from automobile and steel sector each, 2 from textile and 3 from FMCG sector and rest 9 are from other sectors like real estate, printing, etc.

### Tools used for Data Analysis

Event study methodology is used to measure the abnormal returns. The independent variable is defined as the time surrounding the merger announcement date. A regression is estimated using the returns on stock  $j$  and the return of a stock market index  $m$ . In this study, BSE-sensex is used as the benchmark index for measuring the market return. The slope coefficient  $\beta$  is the beta value and  $\alpha$  is the y-intercept of the regression equation, which is calculated by using daily returns of company as well as BSE-SENSEX in MS-Excel. Assuming a constant beta value for a given stock  $j$ , the estimated return of stock  $j$  is calculated in the event window by using Sharpe Single Index Model, which is defined as follows :

$$E(R_j) = \alpha + \beta R_{mt} + e \quad \dots (1)$$

Where  $E$  is the expected return of company  $j$  at time  $t$ , while  $\alpha$  and  $\beta$  are parameters of the regression equation.  $\beta$  is the stock beta value and  $R_{mt}$  is the daily return on a stock market index  $m$  (BSE - SENSEX) at time  $t$ . First of all, daily returns are calculated by using -150 to days concerning different event window for the selected companies and market index individually. The calculations are made for daily returns by using the following formulas :

$$R_{jt} = (P_{jt} - P_{jt-1}) / P_{jt-1} \quad \dots (2)$$

Where,

$P_{jt}$  = daily price for the share of a company  $j$  at time  $t$ .

$P_{jt-1}$  = daily price for the share of a company  $j$  at time  $t-1$ .

$$R_{mt} = (I_t - I_{t-1}) / I_{t-1} \quad \dots (3)$$

Where,

$I_t$  = daily value for the market index at time t.

$I_{t-1}$  = daily value for the market index at time t-1.

The abnormal return is defined as the difference between the actual return on a stock j and its expected return E. Therefore, the abnormal return of a stock j at time t is calculated by the equation:

$$AR_{jt} = R_{jt} - E(R)_{jt} \quad \dots (4)$$

The average abnormal return at time t, AR is the arithmetic mean of n stocks. The ARs of each company are averaged for each day surrounding the event day by using the following equation :

$$(AAR)_t = \sum_{i=1}^N AR_{it}/N \quad \dots (5)$$

The cumulative abnormal return for security j is the sum of abnormal return in a given time period ( $t_0, t_1$ )

$$(CAAR)_j = \sum_{t=t_0}^{t_1} AAR_{jt} \quad \dots (6)$$

The sample average cumulative abnormal return of CAR from event time  $t_0$  to  $t_1$  is the sum of AR from  $t_0$  to  $t_1$ .

#### Analysis Based on Stock Prices

To test the null hypothesis that there is no significant change in the abnormal return around the merger announcement, the statistical significance of CAR ( $t_0, t_1$ ) and AR is calculated according to Brown and Warner (1980). The standard deviation is estimated from the time series of average returns in the parameter estimation period. The Standardized Abnormal Returns (SARs) for each company is obtained by dividing the abnormal returns of the window period (-30 to +30 days) by standard deviation obtained. For the event day t, the Z-statistics for average abnormal return (AARs) on N securities is calculated as:

$$Z_t = \sum_{i=1}^N SAR_{it} / \sqrt{N} \quad \dots (7)$$

For testing cumulative abnormal returns for N securities, the Z statistics is calculated as :

$$Z_t = \sum_{i=1}^N SAR_{it} / \sqrt{N*T} \quad \dots (8)$$

To analyze whether there is any change occurred in results, different event window i.e. 5 day, 10 day, 20 days, 30 days are considered.

#### **Analysis Based on Trading Quantity**

To examine the impact of merger announcement on liquidity, two methods are used. One is percentile change and other is average trading quantity before and after merger announcement. First, daily average volume is calculated for -150 days to days concerning different event windows. This is the benchmark considered as normal daily volume. Then, percentage of higher volume is determined for each of the companies in different event window. It is considered significant only if the percentage is higher by 100 per cent; compared with the normal daily average volume calculated for prior 150 days to day's announcement.

To examine whether the changes in trading quantity are significant or not; first of all, daily average volume is calculated for different event windows before the merger announcement date and after the announcement date. After that, t-test (Paired Two Samples for Means) is used to examine the significant change in average trading quantity before and after the announcement day under different event window i.e. 5 day event window, 10 day event window, 20 day event window, 30 day event window.

### **RESULTS AND DISCUSSION**

#### **Abnormal Returns**

As exhibited in Table-1, the average abnormal return on event day and t+1 day are 0.43 per cent and -0.17 per cent respectively; however, it is significant only on event day at 10 per cent level under one tailed test. The results exhibited in Table-1 give the indication of insider trading activity in case of 30 day event window because the significant change in abnormal returns comes before the merger announcement date. There is only one day i.e. t+28 day on which abnormal returns are significant at 5 per cent level after merger announcement. But abnormal returns on t-26 day, t-23 day, t-14 day are found significant at 10 per cent, 5 per cent, 1 per cent level respectively. Therefore, null hypothesis that there is no significant change in abnormal returns after merger announcement in 30 day event window can't be accepted. There is also a significant change in abnormal returns at 10 per cent level on t-10 day in 20 days event window, which is similar to the results of 10-day event window as given in Table-2. On t-14 day, calculated value of Z statistics is 2.488 which is significant at 5 per cent level and also give the indication of insider trading activity. Table-3 shows that the change is significant at 1 per cent level just for one





Contd. Table 1

Day	1	2	3	4	5	6	7	8	9	10
AAR	-0.17141	-0.2365	-0.10564	-0.1997	-0.0315	0.227664	-0.2922	0.1646	-0.12071	0.772494
Z Stat	0.91036	-0.4899	0.213524	0.205017	-0.13933	0.835294	-20.5317	-0.89796	0.554308	0.106122
CAAR	1.738355	1.501851	1.39621	1.196514	1.16501	1.392674	1.100469	1.265069	1.144358	1.916852
Z Stat CAAR	0.071039	-0.06691	-0.04141	-0.10344	0.037007	0.055259	-0.09762	-0.03673	-0.07071	0.261327
Day	H	12	13	14	15	16	17	18	19	20
AAR	0.91036	-0.4899	0.213524	0.205017	-0.13933	0.835294	-20.5317	-0.89796	0.554308	0.106122
Z Stat	1.301196	-1.16785	0.26007	0.926791	-0.5524	1.142721	-26.0591	-1.86723	1.499804	0.243736
CAAR	2.827212	2.337307	2.550831	2.755848	2.616515	3.451809	-17.0799	-17.9779	-17.4236	-17.3175
Z Stat CAAR	0.200681	-0.17801	0.039188	0.13809	-0.08141	0.166602	-3.75947	-0.26662	0.212001	0.034113
Day	21	22	23	24	25	26	27	28	29	30
AAR	0.144872	0.404974	-2.71935	0.900675	0.478046	-0.44518	-0.48822	1.07272	0.79773	-1.00472
Z Stat	0.624067	0.561089	-6.34812	1.793*	1.453519	-0.78688	-1.18014	2.528**	1.57357	-2.15579
CAAR	-17.1726	-16.7676	-19.487	-18.5863	-18.1082	-18.5534	-19.0416	-17.9689	-17.1712	-18.1759
Z Stat CAAR	0.0865	0.077034	-0.86345	0.241744	0.19414	-0.10417	-0.15488	0.329053	0.203048	-0.27589

Source : CMIE-Prowess

\*significance at 10 per cent level

\*\*significance at 5 per cent level

\*\*\*significance at 1 per cent level



Contd. Table 2

Day	1	2	3	4	5	6	7	8	9	10
AAR	-0.39269	-0.14024	-0.14349	-0.2517	-0.09596	0.37916	-0.23066	0.208093	-0.37425	0.783357
Z Stat	-0.01906	-0.24689	-0.27528	-0.70577	0.103463	0.58614	-0.4924	-0.17779	-0.89941	1.653*
CAAR	0.630053	0.383164	0.107888	-0.59788	-0.49442	0.091719	-0.40068	-0.57847	-1.47789	0.175294
Z Stat	-0.00406	-0.05145	-0.05616	-0.14109	0.020281	0.112748	-0.09301	-0.033	-0.16413	0.296775
CAAR										
Day	11	12	13	14	15	16	17	18	19	20
AAR	0.940842	-0.55453	0.132335	0.231012	0.014122	0.788307	-20.4892	-0.99586	0.390871	0.219301
Z Stat	1.333518	-1.29497	0.077559	0.961365	-0.41209	1.099373	-25.7638	-2.05592	1.126396	0.437746
CAAR	1.508811	0.213841	0.2914	1.252765	0.840672	1.940044	-23.8238	-25.8797	-24.7533	-24.3155
Z Stat	0.23562	-0.22532	0.013295	0.162421	-0.06865	0.180648	-4.1774	-0.32905	0.178012	0.068331
CAAR										

Source : CMIE-Prowess

Table 3  
Average Abnormal Returns and Cumulative Abnormal Returns of Sample Companies under 10 Day Event Window

Day	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
AAR	-0.19195	0.114482	-0.18562	-0.2132	-0.2869	0.046035	-0.05811	0.114331	-0.33803	-0.66372	0.454325
Z STAT	-0.394	0.555014	-0.55274	-0.26749	-0.94383	-0.33554	-1.29372	0.25819	-0.32036	-1.13607	0.9076
CAAR	-0.14352	-0.02904	-0.21466	-0.42786	-0.71476	-0.66872	-0.72683	-0.6125	-0.95053	-1.61425	-1.15992
Z Stat											
CAAR	-0.39381	0.392263	-0.31897	-0.13368	-0.42189	-0.13692	-0.48874	0.091239	-0.10673	-0.35908	0.273518
Day	1	2	3	4	5	6	7	8	9	10	
AAR	-0.55062	-0.17358	0.120763	-0.39542	0.035253	0.274997	0.21494	-0.01251	-0.48889	1.206615	
Z STAT	-0.62175	-0.06163	-0.08389	-0.89962	0.647351	0.593707	0.134746	-0.42537	-0.56543	2.8252***	
CAAR	-1.71054	-1.88412	-1.76336	-2.15878	-2.12353	-1.84853	-1.63359	-1.6461	-2.135	-0.92838	
Z Stat											
CAAR	-0.1794	-0.01709	-0.02241	-0.23217	0.161759	0.143925	0.031744	-0.09754	-0.12637	0.61621	

Source : CMIE-Prowess

**Table 4**  
Average Abnormal Returns and Cumulative Abnormal Returns of Sample Companies under 5 Day Event Window

Day	-5	-4	-3	-2	-1	0	1	2	3	4	5
AAR	0.084119	-0.18097	0.13731	-0.3072	-0.38577	0.22793	-0.40162	-0.15409	-0.16301	-0.22061	-0.10339
Z STAT	-0.56495	-1.05428	0.135809	-0.72369	-0.58937	0.503368	0.073304	-0.22507	-0.24185	-0.66617	0.098428
CAAR	0.044292	-0.13668	0.000631	-0.30657	-0.69235	-0.46442	-0.86604	-1.02013	-1.18314	-1.40374	-1.50713
Z Stat	-0.56467	-0.74512	0.078371	-0.36167	-0.26345	0.205399	0.028448	-0.07954	-0.08058	-0.21056	0.029663
CAAR											

Source : CMIE- Prowess

**Table 5**  
Average Trading Volume of Sample Companies in Different Event Window

	5 Day		10 Day		20 Days		30 Days	
	Before	After	Before	After	Before	After	Before	After
ACC	1296382	2413328	1580516	2407877	1728477	2225606	1482877.2	1903989.1
APLAB	10478.2	3854.4	6696.5	6084.8	6969.2	5383.4	6788.8333	9802.8333
COSMO	180.6	1485.2	428.8	3208.1	2922.45	2760.05	2863.3333	2193.7667
DCM	89839.4	60686.4	47240.5	72241.1	27737.35	68428.15	22341.133	55721.933
DEEPAK	8437.2	6136.6	6740.2	8715.4	4678.1	9537.5	3723.2333	9090.2
EICHER	16877.2	23416.8	13036.7	16559.5	18615.1	11443.9	21833.1	9375.9
HCL	759229.6	1651656	814984.1	1145160	556386.8	923888.8	503399.03	807859.8
HINDALCO	1226056	3419182	1345201	2462713	1101994	1768805	904600.07	1448080.7
IDBI BANK	143830.8	686338.6	162113.4	403603.5	140645.3	245398.2	109834.57	229259.67
HUL	383984.4	753894.4	368965	559481.3	322056.1	524199.5	390739.03	673953.2
IGATE Solutions	62037.4	75192.4	74555.5	66411.5	83490.15	113064.7	78651.2	93951.667
INDUSIND	536125.6	1023887	840832.1	704138.7	566238.4	567981.4	422977.5	635355.13
IOL	324200.4	243474.2	344538	259638.4	360885	317425.9	318696.83	313785.77
ITC	72570	60576.2	111862.2	46071.9	107258.7	88425.5	113280.3	100717.87
JCT	1057014	4212330	850461.6	4267927	1424575	5007577	2067955.3	5792857.5
JK INDUSTRIES	1011.8	1660.2	1434.7	4161.2	1965.95	3033.8	2851.3	4036.5
J SW	8886738	4750873	6070064	3042199	5002477	3229962	4612409.8	2673877.1
NEROLAC	2086.2	2967.8	6458.4	2182.2	4905.55	3040.4	18099.733	4048.2
M & M	580967.4	805899.6	516064.9	675369.3	479155.8	554859.9	405718.67	506822.7
MCMILLAN	4396	4594	2797.9	2935.9	1706.85	2216.7	3741.1	3532.8

Contd. Table 5

MARICO	9988.8	1595.6	7943.2	1997.4	5121.2	4181.55	3816.4333	3534.6
MATRIX	7329	31377	14052.7	26587.6	15947.35	28132.6	21850.133	24411.4
MTNL	276733	786287.4	257359.7	675258.9	315350	812092.4	592849.1	670229.07
NAHAR	18847.2	10588.17	12516.9	10615.2	9544.45	8791.2	9796.5333	7587.4667
OBC	235096.8	1250149	231944	815739.3	305727.4	550275.2	402930.2	486164.17
RANBAXY	277952.8	307730	296544.7	405566.6	344894.3	447962.3	486920.77	471780.07
RELIANCE	64966.2	144256.2	118016.3	181179.9	158125.8	227976	208519.43	220647.27
SAIL	6578556	5390104	10015702	5860286	12184786	11269608	13875011	10551668
SIEMENS	7075.2	5229.2	9812.2	24273	13286.95	26679.1	14219.667	23806.933
SILICON	12891.4	562	19120.9	1664.4	18085.1	25167.7	12375.3	32163.833
Software Solutions	346127	119980	291451.7	439549.7	166745.5	476842.7	59857.1	99934.633
Sun Pharmaceuticals	44235.6	29266	31955.5	21894.2	25908.05	37250.75	23593	38109.067
Sundram Fastners	1436.2	2167.6	2179.4	2305.5	4803.75	3095	3473.3333	2874.7333
TATA STEEL	2048884	2164781	1265271	1567401	1178298	1098952	1987944.3	2331138.8
TIPS INDUST	12005.8	8463.4	9993.9	6030.2	18276.15	4703.3	19655.4	11127.967
TVS MOTORS	4584.2	4195.6	4240	5555	13023.3	5377.4	14549.167	7212.5333
Union Bank	724329.6	520130.2	725606	848693.4	1248354	873721.3	1178727.9	841109.97
VIJAYA	236347	165961.2	296290	187657	557524.5	518658.8	489631.83	819244.17
WIPRO	206040.2	215142	189487.2	156026.9	166378.3	124278.8	147172.93	140585.33
ZENITH BIRLA	46237	19522.4	35227.2	16666.3	28990.6	14467.65	23235.067	13642.9
GLAXO	9712.6	22487.4	9854.2	37580.1	16226.2	43300.65	19325.933	35352.1

Source : CMIE-Prowess

Table 6  
Percentile Change in Trading quantity Under 5 Day Event Window

	-5	-4	-3	-2	-1	0	1	2	3	4	5
ACC LTD.	-7.03	-19.28	-5.47	13.49	15.30	99.00	38.41	48.82	112.62	84.82	140.58
APLAB	176.30	-21.73	31.45	79.53	305.13	178.00	29.91	-35.83	-51.97	7.80	-56.06
COSMO	-90.95	-82.26	-85.22	-97.04	-91.13	-21.64	-37.91	10.88	-40.86	4.97	2.07
DCM	-80.47	-78.95	333.56	630.35	241.95	120.88	321.98	4.07	10.22	70.05	138.30
DEEPAK	121.97	586.80	174.71	539.46	354.30	661.30	153.66	45.26	569.10	325.05	63.24
EICHER	28.19	86.46	-17.21	107.75	617.72	1477.39	329.22	681.54	122.46	125.43	76.87
HCL Technologies	57.09	96.93	83.93	-7.08	41.82	64.82	712.79	298.76	203.94	35.60	68.52
GLAXO	22.25	30.54	16.08	49.71	47.40	139.75	90.96	50.01	38.33	50.35	154.62
HINDALCO	-43.58	-23.70	77.58	10.91	-36.57	476.59	346.10	216.98	143.89	77.83	66.75
Hindustan Unilever Ltd.	-0.13	-0.70	-0.59	-0.37	-0.15	1.07	0.55	0.87	-0.19	0.12	-0.35
IDBI BANK LTD.	130.04	-40.01	-55.94	-60.80	-68.48	128.13	937.81	141.21	138.11	166.61	47.93
IGATE SOLUTIONS	55.22	-0.21	3.85	-55.72	-36.02	211.49	210.69	-47.09	-10.17	-9.03	-78.21
INDUSIND	675.08	210.48	145.02	46.67	120.93	527.34	1419.19	482.46	185.68	160.13	495.71
INDIAN OIL CORP.	0.46	-39.44	6.50	-30.67	-18.60	39.20	7.07	-60.22	-33.58	-55.90	-43.26
ITC LTD.	-60.92	-75.34	2.17	11.43	-76.53	0.07	-68.59	-43.43	-34.81	-26.85	-75.24
JCT	-51.34	-53.62	101.90	20.19	17.24	-35.92	-40.96	106.39	787.51	544.99	231.62
JK INDUSTRIES	-89.43	-94.73	-81.52	-28.00	-72.99	-65.74	20.58	-97.34	-64.42	-92.75	-47.29
J S W STEEL	353.41	235.31	72.45	215.15	333.21	557.02	262.36	140.58	93.79	-56.77	-26.04
KANSAI NEROLAC	-83.48	-91.45	-92.61	-50.08	-68.86	-30.34	-44.78	-66.86	-70.83	-63.78	-92.25
M & M Industries	53.98	220.91	17.08	337.72	68.25	193.65	302.53	427.44	296.95	52.76	82.07



Contd. Table 6

MCMILLAN	-53.22	-75.26	-98.93	-95.42	136.42	260.25	128.06	-78.38	-74.08	-95.43	-52.45
MARICO	393.25	732.66	328.93	-50.76	-63.18	41.73	-51.90	0.59	-77.88	-30.56	-46.19
MATRIX	-83.34	-54.51	-85.29	-73.05	-75.70	-77.27	299.55	-72.84	1.86	-92.77	-87.35
MTNL GROUP	-76.63	-69.35	-75.62	-56.18	-55.98	-47.03	-44.83	46.82	-57.66	17.38	10.64
NAHAR Enterprise	91.13	36.43	-24.82	205.89	310.57	73.24	32.66	2.51	36.34	-4.28	14.03
Ori. Bank of Com.	-68.31	-50.03	-42.36	-42.29	-46.37	736.51	318.58	392.51	36.05	51.63	33.98
RANBAXY	-67.37	-78.84	-64.96	-31.59	-75.82	-87.80	-71.11	-67.63	-60.49	-35.51	-64.40
RELIANCE	-9.33	-15.83	-32.92	-2.45	25.93	71.43	279.01	100.48	13.32	116.95	23.66
SAIL	-49.71	-53.34	-54.93	-52.95	65.83	13.26	-37.49	-14.41	-48.43	-54.89	-54.00
SIEMENS	-53.33	-26.30	-34.13	-30.29	-50.62	-10.32	-58.04	-71.19	-58.98	-61.01	-25.10
SILICON VALLEY	139.74	738.05	-91.36	128.88	-92.30	-94.87	-78.96	-88.20	-85.43	-91.17	-98.56
Software Solutions	153.74	206.55	53.82	4.15	4.51	54.96	-31.35	36.68	-60.50	-63.91	-61.06
Sun Pharmaceuticals	-63.50	-49.42	-61.92	-38.88	487.57	80.94	137.93	-16.87	-29.61	-25.53	-53.95
Sundram Fastners	-74.70	52.17	-91.12	-83.31	-85.49	-43.99	39.75	-38.02	-56.04	-47.80	-69.55
TATA STEEL	-4.10	-10.14	-51.40	-2.63	154.02	-13.17	66.33	54.74	56.80	-33.58	-25.38
TIPS INDUSTRIES	-75.61	-88.21	-32.41	-37.11	-56.66	-83.80	-66.96	-83.32	-79.24	-34.33	-88.10
TVS MOTORS	-65.60	-31.24	-64.64	-93.61	-41.05	17.94	-42.62	-38.02	-75.92	-75.27	-81.61
UNION BANK	-60.82	-54.14	-74.27	-32.00	51.92	45.48	-18.21	-48.18	-62.28	-79.54	-54.33
VIJAYA BANK	10.07	55.25	16.81	37.91	-2.14	26.18	-10.25	-37.58	-39.85	22.98	-1.42
WIPRO	30.42	-18.29	-19.08	-7.14	34.71	408.40	84.33	-2.82	0.17	-2.67	-35.39
ZENITH BIRLA	15.58	294.15	171.60	8.08	-60.47	-29.65	-47.35	-20.40	-3.74	-19.24	-17.05

Source : CMIE-Prowess

Table 7  
Percentile Change in Trading Quantity Under 10 Days Event window

	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
ACC	33.89	63.41	67.49	49.88	31.66	-2.94	-15.73	-1.31	18.48	20.37	107.75	44.49	55.37	121.97	92.95	151.16	78.09	153.23	61.24	58.33	110.69
ABLAB	-36.37	-45.38	-76.39	-15.50	-27.10	177.62	-21.36	32.07	80.39	307.06	179.32	30.53	-35.52	-51.75	8.32	-55.85	58.52	248.60	-0.60	58.93	-11.75
COSMO	-51.41	-63.19	-39.93	-84.39	-61.72	-90.99	-82.33	-85.28	-97.06	-91.17	-21.97	-38.16	10.42	-41.11	4.53	1.65	-23.32	91.81	313.07	287.16	283.27
DCM	-91.06	-95.10	-96.27	-71.47	-66.63	-80.58	-79.06	331.29	626.53	240.16	119.73	319.77	3.52	9.64	69.16	137.05	90.70	46.63	421.44	64.42	311.66
DEEPAK	13.10	281.63	271.81	147.84	184.96	128.19	606.05	182.41	557.38	367.04	682.63	160.77	49.33	587.85	336.96	67.81	189.35	322.97	360.71	886.96	873.81
EICHER	7.07	127.13	82.26	63.21	-36.13	32.23	92.34	-14.60	114.29	640.33	1527.07	342.74	706.16	129.46	132.54	82.44	123.45	189.52	84.67	-71.73	-41.45
GLAXO	-61.95	-75.17	-78.74	-46.08	-74.61	-78.71	-70.78	-84.61	-52.43	-54.65	33.72	-12.96	-52.15	-63.33	-51.82	47.95	20.33	-10.09	-55.85	-22.54	429.40
HCL Tech	158.37	1.53	99.93	51.79	106.11	58.83	99.10	85.96	-6.05	43.39	66.63	721.76	303.16	207.29	37.10	70.38	-27.30	76.33	59.44	31.07	73.26
Hindalco	39.09	59.57	49.39	-48.03	-23.96	-43.85	-24.06	76.73	10.38	-36.87	473.82	343.97	215.46	142.72	76.98	65.95	71.21	64.09	56.58	-52.34	-46.99
HUL	-57.75	-43.47	-17.79	-51.30	-61.88	-17.45	-71.62	-61.02	-39.86	-19.52	96.30	47.48	77.31	-23.05	6.65	-37.96	-47.90	-51.28	-45.61	-26.17	-52.81
IDBI Bank	-31.03	-47.68	-50.16	-28.36	148.42	122.56	-41.97	-57.38	-62.07	-69.51	120.71	904.04	133.37	130.37	157.93	43.12	6.23	-11.67	-67.50	-55.14	-42.81
IGATE	-0.09	-21.96	-41.46	121.18	59.67	2.65	6.83	-54.45	-34.19	220.41	219.59	-45.58	-7.59	-6.43	-77.59	-66.25	-46.27	123.74	-50.02	-14.82	407.82
Solutions																					
Indusind	713.14	1133.48	637.33	1049.42	684.47	907.77	303.69	218.58	90.70	187.26	715.68	1875.27	657.33	271.45	238.23	674.55	336.21	216.98	91.55	270.70	167.66
Indian Oil	4.60	73.37	-13.20	-75.19	-10.71	2.19	-38.39	8.34	-29.47	-17.19	41.60	8.92	-39.53	-32.43	-55.13	-42.28	-71.42	-78.01	-58.75	-2.84	72.99
JCT	-55.36	-22.30	-22.17	-56.01	-32.30	-50.39	-52.71	105.83	22.52	19.51	-34.68	-39.81	110.40	804.75	557.52	238.07	181.92	332.30	230.03	204.06	779.92
JK	8.78	-72.11	-39.39	-91.19	-72.31	-89.91	-94.97	-82.36	-31.24	-74.20	-67.28	15.15	-97.46	-66.02	-93.08	-49.66	5.74	90.03	83.44	104.96	54.27
Industries																					
JSW Steel	170.37	21.55	-36.85	11.37	-17.95	369.66	247.33	78.64	226.44	348.74	580.57	275.55	149.20	100.74	-55.22	-23.39	-43.22	-65.58	-41.76	-60.79	-22.92
KANSAI Nerolac	400.68	-63.66	-67.26	-76.94	-86.21	-83.00	-91.20	-92.39	-48.62	-67.95	-28.30	-43.16	-65.89	-69.98	-62.72	-92.02	-87.98	-74.30	-91.44	-74.16	-93.89
M&M	-69.28	34.54	27.73	259.56	205.61	58.60	230.53	20.59	350.84	73.29	202.45	314.59	443.24	308.84	57.34	87.53	64.57	94.95	292.24	44.42	160.94
McMillan	-38.00	-96.54	-87.85	-97.62	-97.06	-54.67	-76.03	-98.96	-95.56	129.07	249.05	120.97	-79.06	-74.88	-95.58	-53.93	-70.42	-54.24	-97.73	-96.47	-92.81
MARICO	82.35	-21.23	162.62	338.92	73.68	415.68	770.52	348.44	-48.52	-61.50	48.17	-49.71	5.16	-76.88	-27.40	-43.74	-71.10	110.60	-19.46	-30.06	-27.71
MATRIX	2.37	13.72	-32.79	-49.90	-64.92	-83.09	-53.85	-85.08	-72.66	-75.34	-76.94	305.40	-72.44	3.36	-92.66	-87.17	-83.90	-76.45	175.09	-65.88	-62.26

Contd. Table 7

MTNL Group	-67.65	-82.93	-70.70	-73.62	-67.54	-77.52	-70.50	-76.54	-57.84	-57.64	-49.03	-46.91	41.27	-59.26	12.94	6.46	-51.03	-18.57	-21.38	-47.52	-35.38
NAHAR Group	-20.32	16.42	-50.67	-49.75	-25.58	92.55	37.44	-24.26	208.16	313.62	74.53	33.64	3.27	37.35	-3.57	14.87	7.32	1.94	45.29	36.52	93.43
OBC	-50.31	-56.38	-63.26	-25.37	-62.18	-68.50	-50.32	-42.69	-42.62	-46.68	73.68	316.16	389.66	35.26	50.75	33.21	5.01	-33.60	-11.17	-5.03	-51.03
Ranbaxy	-67.77	-53.00	-64.03	-58.55	-51.72	-67.49	-78.92	-65.09	-31.84	-75.91	-87.85	-71.22	-67.75	-60.64	-35.75	-64.53	-48.97	-13.09	5.68	-59.04	-57.23
Reliance	352.15	155.63	188.24	40.59	86.98	-3.55	-10.47	-28.64	3.77	33.96	82.36	303.17	113.25	20.54	130.78	31.54	133.47	247.75	-14.03	24.07	770.76
SAIL	24.21	53.39	78.16	81.94	1.62	-48.77	-52.47	-54.08	-52.07	68.93	15.38	-36.32	-12.80	-47.47	-54.04	-53.14	-25.04	-39.00	-39.38	-35.71	-12.96
SIEMENS	-12.18	-8.15	193.15	-53.87	-78.68	-53.44	-26.48	-34.29	-30.45	-50.74	-10.54	-58.15	-71.26	-59.08	-61.11	-25.28	923.39	287.52	202.63	-77.88	29.20
Silicon Valley	795.05	624.95	-57.70	-83.49	1088.24	164.19	823.55	-90.48	152.23	-91.52	-94.35	-76.82	-86.99	-83.94	-90.27	-98.42	-71.05	-91.97	-97.76	-55.33	129.02
Software Solutions	10.26	-33.88	-37.24	31.03	155.06	151.32	203.63	52.35	3.15	3.51	53.49	-32.01	35.38	-60.87	-64.26	-61.43	-56.82	13.40	207.38	695.01	645.64
Sun Pharma	-36.80	-54.20	-59.50	3.06	-11.06	-63.79	-49.81	-62.22	-39.36	482.98	79.53	136.07	-17.52	-30.16	-26.11	-54.31	-35.69	-78.70	-35.07	-41.75	-56.72
Sundram	-78.29	223.51	-65.50	-73.37	-60.15	-74.50	53.37	-91.05	-83.18	-85.37	-43.54	40.85	-37.53	-55.69	-47.39	-69.31	-70.56	-38.32	70.60	-71.02	-17.65
Tata Steel	-69.92	-75.70	-79.60	-78.74	-82.23	-5.94	-12.24	-55.27	-4.40	158.98	-15.40	67.52	55.43	57.57	-36.69	-28.14	-11.86	-43.19	-48.78	-75.08	-61.67
Tips Industries	-63.22	-67.06	-67.80	-83.52	-79.94	-75.81	-88.31	-32.98	-37.64	-57.02	-83.93	-67.24	-83.46	-79.41	-34.88	-88.20	-95.65	-70.10	-95.45	-90.64	-85.77
TVS Motors	-63.69	-52.78	-51.43	-73.64	-89.66	-66.88	-33.80	-65.95	-93.85	-43.24	13.56	-44.75	-40.32	-76.81	-76.19	-82.29	-52.39	-89.22	6.42	-34.98	-33.79
Union Bank	-33.66	-43.19	-56.16	-46.58	-23.56	-64.96	-58.98	-76.98	-39.17	35.89	30.13	-26.84	-53.65	-66.26	-81.70	-59.15	-81.28	-44.63	47.19	99.78	-40.30
Vijaya Bank	256.49	93.25	48.15	58.10	29.04	16.42	64.20	23.55	45.86	3.50	33.45	-5.08	-33.98	-36.38	30.07	4.27	-34.92	138.35	40.59	-47.31	-17.82
WIPRO	80.81	-51.86	-68.86	27.83	-57.06	28.60	-19.43	-20.21	-8.44	32.83	401.30	81.75	-4.18	-1.23	-4.03	-36.29	-52.83	-35.05	-55.03	-51.92	-63.72
Zenith Birla	-51.32	-20.83	-66.09	116.03	24.50	19.32	306.90	180.39	11.57	-59.19	-27.37	-45.64	-17.82	-0.62	-16.63	-14.37	-29.54	-20.40	-70.60	-27.35	-65.67

Source : Compiled from Data Obtained from CMIE-Prowess

**Table 8 (A)**  
**Percentile Change in Trading Quantity Under 10 Days Event window**

	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
ACC	7.95	-14.32	0.05	159.06	19.34	57.15	-8.18	115.47	150.29	158.40	46.65	78.98	83.45	64.15	44.20	6.31	-7.70	8.09	29.77	31.84	127.54
ABLAB	252.89	3.12	-19.94	-31.62	-6.59	32.33	9.17	-4.51	264.71	-13.75	-36.42	-45.42	-76.41	-15.57	-27.16	177.39	-21.42	31.97	80.24	306.73	179.09
COSMO	704.06	633.56	279.63	139.99	1045.47	-1.15	-45.60	30.72	-66.17	-56.02	-44.18	-57.71	-30.99	-82.07	-56.02	-89.65	-79.70	-83.09	-96.62	-89.85	-10.35
DCM	-63.93	-81.81	-61.85	-45.05	-80.06	-82.06	-93.40	-86.12	-80.04	-50.34	-91.27	-95.22	-96.36	-72.14	-67.41	-81.03	-79.55	321.11	609.38	232.13	114.54
DEEPAK	-37.60	-20.08	-7.10	25.90	188.69	146.59	-0.72	7.38	115.31	32.56	13.03	281.42	271.60	147.70	184.80	128.06	605.66	182.25	557.02	366.78	682.20
EICHER	246.77	745.35	594.28	319.56	-12.81	333.05	514.29	567.87	632.41	258.78	42.30	201.87	142.23	116.91	-15.11	75.74	155.62	13.50	184.81	883.92	2062.43
GLAXO	72.63	-32.53	-72.88	154.39	-49.07	-54.19	-64.46	-67.93	-69.93	-71.45	-61.65	-74.97	-78.58	-45.66	-74.42	-78.54	-70.55	-84.49	-52.06	-54.29	34.76
HCL	-40.36	-72.90	-61.95	-1.16	-37.07	-37.94	-40.26	-8.28	-12.40	160.00	162.11	3.00	102.83	53.99	109.10	61.13	101.99	88.65	-4.69	45.47	69.05
Hindalco	-76.62	-55.59	-31.29	-69.09	-81.06	34.24	-42.88	-5.13	-37.31	-17.24	27.22	45.96	36.64	-52.46	-30.45	-48.64	-30.54	61.65	0.96	-42.26	424.87
HUL	-57.27	-69.87	-67.40	-60.07	-70.31	-45.39	-56.81	-20.67	-80.26	-77.33	-59.96	-46.42	-22.08	-53.85	-63.88	-21.77	-73.10	-63.06	-43.00	-23.72	86.04
IDBI Bank	-74.74	-66.07	-76.59	-80.25	-69.76	-64.63	-2.55	133.87	-23.02	-62.70	-34.80	-50.53	-52.88	-32.27	134.85	110.40	-45.14	-59.70	-64.15	-71.17	108.65
IGATE	-89.74	-95.58	-94.18	-80.49	-64.91	-76.69	-80.31	-87.73	-84.03	-86.92	-75.87	-88.88	-91.31	-93.48	-75.37	-82.22	-88.57	-88.11	-94.93	-92.67	-64.32
Solutions																					
INSIND	242.02	100.50	136.45	-26.03	43.98	37.59	264.16	411.42	100.84	363.59	805.30	1273.28	720.89	1179.69	773.38	1021.98	349.44	254.69	112.32	219.82	808.13
IOI	8.82	-26.33	-7.90	-24.38	192.28	-39.16	-52.61	-31.46	-19.89	8.43	6.40	75.67	-11.52	-73.96	-9.02	3.98	-36.90	10.17	-27.91	-15.54	43.67
ITC	-1.40	-60.91	-47.14	5.93	-48.17	-10.88	22.85	5.67	-23.08	9.82	-39.93	187.51	54.32	-36.45	-37.68	-60.85	-75.29	2.37	11.65	-76.48	0.26
JCT	105.87	277.28	161.88	222.06	203.51	93.91	117.87	59.52	88.24	34.20	-25.81	-10.83	-10.68	-49.52	-22.31	-43.07	-45.73	136.22	40.62	37.16	-25.03
JK INDUS	-17.18	-77.35	-66.56	3.56	-24.36	-61.19	-44.86	-65.33	-59.65	-73.25	-11.07	-77.20	-50.45	-92.80	-77.37	-91.75	-95.88	-85.58	-43.79	-78.91	-73.25
JSW Steel	-23.17	48.57	55.24	131.81	141.68	213.58	-10.19	47.09	28.04	77.20	194.79	32.31	-31.14	21.43	-10.54	412.10	278.70	94.77	255.94	389.29	642.06
Nerolac	-44.34	-71.34	-48.78	-71.09	-55.65	-54.74	-79.23	-72.19	-38.14	-87.33	402.82	-63.51	-67.12	-76.84	-86.15	-82.92	-91.16	-92.36	-48.40	-67.81	-27.99
M&M	282.87	57.67	161.06	244.37	-5.07	-15.27	7.27	127.32	63.19	-5.43	-68.64	37.37	30.41	267.13	212.05	61.93	237.48	23.13	360.33	76.93	208.81
Memflin	-90.07	-84.46	-90.07	-95.33	-97.69	-97.20	-93.98	-87.58	-90.35	-93.52	-41.92	-96.76	-88.62	-97.77	-97.24	-57.54	-77.54	-99.03	-95.84	114.59	226.99

Contd. Table 8 (A)

MARICO	-54.51	-56.75	-67.41	-24.76	-67.19	-34.56	-73.90	44.74	77.11	114.50	76.44	-23.79	154.10	324.68	68.05	398.96	742.28	333.89	-50.19	-62.75	43.36
MATRIX	35.81	-33.58	-30.61	-45.45	-53.87	-68.80	-54.55	-66.48	-29.18	-75.10	-6.47	3.90	-38.60	-54.23	-67.95	-84.55	-57.83	-86.37	-75.02	-77.47	-78.93
MTNL	-5.56	-56.12	-38.84	-56.63	-70.47	-60.11	-83.92	-66.54	-68.21	-61.48	-67.61	-82.91	-70.66	-73.59	-67.50	-77.49	-70.47	-76.51	-57.79	-57.59	-48.97
NAHAR	-5.44	-41.47	-84.78	-62.93	-10.59	15.80	34.61	-12.27	15.36	-36.24	-17.71	20.23	-49.05	-48.10	-23.14	98.85	41.94	-21.78	218.25	327.16	80.24
OBC	45.06	21.40	-49.65	20.82	-37.86	-41.78	-39.01	-51.51	-17.40	-43.55	-50.19	-56.27	-63.17	-25.18	-62.08	-68.42	-50.19	-42.55	-42.48	-46.55	733.77
Ranbaxy	-88.50	82.03	-9.02	-73.79	-67.90	-65.29	-82.10	-60.08	-72.66	-41.49	-67.15	-52.11	-63.35	-57.76	-50.80	-66.87	-78.51	-64.43	-30.54	-75.46	-87.62
Reliance	-66.64	-72.04	-50.78	-74.29	-84.06	-87.62	-21.34	-16.25	-77.30	-76.09	-46.57	-68.39	-64.36	-82.62	-76.88	-88.07	-88.93	-91.18	-87.17	-83.44	-77.45
SAIL	-6.05	93.24	78.88	11.39	38.34	63.26	65.30	-2.61	135.54	129.66	26.52	56.23	81.46	85.32	3.51	-47.82	-51.59	-53.23	-51.18	72.06	17.52
SIEMENS	5.21	-58.45	-51.93	2.42	-73.59	11.11	-61.55	69.62	487.56	69.44	-14.82	-10.92	184.33	-55.25	-79.32	-54.84	-28.69	-36.26	-32.55	-52.22	-13.23
SILICON	1240.01	671.09	52.16	57.44	142.00	89.54	626.17	1061.14	859.48	50.15	19.58	1408.74	313.22	1094.93	11.29	299.03	10.06	6.70	27.49	15.42	19.04
Software	56.84	19.07	16.77	15.27	26.40	12.86	11.46	12.46	15.37	11.79	98.47	59.05	56.05	117.01	227.78	224.44	271.16	136.06	92.12	92.44	137.07
Sun Pharma	17.94	18.86	7.32	13.64	239.36	161.37	31.36	25.47	71.24	99.15	62.86	45.56	40.28	102.50	88.46	36.02	49.91	37.57	60.31	579.82	178.56
Sundram	55.23	108.27	114.19	84.62	45.65	36.29	43.82	24.46	1082.08	1019.98	25.03	372.93	39.77	30.69	45.93	29.39	176.80	10.31	19.39	16.86	65.08
TATA	-59.93	-60.63	-25.65	-32.69	-42.21	-8.03	-49.22	-51.76	-17.07	-65.65	-67.48	-72.69	-76.22	-75.44	-78.59	-9.76	-15.45	-54.27	-8.38	139.02	-18.30
TIPS	62.64	324.50	-15.01	-0.62	-60.39	-89.85	-81.18	-63.19	-70.86	-76.78	-62.91	-66.78	-67.53	-83.38	-79.77	-75.61	-88.21	-32.40	-37.10	-56.65	-83.80
TVS	-70.44	-63.77	17.09	369.94	-48.37	259.23	76.26	358.98	193.76	-37.57	-60.04	-48.04	-46.55	-73.19	-88.62	-63.55	-27.14	-62.53	-93.23	-37.54	24.97
UNION	-21.48	-5.25	-43.26	-24.05	52.65	318.94	64.47	-16.61	-41.26	76.80	-37.59	-46.55	-58.76	-49.74	-28.09	-67.03	-61.41	-78.34	-42.77	27.85	22.43
VIAYA	89.73	108.88	44.15	8.87	458.25	443.87	1060.97	773.35	2020.59	415.31	405.77	174.17	110.18	124.30	83.08	65.17	132.96	75.28	106.94	46.84	89.33
WIPRO	-55.29	-64.97	-49.01	-41.31	-24.06	38.15	-27.51	-25.51	-34.79	-63.96	65.07	-56.05	-71.57	16.70	-60.80	17.40	-26.45	-27.16	-16.41	21.26	337.66
ZENITH	26.39	-60.45	111.47	39.50	7.44	-12.34	3.95	-28.89	-49.10	-36.48	-48.35	-15.99	-64.02	129.22	32.10	26.60	331.74	197.51	18.38	-56.70	-22.94

Source : Compiled from Data Obtained from CMIE-Prowess

**Table 8 (B)**  
**Percentile Change in Trading Quantity Under 20 Day Event Window**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ACC	58.26	70.17	143.12	111.33	175.08	95.06	177.35	76.60	73.41	130.76	55.82	40.55	112.72	158.80	90.61	42.19	63.33	11.41	165.02	51.08
ABLAB	30.43	-35.58	-51.78	8.23	-55.89	58.39	248.32	-0.68	58.80	-11.82	-65.33	52.85	3.28	-33.01	-76.41	-33.14	-76.61	-18.12	-1.66	208.74
COSMO	-28.96	26.86	-32.34	20.09	16.78	-11.91	120.37	374.56	344.79	340.32	31.26	391.41	52.57	-5.28	6.63	-42.42	-32.34	53.92	39.38	69.15
DCM	309.86	1.08	7.05	65.17	131.46	86.20	43.17	409.13	60.54	301.95	453.71	329.33	259.97	155.52	79.15	-10.53	33.43	-55.66	-46.26	-38.06
DEEPAK	160.62	49.25	587.47	336.72	67.72	189.18	322.74	360.45	886.41	873.27	256.85	200.50	918.41	566.83	576.54	363.84	192.73	439.60	126.79	1103.66
EICHER	488.42	971.42	204.96	209.05	142.47	196.97	284.78	145.43	-62.43	-22.18	-70.77	-26.52	-17.86	289.62	48.76	60.86	58.74	-15.28	-45.60	78.10
GLAXO	-12.28	-51.77	-63.04	-51.44	49.11	21.27	-9.38	-55.50	-21.94	433.53	-65.58	-45.08	-77.67	-83.37	131.71	1059.74	-81.71	-68.85	-88.21	-65.36
HCL	733.68	309.00	211.75	39.09	72.85	-26.24	78.88	61.75	32.97	75.77	68.32	31.03	92.30	93.08	15.34	36.48	61.11	23.79	87.48	52.36
HINDALCO	306.09	188.55	122.02	61.88	51.79	56.60	50.09	43.22	-56.41	-51.51	8.10	18.06	-18.83	-15.51	-6.34	-18.63	-44.55	-39.07	-59.05	-50.62
HUL	39.77	68.04	-27.07	1.07	-41.21	-50.63	-53.83	-48.45	-30.03	-55.28	-26.66	-52.94	-48.31	78.38	-20.91	-48.92	-70.44	-41.72	-4.75	-62.53
IDBI BANK	849.20	120.62	117.78	143.85	35.30	0.43	-16.49	-69.28	-57.59	-45.93	-52.17	-79.78	-77.98	-46.80	-80.14	11.64	-45.33	-66.09	-61.50	-52.95
IGATE	-64.42	-93.94	-89.71	-89.58	-97.50	-96.24	-94.02	-75.09	-94.43	-90.52	-43.46	-61.85	-60.80	-75.31	-57.49	-71.85	-83.75	-91.40	-89.19	-89.44
SOLUTIONS																				
INSIND	2099.15	743.16	313.54	276.56	762.34	385.65	252.91	113.26	312.71	197.99	273.28	247.56	215.95	423.03	134.70	392.16	472.07	417.34	315.95	67.99
IOL	10.75	-58.19	-30.89	-53.76	-40.81	-70.16	-76.79	-57.40	-1.09	75.28	93.41	75.87	-6.84	11.28	-7.50	-30.36	-55.19	-58.92	-13.02	-6.26
ITC	-68.52	-43.32	-34.68	-26.70	-75.19	-82.91	-84.64	-84.20	-48.48	-68.66	-64.63	-67.51	-35.77	-60.81	-55.73	-76.60	-62.89	-75.94	277.21	308.97
JCT	-30.93	141.46	938.34	654.60	287.98	223.54	396.13	278.76	248.96	909.85	420.04	156.13	244.13	179.98	113.05	1859.75	1109.52	637.70	887.16	191.18
JK INDUS	-5.86	-97.92	-72.22	-94.34	-58.85	-13.56	55.35	49.96	67.55	26.11	-20.93	-41.67	-72.22	-50.33	-79.42	-79.42	-85.35	-51.13	-46.30	-80.97
JSW STEEL	309.26	171.72	118.87	-51.17	-16.47	-38.09	-62.48	-36.50	-57.25	-15.95	48.55	-23.26	57.57	-16.11	-30.00	-31.26	43.81	102.76	180.06	153.00
NEROLAC	-42.92	-65.74	-69.85	-62.56	-91.99	-87.93	-74.19	-91.41	-74.05	-93.87	-81.98	-91.88	-37.55	-5.93	-70.14	-46.00	-62.32	-57.19	-39.75	-68.67
M&M	323.32	454.68	317.45	60.65	91.47	68.03	99.05	300.49	47.46	166.43	192.39	32.80	164.33	144.62	92.31	18.66	87.10	40.26	75.96	35.32

Contd. Table 8 (B)

McMillan	107.01	-80.38	-76.47	-95.86	-56.84	-72.29	-57.14	-97.88	-96.70	-93.27	-88.67	-66.01	-77.30	-98.12	-32.82	-88.67	-98.06	-92.71	-87.30	-76.43
MARICO	-51.34	1.75	-77.63	-29.75	-45.56	-72.04	103.77	-22.07	-32.33	-30.05	969.54	-22.63	40.60	-28.08	354.36	143.96	-51.90	-28.11	-45.19	40.94
MATRIX	270.37	-74.82	-5.57	-93.30	-88.28	-85.29	-78.49	151.32	-68.83	-65.52	-78.54	-34.66	-97.81	-90.14	-86.99	181.96	201.84	5.39	-28.30	-11.01
MTNL	-46.85	41.44	-59.21	13.08	6.59	-50.97	-18.47	-21.28	-47.45	-35.30	91.11	-5.71	2.68	43.05	13.64	33.95	42.91	-46.40	-2.74	-74.15
NAHAR	38.02	6.65	41.85	-0.41	18.63	10.84	5.28	50.04	40.99	99.77	23.84	0.40	-64.75	-8.44	-46.13	11.33	-33.77	28.74	34.72	-85.05
OBC	317.21	390.89	35.60	51.13	33.54	5.27	-33.43	-10.95	-4.79	-50.91	-40.81	-30.55	-62.07	8.12	-73.07	77.88	-76.31	-77.24	-85.51	-35.17
RANBAXY	-70.67	-67.13	-59.89	-34.53	-63.86	-47.99	-11.43	7.69	-58.26	-56.41	2.06	-27.50	-79.76	-54.73	-78.29	-45.88	-44.85	34.37	27.04	-82.57
RELIANCE	-50.15	-73.63	-85.10	-71.46	-83.74	-71.13	-57.00	-89.37	-84.66	7.67	21.77	-51.16	-60.51	-81.47	-82.85	-70.91	-85.97	-75.94	21.25	-16.40
SAIL	-35.14	-11.19	-46.49	-53.19	-52.27	-23.65	-37.87	-38.25	-34.52	-11.35	156.87	162.52	85.93	49.23	47.31	115.58	24.59	9.56	34.00	181.63
SIEMENS	-59.40	-72.12	-60.31	-62.28	-27.53	892.62	275.86	193.54	-78.55	25.31	37.66	-81.05	-30.15	361.74	24.96	-30.43	-10.53	92.34	1037.92	26.57
SILICON	11.53	1.88	34.33	9.52	2.65	52.96	271.52	4.56	14.35	1.07	19.55	54.17	173.93	5.39	5403.57	4594.53	2780.91	1918.74	2805.07	0.71
SOFTWARE	60.72	120.90	34.94	31.92	34.45	38.57	101.18	274.50	709.99	665.89	458.74	326.76	249.59	94.57	98.32	223.10	117.64	415.68	332.53	107.92
SUN PHARMA	234.79	82.03	69.46	73.49	45.45	63.96	21.18	64.57	57.94	43.05	768.36	69.39	294.92	58.66	124.32	185.75	90.44	78.54	106.02	39.87
SUNDRAM	162.37	72.02	51.07	60.65	35.37	33.93	71.10	196.66	33.40	94.93	53.15	43.93	1.41	31.08	66.70	92.22	363.32	107.50	122.67	485.32
TATA	56.51	45.60	47.54	-37.51	-29.79	-15.11	-43.36	-48.41	-72.13	-60.04	-56.81	-72.14	-77.28	-67.20	-56.28	-38.95	-71.38	-67.47	-76.07	-77.20
TIPS	-66.96	-83.32	-79.24	-34.32	-88.10	-95.61	-69.84	-95.41	-90.56	-85.65	-89.50	-92.60	-94.84	-93.41	-86.99	-83.03	-82.33	-91.57	-88.07	-79.52
TVS	-39.20	-34.32	-74.48	-73.79	-80.51	-47.60	-88.13	17.12	-28.44	-27.13	27.47	116.86	-85.45	-65.08	-68.79	-94.69	-92.23	-94.54	-76.42	-77.08
UNION	-31.17	-56.39	-68.25	-82.78	-61.57	-82.39	-47.90	38.48	87.96	-43.83	-50.73	-52.49	-77.44	84.09	-10.57	7.12	-55.41	-71.31	-34.36	-48.28
VIAVA	34.67	-6.33	-9.74	84.53	47.93	-7.67	238.16	99.46	-25.25	16.60	6.32	91.87	543.45	310.32	326.70	229.86	110.86	28.12	1353.48	2665.42
WIPRO	65.93	-12.52	-9.83	-12.38	-41.84	-56.93	-40.70	-58.95	-56.10	-66.88	-66.59	-59.79	-57.98	-77.45	-58.54	-29.57	-52.16	-59.57	-56.25	-61.17
ZENITH	-42.32	-12.81	5.44	-11.54	-9.142	-25.24	-15.54	-68.80	-22.91	-63.56	-37.31	-55.73	-19.71	-38.68	-56.96	-68.09	-40.67	-43.55	-40.46	-58.78

Source : Compiled from Data Obtained from CMIE-Prowess

Table 9 (A)  
Percentile Change in Trading Quantity Under 30 Days Event Window

	-30	-29	-28	-27	-26	-25	-24	-23	-22	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11
Acc	7.49	-15.36	-29.89	-40.01	-12.43	2.84	0.95	-45.68	9.54	36.00	13.41	-9.99	5.11	172.16	25.37	65.10	-3.54	126.36	162.95	171.46
Aplab	-58.05	-17.65	172.76	-50.51	22.39	-13.63	117.41	114.13	-7.00	6.54	244.21	0.58	-21.91	-33.30	-8.89	29.08	6.48	-6.86	255.73	-15.87
Cosmo	-77.02	-13.07	-47.47	-77.02	-99.15	-75.71	126.66	634.87	211.88	218.45	680.30	611.88	268.42	132.90	1011.62	-4.07	-47.21	26.85	-67.17	-57.32
Dem	-36.27	-69.78	-84.50	-37.39	-67.53	-56.14	-68.71	-39.51	-79.67	-82.61	-64.71	-82.20	-62.67	-46.23	-80.49	-82.44	-93.54	-86.42	-80.47	-51.41
Deepak	177.93	-34.08	42.75	-19.99	-13.75	-36.68	-91.33	74.93	-38.47	-13.63	-35.01	-16.75	-3.24	31.14	200.69	156.85	3.41	11.84	124.26	38.07
Eicher	81.05	-24.27	-5.60	-42.23	789.61	578.48	171.15	3139.13	3722.37	547.73	468.33	1285.45	1037.90	587.64	42.90	609.76	906.80	994.61	1100.39	488.02
Glaxo	-53.98	-78.37	89.14	51.70	-4.47	1.80	-41.20	-46.83	-64.43	-49.58	64.94	-35.54	-74.09	143.26	-51.34	-56.23	-66.04	-69.36	-71.27	-72.72
Hel	-45.35	-65.60	34.30	1.31	-7.85	-1.63	2.74	-24.17	-46.04	-16.39	-40.61	-73.01	-62.11	-1.58	-37.33	-38.20	-40.51	-8.67	-12.77	158.90
Hindalco	-66.36	-71.16	-62.97	-75.61	-60.53	-59.64	-61.41	-59.76	-70.15	-81.74	-78.93	-59.97	-38.07	-72.14	-82.93	20.99	-48.52	-14.50	-43.50	-25.41
Hul	5.02	-28.44	-44.41	-44.31	-46.31	-49.45	20.79	46.66	-39.61	-74.11	-57.92	-70.33	-67.90	-60.68	-70.76	-46.23	-57.47	-21.88	-80.56	-77.68
Idbi Bank	-85.59	-91.85	-83.00	-6.51	-84.20	-73.77	-83.58	-88.66	-78.44	-82.20	-75.35	-66.90	-77.16	-80.73	-70.50	-65.49	-4.91	128.19	-24.89	-63.60
Igate	-19.66	43.64	-32.40	-39.22	57.00	142.92	16.46	25.75	59.79	17.17	9.65	-52.72	-37.80	108.50	275.03	149.14	110.45	31.09	70.65	39.78
Indusind	-54.43	-67.19	-66.06	-60.91	-77.50	-67.40	-21.34	-4.19	270.14	491.54	266.97	115.13	153.70	-20.64	54.48	47.63	290.73	448.73	115.49	397.41
IOL	37.11	-19.21	-39.38	-53.52	-57.27	-54.00	-37.97	-66.37	-56.92	-23.37	9.45	-26.26	-7.54	-24.27	195.77	-39.28	-52.94	-31.46	-19.71	9.05
ITC	-35.17	60.92	-70.85	35.32	88.72	59.83	-9.32	-71.07	-68.11	4.07	-5.82	-62.66	-49.51	1.19	-50.49	-14.87	17.35	0.94	-26.52	4.90
JCT	257.70	204.59	792.56	529.80	160.34	478.29	548.37	563.96	434.65	289.51	172.86	400.04	247.09	326.86	302.28	157.01	188.76	111.43	149.49	77.86
JK	-92.89	-90.22	-72.79	-68.45	-84.88	-70.98	-65.57	104.46	225.47	37.83	-28.42	-80.42	-71.10	-10.49	-34.63	-66.46	-52.34	-70.03	-65.13	-76.88
Industries																				
JSW Steel	80.40	69.49	178.24	75.30	-3.34	30.22	126.34	239.54	28.60	9.30	-15.38	63.64	70.98	155.32	166.19	245.37	-1.09	62.00	41.03	95.16
Nerolac	-39.10	-74.57	-24.14	-78.32	4975.14	144.17	236.90	253.17	557.98	-65.59	-23.42	-60.56	-29.53	-60.22	-38.99	-37.73	-71.43	-61.74	-14.89	-82.57



Contd. Table 9 (A)

M&M	-13.26	-19.51	-21.01	-27.85	-26.60	-15.85	-2.96	25.27	27.34	158.43	269.70	52.25	152.08	232.53	-8.33	-18.18	3.58	119.51	57.58	-8.68
Memillan	-86.03	-72.18	-84.90	-72.83	-88.29	256.74	223.17	-67.48	-19.31	-19.11	-90.48	-85.10	-90.48	-95.52	-97.79	-97.32	-94.23	-88.09	-90.75	-93.79
Marico	10.71	-65.67	5.96	-52.43	-81.52	-54.92	-88.68	-61.15	-66.54	-90.49	-53.98	-56.24	-67.03	-23.88	-66.80	-33.80	-73.59	46.44	79.18	117.01
Matrix	-87.78	-77.23	-95.39	-84.69	-26.05	411.08	-75.60	46.94	-8.47	14.53	26.68	-38.04	-35.28	-49.12	-56.97	-70.89	-57.61	-68.73	-33.94	-76.78
MTNL	139.61	92.13	65.50	-34.24	-34.49	17.16	-31.92	-39.32	12.12	-1.76	-54.36	-36.38	-54.89	-69.28	-58.50	-83.28	-65.19	-66.94	-59.93	-66.31
NAHAR	22.07	51.40	-18.70	2.78	-25.41	-38.05	5.51	-7.64	212.58	120.48	-1.56	-39.07	-84.15	-61.41	-6.92	20.56	40.13	-8.67	20.09	-33.62
OBC	-27.10	-10.12	-29.22	92.28	71.68	74.55	39.44	-10.01	47.66	34.28	46.66	22.74	-49.10	22.15	-37.18	-41.14	-38.34	-50.97	-16.49	-42.92
Ranbaxy	-35.59	-52.47	220.70	-30.65	96.31	-29.77	45.14	-20.17	-69.64	-61.31	-88.04	89.29	-5.39	-72.75	-66.62	-63.91	-81.39	-58.49	-71.57	-39.15
Reliance	193.42	61.79	329.81	399.54	3889.44	779.22	899.96	633.54	403.01	662.92	429.48	343.82	681.36	308.06	153.03	96.46	1148.61	1229.38	260.27	279.56
SAIL	46.27	132.76	125.08	73.74	112.92	98.08	161.66	134.16	24.88	56.82	-4.37	96.70	82.08	13.39	40.81	66.18	68.26	-0.87	139.76	133.77
Siemens	-31.40	6.21	660.12	30.53	30.27	-72.13	-77.43	-69.75	12.74	-41.23	13.40	-55.22	-48.19	10.40	-71.54	19.76	-58.56	82.82	533.32	82.64
Silicon	-79.79	-90.86	-99.39	-96.95	-96.95	-99.70	-99.85	-86.28	116.06	-75.01	533.04	60.87	1031.03	1309.33	662.72	-40.72	-34.72	61.38	1.77	611.67
Software	-36.35	-64.30	-74.77	-85.66	-84.09	-85.09	-83.84	-74.23	-84.24	-55.45	-47.23	-82.30	-84.43	-85.82	-75.49	-88.06	-89.37	-88.44	-85.74	-89.06
Sunpharma	-23.24	-70.39	-72.64	61.76	-29.99	-79.34	-49.07	-60.16	-71.76	42.11	-82.26	-81.36	-92.76	-86.51	136.65	59.54	-68.99	-74.82	-29.37	-1.98
Sundram	-86.00	-69.80	-52.94	-97.37	-95.28	-81.04	-97.47	7.76	-69.84	-83.91	-47.06	3.78	9.45	-18.89	-56.24	-65.22	-58.00	-76.55	937.18	877.67
TATA	-27.27	-53.41	-44.55	-26.77	-30.01	-24.69	-32.04	-40.74	-47.63	-68.16	-60.56	-61.25	-26.81	-33.75	-43.12	-9.47	-50.02	-52.52	-18.37	-66.19
TIPS	-36.43	-74.21	33.01	100.28	-17.01	-28.37	-50.57	-49.26	-69.33	-20.50	63.34	326.32	-14.64	-0.19	-60.22	-89.81	-81.10	-63.03	-70.74	-76.68
TVS	26.25	-46.17	-34.52	-17.58	459.83	345.31	171.65	-7.20	-47.76	-50.19	-67.93	-60.70	27.03	409.85	-43.99	289.74	91.23	397.96	218.71	-32.27
Union Bank	-87.70	-73.61	-83.12	-96.82	-51.77	138.05	52.12	5.67	-41.02	-1.52	-25.26	-9.81	-45.99	-27.71	45.30	298.76	56.55	-20.63	-44.09	68.29
Vijaya	195.74	290.54	49.37	-38.59	-9.17	140.52	269.44	425.11	326.86	719.32	130.24	153.49	74.94	32.12	577.46	560.01	1308.89	959.85	2473.44	525.35
Wipro	-9.03	-52.96	-51.04	-57.56	-61.04	-62.7	-72.65	-45.14	-73.38	-80.25	-60.76	-69.26	-55.25	-48.49	-33.35	21.24	-36.38	-34.63	-42.77	-68.37
Zenith	-43.05	-77.63	-69.58	-48.32	-56.14	-39.20	-41.64	-57.72	-38.17	1.51	29.83	-59.38	117.22	43.30	10.36	-9.96	6.78	-26.95	-47.71	-34.75

Source : Compiled from Data Obtained from CMIE-Process

**Table 9 (B)**  
**Percentile Change in Trading Quantity Under 30 days Event Window**

	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Acc	54.06	88.03	92.72	72.45	51.49	11.68	-3.03	13.56	36.33	38.50	139.05	66.26	78.77	155.41	122.02	188.99	104.92	191.37	85.53	82.18	143.42
Aplab	-37.98	-46.77	-76.99	-17.65	-28.96	170.56	-23.35	28.72	75.81	296.72	172.22	27.22	-37.16	-52.97	5.56	-56.97	54.49	239.74	-3.12	54.89	-13.99
Cosmo	-45.83	-58.96	-33.03	-82.60	-57.32	-89.95	-80.30	-83.59	-96.72	-90.15	-13.00	-31.06	23.11	-34.34	16.55	13.33	-14.51	113.85	360.54	331.65	327.31
Dem	-91.46	-95.32	-96.43	-72.74	-68.11	-81.44	-79.99	312.08	594.17	225.02	109.94	301.08	-1.09	4.76	61.63	126.49	82.21	40.10	398.22	57.10	293.33
Deepak	17.74	297.28	287.06	158.00	196.65	137.55	635.01	193.99	584.34	386.19	714.73	171.46	55.46	616.06	354.88	74.70	201.21	340.32	379.61	927.44	913.75
Eicher	133.22	394.75	297.01	255.51	39.13	188.02	318.95	86.02	366.78	1512.61	3444.14	864.39	1656.01	399.82	406.52	297.39	386.72	530.64	302.25	-38.43	27.54
Glaxo	-63.36	-76.09	-79.53	-48.08	-75.55	-79.50	-71.86	-85.18	-54.20	-56.33	28.76	-16.19	-53.92	-64.69	-53.61	42.47	15.87	-13.42	-57.49	-25.41	409.78
HCL	161.01	2.57	101.98	53.35	108.22	60.45	101.14	87.86	-5.09	44.85	68.34	730.17	307.29	210.44	38.50	72.13	-26.55	78.13	61.07	32.42	75.03
Hindalco	14.66	31.55	23.16	-57.15	-37.31	-53.71	-37.40	45.69	-9.00	-47.96	373.06	266.01	160.06	100.10	45.90	36.81	41.14	35.27	29.08	-60.71	-56.30
Hul	-60.57	-47.24	-23.27	-54.55	-64.43	-22.96	-73.51	-63.62	-43.87	-24.89	83.20	37.63	65.48	-28.19	-0.47	-42.10	-51.38	-54.54	-49.24	-31.10	-55.96
Idbi bank	-36.38	-51.73	-54.02	-33.91	129.15	105.30	-46.47	-60.68	-65.02	-71.87	103.59	826.16	115.26	112.50	137.93	32.02	-2.01	-18.52	-70.02	-58.62	-47.24
Igate	157.94	18.89	-7.13	-30.34	163.21	90.00	22.16	27.13	-45.80	-21.69	281.29	280.31	-35.24	9.96	11.35	-73.33	-59.84	-36.06	166.25	-40.52	1.36
Indusind	871.35	1373.48	780.78	1273.06	837.10	1103.85	382.23	280.56	127.81	243.15	874.38	2259.60	804.68	343.72	304.04	825.25	421.08	278.66	128.82	342.82	219.74
IOL	6.99	77.34	-11.21	-74.62	-8.67	4.53	-36.98	10.82	-27.86	-15.30	44.84	11.41	-58.61	-30.89	-54.11	-40.96	-70.77	-77.50	-57.80	-0.62	76.94
ITC	-42.62	174.64	47.40	-39.30	-40.47	-62.60	-76.40	-2.22	6.65	-77.54	-4.23	-69.93	-45.85	-37.61	-29.99	-76.31	-83.68	-85.33	-84.91	-50.79	-70.06
JCT	-1.67	18.19	18.38	-33.09	2.97	-24.55	-28.07	213.08	86.37	81.79	-0.63	-8.45	220.04	1276.22	900.15	414.23	328.82	557.58	402.00	362.51	1238.45
JK	-23.14	-80.30	-57.18	-93.78	-80.44	-92.87	-96.44	-87.53	-51.41	-81.77	-76.88	-18.64	-98.20	-75.99	-95.11	-64.43	-25.29	34.27	29.61	44.82	9.00
Industries																					
JSW Steel	224.69	45.73	-24.16	33.74	-1.47	464.02	317.10	114.52	292.03	438.90	717.30	350.76	199.27	141.06	46.22	-8.00	-31.82	-58.67	-30.06	-52.91	-7.43
Nerolac	591.78	-49.79	-54.76	-68.13	-80.95	-76.51	-87.83	-89.49	-29.00	-55.72	-0.93	-21.47	-52.87	-58.52	-48.49	-88.98	-83.39	-64.49	-88.18	-64.29	-91.56

Contd. Table 9 (B)

M&M	-69.71	32.65	25.93	254.51	201.32	56.37	225.88	18.90	344.50	70.85	198.20	308.76	435.61	303.10	55.12	84.89	62.25	92.21	286.72	42.39	157.27
McMillan	-44.31	-96.90	-89.08	-97.86	-97.36	-59.28	-78.47	-99.07	-96.01	105.77	213.55	98.50	81.19	-77.44	-96.03	-58.61	-73.43	-58.90	-97.96	-96.83	-93.54
Marico	78.50	-22.90	157.07	329.65	70.01	404.79	752.13	338.97	-49.60	-62.32	45.04	-50.77	2.94	-77.37	-28.93	-44.93	-71.71	106.15	-21.16	-31.54	-29.23
Matrix	-12.76	-3.09	-42.72	-57.31	-70.10	-85.59	-60.67	-87.28	-76.70	-78.99	-80.35	245.47	-76.51	-11.92	-93.75	-89.06	-86.28	-79.93	134.43	-70.93	-67.83
MTNL	-82.23	-69.48	-72.53	-66.19	-76.59	-69.28	-75.57	-56.09	-55.89	-46.92	-44.71	47.12	-57.57	17.62	10.87	-49.00	-15.20	-18.12	-45.34	-32.70	98.78
NAHAR	-14.33	25.16	-46.96	-45.97	-19.99	107.01	47.76	-18.57	231.31	344.69	87.64	43.68	11.02	47.67	3.68	23.50	15.38	9.60	56.20	46.77	107.96
OBC	-49.64	-55.79	-62.77	-24.35	-61.66	-68.07	-49.65	-41.92	-41.85	-45.96	742.96	321.81	396.31	37.10	52.80	35.02	6.43	-32.70	-9.97	-3.74	-50.37
Ranbaxy	-65.84	-50.20	-61.88	-56.08	-48.84	-65.55	-77.66	-63.01	-27.77	-74.48	-87.12	-69.50	-65.82	-58.29	-31.92	-62.42	-45.92	-7.90	11.99	-56.60	-54.68
Reliance	748.22	401.74	465.75	175.94	267.00	89.31	75.73	40.06	103.68	162.93	257.93	691.33	318.57	136.59	352.97	158.18	358.26	582.55	68.74	143.53	1609.11
SAIL	28.78	59.03	84.71	88.63	5.36	-46.89	-50.72	-52.39	-50.30	75.14	19.62	-33.98	-9.60	-45.84	-52.35	-51.42	-22.28	-36.76	-37.15	-33.35	-9.76
Siemens	-8.19	-3.98	206.47	-51.77	-77.71	-51.33	-23.13	-31.30	-27.29	-48.50	-6.47	-56.24	-69.95	-57.22	-59.34	-21.88	969.91	305.13	216.39	-76.87	35.07
Silicon	1106.03	876.84	-43.01	-77.75	1501.10	255.99	1144.44	-87.17	239.87	-88.57	-92.38	-68.76	-82.47	-78.36	-86.89	-97.87	-60.99	-89.18	-96.98	-39.80	208.59
Software	-8.59	-45.18	-47.97	8.63	111.46	108.36	151.73	26.31	-14.48	-14.18	27.25	-43.63	12.24	-67.56	-70.37	-68.02	-64.20	-6.07	154.83	559.11	518.18
Sunpharma	-37.85	-54.96	-60.18	1.34	-12.54	-64.39	-50.65	-62.85	-40.37	473.25	76.53	132.13	-18.90	-31.33	-27.35	-55.07	-36.77	-79.06	-36.16	-42.72	-57.44
Sundram	-76.01	257.46	-61.88	-70.58	-55.97	-71.83	69.47	-90.11	-81.41	-83.84	-37.62	55.63	-30.97	-51.05	-41.87	-66.09	-67.48	-31.85	88.50	-67.98	-9.01
TATA	-67.99	-73.12	-76.59	-75.83	-78.93	-11.18	-16.77	-54.98	-9.81	135.27	-19.58	54.06	43.32	45.22	-38.49	-30.89	-16.44	-44.25	-49.22	-72.57	-60.67
TIPS	-62.75	-66.64	-67.39	-83.31	-79.68	-75.50	-88.15	-32.11	-36.83	-56.47	-83.73	-66.81	-83.25	-79.15	-34.04	-88.05	-95.59	-69.71	-95.39	-90.52	-85.59
TVS	-56.65	-43.62	-42.01	-70.91	-87.65	-60.45	-20.95	-59.35	-92.66	-32.23	35.59	-34.03	-28.74	-72.31	-71.57	-78.86	-43.15	-87.13	27.07	-22.36	-20.94
Union bank	-40.60	-49.13	-60.74	-52.16	-31.55	-68.62	-63.27	-79.39	-45.53	21.69	16.53	-34.48	-58.49	-69.78	-83.61	-63.42	-83.24	-50.41	31.81	78.91	-46.53
Vijaya	513.77	232.72	155.07	172.20	122.17	100.44	182.70	112.72	151.13	78.20	129.77	63.43	13.67	9.54	123.94	79.52	12.05	310.37	142.05	-9.28	41.49
Wipro	44.86	-61.43	-75.05	2.42	-65.60	3.03	-35.45	-36.08	-26.64	6.42	301.64	45.62	-23.23	-20.87	-23.11	-48.96	-62.20	-47.96	-63.97	-61.48	-70.93

Source : Compiled from Data Obtained from CMIE-Prowess

Table 9 (C)  
Percentile Change in Trading Quantity Under 30 Day Event Window

	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Acc	63.70	47.65	123.48	171.88	100.24	49.37	71.58	17.04	178.42	58.72	23.55	-25.58	38.18	-17.92	-12.52	51.00	-2.34	69.24	4.90	32.76
Aplab	-66.18	49.09	0.74	-34.66	-76.99	-34.78	-77.19	-20.13	-4.08	201.14	59.30	11.69	27.86	-20.95	-11.95	79.09	36.78	54.49	64.78	2429.50
Cosmo	27.38	376.89	48.06	-8.08	3.48	-44.12	-34.34	49.38	35.26	64.15	11.62	-55.55	28.04	-14.64	-36.64	-64.22	8.01	-80.30	-63.89	-35.65
Dem	441.85	320.13	252.26	150.04	75.31	-12.45	30.57	-56.61	-47.41	-39.39	-35.48	9.59	-81.68	-18.05	-75.90	-38.52	-55.19	18.26	103.58	165.16
Deepak	271.69	213.00	960.77	594.57	604.68	383.13	204.91	462.05	136.22	1153.71	540.38	696.76	708.38	626.81	279.84	217.74	55.05	619.01	41.54	-50.90
Eicher	-52.10	20.43	34.62	538.57	143.82	163.65	160.16	38.85	-10.85	191.90	20.96	192.67	-27.72	10.95	805.78	-38.36	-43.64	-30.43	-25.75	-18.77
Glaxo	-67.11	-47.53	-78.67	-84.11	121.39	1008.10	-82.52	-70.24	-88.73	-66.90	-54.89	-52.46	-62.34	-32.76	-82.69	-91.56	-43.22	-86.43	40.20	78.80
HCL	67.61	30.47	91.49	92.27	14.86	35.90	60.43	23.27	86.69	51.72	327.23	15.84	29.88	109.84	1.82	-23.28	-21.73	-8.90	-37.41	-83.47
Hindalco	-2.57	6.41	-26.85	-23.85	-15.58	-26.67	-50.02	-45.08	-63.09	-55.49	-40.97	-36.46	-66.02	-59.71	-27.97	-20.34	-50.22	-48.72	-62.95	-63.45
Hul	-27.78	-53.66	-49.10	75.65	-22.12	-49.70	-70.89	-42.61	-6.20	-63.10	-31.47	164.68	80.04	-34.93	125.99	86.35	23.81	-38.19	32.00	-33.50
IDBI Bank	-53.33	-80.27	-78.51	-48.09	-80.62	8.93	-46.66	-66.91	-62.44	-54.10	-3.91	-44.70	-56.40	-75.29	51.84	-1.91	107.90	119.07	-54.57	-52.50
Igate	504.31	307.76	318.99	163.91	354.37	200.91	73.66	-8.07	15.54	12.89	-61.90	-39.09	-25.25	-29.95	-52.06	-27.22	-36.63	25.23	64.52	209.62
Indusind	300.52	272.92	239.00	461.19	151.82	428.06	513.88	455.08	346.29	80.25	129.74	321.83	122.40	160.99	138.22	528.86	424.78	1664.88	1862.81	1222.94
Iol	95.36	77.54	-6.46	11.94	-7.13	-30.34	-55.56	-59.35	-12.73	-5.87	-44.69	-26.52	-35.37	7.89	-23.32	-50.52	17.71	-64.46	67.87	-25.66
Ite	-66.22	-68.97	-38.65	-62.57	-57.71	-77.65	-64.55	-77.02	260.32	290.66	-37.23	-53.80	-60.14	50.57	77.32	37.00	-40.24	4.05	8.79	7.87
Jct	589.26	239.48	356.11	271.08	182.37	2497.45	1503.09	877.74	1208.39	285.94	257.72	848.72	760.61	4216.61	2089.37	1118.71	413.93	370.06	272.81	196.33
JK	-31.66	-49.58	-75.99	-57.07	-82.22	-82.22	-87.34	-57.76	-53.58	-83.55	-95.55	-23.07	95.00	6.46	-7.81	144.48	-50.12	-45.60	55.38	-4.68
Industries																				
JSW Steel	63.61	-15.48	73.55	-7.60	-22.90	-24.29	58.40	123.32	208.45	178.65	46.39	-23.07	-55.86	-18.70	-49.37	-26.90	-36.79	-29.92	-35.85	-22.49
Nerolac	-75.21	-88.83	-14.08	29.42	-58.92	-25.71	-48.17	-41.11	-17.10	-56.90	-5.17	-58.46	576.57	-80.53	-80.33	-83.38	-97.96	-73.15	-63.38	-95.70

Contd. Table 9 (C)

M & M	182.33	28.23	155.24	136.21	85.70	14.58	80.67	35.44	69.91	30.67	0.11	78.17	3.98	-62.95	130.94	33.45	24.24	320.55	144.82	46.83
Memillan	-89.13	-67.40	-78.23	-98.20	-35.58	-89.13	-98.14	-93.01	-87.82	-77.40	-0.21	-33.99	-88.77	-30.54	-63.55	-64.60	-86.66	-74.43	123.18	85.12
Manico	982.04	-21.73	42.25	-27.24	359.68	146.81	-51.34	-27.27	-44.55	42.59	-0.23	17.39	-68.69	-21.92	-30.25	5.02	-36.93	-87.17	45.19	22.82
Mairix	-79.99	-39.05	-97.96	-90.80	-87.86	163.01	181.55	-1.69	-33.12	-16.99	-57.38	-94.24	-82.84	115.75	-56.60	-95.82	-78.03	-90.09	-72.48	24.68
MTNL	-1.93	6.80	48.80	18.21	39.33	48.65	-44.25	1.17	-73.11	-71.73	-66.71	-12.55	-12.86	-24.21	-50.67	-53.74	-78.73	-83.02	-80.46	-85.40
NAHAR	28.92	4.52	-63.30	-4.68	-43.92	15.90	-31.05	34.02	40.25	-84.44	-12.40	-17.80	-67.33	-35.62	-44.94	8.31	-2.43	-34.53	-66.17	-60.77
OBC	-40.16	-29.78	-61.65	9.31	-72.77	79.84	-76.05	-76.99	-85.35	-34.46	-75.32	-73.35	-60.70	-52.49	-46.26	-41.68	35.19	6.51	104.29	-27.12
Ranbaxy	6.13	-24.61	-78.95	-52.93	-77.42	-43.72	-42.65	39.73	32.11	-81.87	-26.48	-45.04	-21.44	-43.50	-10.93	-2.96	-36.00	-13.85	-47.21	-36.72
Reliance	1832.99	675.29	526.85	194.16	172.17	361.82	122.77	281.86	1824.65	1227.01	681.21	462.09	338.55	1107.71	659.64	668.52	539.71	224.77	160.21	316.62
SAIL	161.47	167.23	89.26	51.91	49.95	119.44	26.82	11.53	36.40	186.67	57.95	8.12	-4.89	9.01	24.50	-26.89	20.07	-33.76	-12.27	-3.05
Siemens	48.38	-79.58	-24.71	397.70	34.69	-25.02	-3.56	107.32	1126.52	36.42	-43.97	115.74	-41.96	50.69	69.19	168.01	-72.99	188.20	136.74	56.31
Silicon	-94.82	-83.69	-98.78	-77.78	-38.43	97.68	-93.87	6041.39	5121.88	3060.62	2080.74	3088.08	1316.18	-29.64	19.52	-41.45	-41.58	-23.50	-55.19	-33.01
Software	325.87	203.35	131.70	-12.21	-8.73	107.11	9.21	285.89	208.70	0.18	-22.20	-19.17	-29.64	19.52	-41.45	-41.58	-23.50	-55.19	-33.01	-29.82
Sunpharma	659.66	-31.40	191.58	-42.00	22.91	83.65	-10.59	-22.35	4.82	-60.58	-66.08	-5.13	90.50	13.12	4.84	399.50	34.18	3.98	-41.81	-64.01
Sundram	-49.06	-57.89	-98.65	-70.21	-36.07	-11.61	248.25	3.04	17.58	365.18	6.58	-4.22	249.39	-43.18	-74.36	-66.87	-60.09	-65.11	-66.06	-54.82
TATA	-57.49	-72.57	-77.64	-67.71	-56.97	-39.91	-71.83	-67.98	-76.44	-77.56	-71.33	-55.49	-56.36	-74.79	-62.31	-49.95	-65.39	-76.89	61.39	16.20
TIPS	-89.46	-92.57	-94.82	-93.39	-86.93	-82.96	-82.25	-91.53	-88.01	-79.44	-96.80	-97.07	-96.04	-1.41	20.70	-33.40	-87.44	38.42	140.90	54.69
TVS	38.30	135.28	-84.21	-62.12	-66.14	-94.24	-91.57	-94.08	-74.42	-75.13	212.91	-77.66	-80.33	-84.31	-87.73	-0.39	110.30	210.57	-25.29	-65.36
Union Bank	-53.11	-54.78	-78.53	75.22	-14.88	1.96	-57.56	-72.69	-37.52	-50.77	-10.06	-49.05	-21.88	-58.40	-37.97	-43.31	-58.56	-22.45	-61.00	-69.82
Vijaya	29.02	132.85	680.86	397.95	417.82	300.30	155.88	55.49	1663.87	3255.96	2846.72	2260.35	1378.78	1502.42	1567.82	524.65	823.14	834.84	533.60	252.08
Wipro	-70.68	-64.71	-63.12	-80.21	-63.61	-38.19	-58.02	-64.52	-61.61	-65.92	-60.39	-28.15	-55.20	41.59	49.47	-39.18	-62.10	-59.42	-52.31	-42.86

Source : Compiled from Data Obtained from CMIE-Prowess

day i.e. on t-10 day under 10 day event window. Therefore, the null hypothesis that there is no significant change in abnormal returns in 10 day event window is rejected. In case of 5-day event window, there is no significant change in abnormal returns as shown in Table 4.

To examine cumulative average abnormal returns, Z test is used under different window. As summarized in Table 1, cumulative average abnormal returns on event day and t+1 day are 1.90 per cent and 1.73 per cent respectively, but found insignificant. As exhibited in Table 1, Table 2, Table 3 and Table 4, cumulative abnormal returns support the null hypothesis that there is no significant change in cumulative abnormal returns around the merger announcement. Similarly, the results of different windows show that none of the cumulative abnormal returns are found significant. However, the average abnormal returns are considered significant if the results of different event window are compared, therefore null hypothesis can't be accepted.

### **Trading Quantity**

To examine the impact of merger and acquisitions on trading quantity; the study focused on trading quantity of 41 companies. Two methods i.e. average trading quantity before and after merger and acquisitions announcement and percentile method have been used. In this regard, again 4 different event windows have been used i.e. 5 day, 10 day, 20 day and 30 day. The result showed that there is no significant change in average trading quantity due to merger announcement in each event window. Therefore, null hypothesis that there is no significant change in average trading quantity after merger announcement is accepted.

In percentile method, the volume pattern for the days in the different event window is compared to average volume pertaining to normal days. In case of 5-day event window, trading quantity has increased more than 100 per cent for 22 companies while merger announcement create negative impact on liquidity for 7 companies as shown in Table 6, which is mainly due to reduction in trading quantity than the benchmark after mergers announcement. There are only 4 companies which are having positive change in trading quantity only on event day and it remains negative on other 4 days. Nahar Enterprise is the only company, which is having significant change in trading quantity for one day just before the announcement date but not after the merger announcement. The highest significant change i.e. 1477 per cent on event day among sample companies over the estimation period comes in Eicher Ltd.

As revealed from the Table-7, 28 companies have shown a significant

change in the trading quantity, while 3 companies faced the negative impact on liquidity after announcement under 10 day event window. The largest change in trading quantity comes in Eicher Ltd. i.e. 1527 per cent on event day and second largest change occurred in trading quantity of Indusind Bank on t+1 day.

In case of 20 days event window, there is significant change in trading quantity for 27 companies as revealed from the Table-8. In 30 day event window, there has been positive impact on liquidity on 30 companies out of 41 companies as depicted in Table-9. Trading quantity has increased by 3444 per cent of Eicher Ltd. on event day while it has increased by 2259 per cent in case of Indusind bank on the next day of merger announcement. Ranbaxy is the only company which doesn't have any positive change in trading quantity in the event window, while Union Bank of India gained a positive change in trading quantity on t-15 day by 591 per cent.

### CONCLUSION

The present study is based on event study methodology by using different event window. In case of 5 day event window; abnormal returns are not considered significant, while in 10 day, 20 day, 30 day event window, abnormal returns are considered significant as exhibited in the different tables. To examine the impact of M&As on trading quantity, two methods have been used. In percentile method, more than 53 per cent of sample companies have showing significant change in trading quantity; while in case of T-test (paired two samples for means), the results showed that there is no significant change in average trading quantity in any of the event window. Large companies such as Ranbaxy Laboratories, Tata Steel, Wipro, Tips, Union Bank of India faced the negative impact on trading quantity after merger announcement. However, there has been a positive impact of M & As on liquidity only in 30 companies in case of 30 day event window.

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