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AN EMPIRICAL ANALYSIS ON INVESTOR SENTIMENTS AND STOCK MARKET REACTIONS ON M&A ANNOUNCEMENTS: A CASE STUDY OF INDIAN PHARMACEUTICAL AND FMCG SECTOR

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ABSTRACT:

Mergers and Acquisitions (M&A) is the tie up of companies or their assets to consolidate into one company for purpose of various strategic business reasons such as improving capabilities, to earn a competitive advantage, takeover a higher market share as well as enter global markets, to diversify product lines, reduce costs and most importantly to ensure survival in the market. The ultimate objective of M&A is to maximise shareholder's wealth. M&A is rapidly becoming a crucial choice for expansion of the organisation and achieving business short term and long term goals. This paper empirically analyses whether the M&A announcements of the Indian Pharmaceutical and FMCG Sector had a significant impact on the shareholders wealth in the short run during the period 1998-2017 using Event Study Analysis.

KEYWORDS:*M&A, Event Study, CARs, Shareholder's wealth, Short-run*

1.   INTRODUCTION TO GROWTH AND TRENDS IN M&AS IN INDIAN SECTORS

The catalysts that drive Mergers and Acquisitions in the Indian sectors is the inclination to curtail the dependence or boost the independence through backward or forward integration, choosing to invest in different function of the supply chain. The rapidly growing distressed sales, which paves way to targets becoming potentially cheap to acquire. Other catalysts being ease in regulatory considerations, growing consolidations, disposal of non-core assets, in order to decrease the debt burden, growth in the e-commerce sector, shareholder activism as well as growing tax concerns.Since post liberalisation Indian Pharma companies recreated their business model with increased focus on contract manufacturing, generic formulations and increased exports to the US market. The multinational companies tapped the opportunities lying in the size and scale of the growing Indian Pharma industry. Since Indian companies faced cut throat competition in the domestic market, they aimed at adopting novel technologies and improvement in terms of R&D. Hence these companies chose M&A activities to revamp their capacities and technology advancements. Indian FMCG industry has undergone large number of M&A deals in the recent past through Private Equity, Domestic and Cross-border M&As. The deals in this sector have grown across various segments particularly Food and Beverage, Personal & Healthcare and Household products. The competitive advantage in this sector lies in two areas firstly, the increasing income levels which has further increased the demand for discretionary products, new product categories and availability of new brands. Secondly, the industry is unrestricted from FDI therefore increasing capitalisation through MNCs. In amidst of global economic slowdown, Indian FMCG sector has attracted large M&As. These deals have provided the firms a platform to access newer markets in other emerging countries as well has increase domestic market share India.

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The Indian economy has undergone 6917 Mergers and Acquisitions during the period 1998- 2017 across the various sectors. There are several studies examining the impact of stock market reactions and investor sentiments in the short run using Event study analysis. Hence an attempt has been made to carry out an exhaustive study to empirically examine whether the M&A announcements have created wealth to the shareholders and acquirers particularly in the Indian Pharmaceutical and FMCG sector using different event windows.

2. REVIEW OF LITERATURE

In this study the attempt has been made to breifly review the work already undertaken and methodology employed. A brief review of selected studies are presented below.

Sharma (2009) examines the economic contributions of bank mergers in the US banking sector before the Global Financial Crisis for the period 2000-2008 using event study analysis consisting of 20 sample acquiring firms. The CAR has registered a positive trend for all the sample firms with the highest significant being 0.45, therefore in the short run bank mergers did not create much shareholder value for smaller event windows. Since in the long run there are less number of significant CARs, the abnormal returns do not imply to be significantly higher than 0 thereby the mergers and acquisitions have little or no impact on shareholders wealth.

Liargovas and Repousis (2011) studies the improvement in performance with respect toeighteen Greek Banking sector horizontal and diversified mergers and acquisitions deals forthe period 1996-2009 using Event study analysis. The results show under horizontal deals the acquirer banks experience statistically significant CAARs one day before up to thirty days post announcement date at 5% significance level and at 10% statistically significant for ten days before the announcement date whereas target banks under diversified deals experience statistically significant CAARs at 10% during thirty and ten days post announcement period and also cash deals generate higher positive CAARs for acquirer shareholders thanacquisition of stock deals, 10 days prior announcement.

Verboven and Huiting (2011) observed the impact of the bidder companies on theshareholder's wealth in European electricity and gas industry by mergers and acquisition forthe period 2001-2010 having a sample of 51 deals using event study analysis. The CAAR (0.00725306) of all bidder companies was found to significantly influencing the value of bidder companies. The analysis of the second objective using regression model found that Cross border deals, privatisation and cash factor do not individually as well as jointly have a relationship with the change in the shareholders' value.

Dilshad (2013) tests the impact of announcement of a merger on the share prices and the efficiency of the market to absorb the information using event analysis for the period of 2001 to 2010, with a sample of eighteen European banks. The results showed that the average abnormal returns were -0.198% and 0.099% one day prior to the merger announcement and - 0.045% & 3.2894% on the day of announcement for acquirer and target banks respectively hence significant abnormal returns were experienced by target companies, the reaction of share prices to the announcement of mergers or acquisitions generates positive value for the acquirers for 2 weeks i.e. the CAR (-5, +5) is significantly higher than 0 whereas CAR during 2 months (-30, +30) were equal to 0.

Cheung (2014) examined the publicly listed banks in European Union based on global financial crisis as a parameter for the period 2004 -2013 using Event study analysis The results for the acquirers proved to be highly insignificant, AARs at day 0 (6.11%) and +1 (2.04%). The significant negative CARs for both type of firms registered implies negative reactions of the stock market at the announcement. The bidder banks created little or no value during the announcement period where as higher fluctuations were registered for target banks. The impact of crisis for target banks was statistically significant where for bidder groups were highly insignificant. Hence the merger did not create any difference in significant abnormal returns pre and post-merger for the bidders.

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Lamba and Thripathi (2015) focussed on the creation of shareholders wealth by Indian company M&As in the long run for the period 1998-2009 using event study analysis. Large significant abnormal returns were generated during (-1,+1) event window in comparison toother event windows pre and post M&As proving that in the longer run acquisition window the acquiring firms did not register significant value for the shareholders in comparison to their expectations. The paired sample t-test implies that during post-acquisition event window the abnormal returns have significantly decreased. The CAARs continued decreasing significantly post M&As with -8.93% (-50,+50) decreasing to -53% in (-250, 250) thereby destructing shareholders value in the long run.

Sachdeva, Sinha and Kaushik (2015) analyses the impact of merger and acquisition announcement of 85 deals on acquiring firms in India for the period 1991-2010 using event study analysis resulting in statistically significant positive cumulative abnormal returns for one day (1.27%), two day (1.39%) and five day (1.88%) event window whereas negative cumulative abnormal returns are experienced for the (-40,+40) event window. The generalised sign test signifies that there is no difference in the proportion of number of abnormal returns during the event window compared to the estimation window. Before merger announcement returns were found to be significantly positive compared to post merger event window which was found to be negative during (+1,0) to (+40,+1) event window concluding that the deal did not create shareholders wealth.

Chaudary and Sarwar (2015) found the abnormal returns generated by US pharmaceutical firms for merger and acquisition deals for the period 2003-2008 with a sample size of 20 companies using event study analysis. Overall it is proven that there are no abnormal returns for the acquiring pharmaceutical companies. The abnormal returns generated for acquiring companies' pre and post announcement date was statistically insignificant. The CARs for the acquiring firms were also found to be statistically insignificant hence no evidence could be provided with respect to abnormal returns generated by the mergers for acquiring companies.

The above literature review provides an overview of different approaches used to gauge the impact of M&A under Event Study Analysis. The article focuses on whether the M&A announcements particularly to Pharmaceutical and FMCG sector in the Indian context has created wealth to the shareholders and acquirers at the time of announcement.

3. DATA AND METHODOLOGY
Period of study and Sample Size
The period of study is from 1st January 1998 to 31st December 2017 to study the completed deals in the Pharmaceutical and FMCG sectors. The impact of announcement of M&A deals in the short run on shareholders wealth has analysed on 257 deals using 5 day, 10 day and 20 day pre and post event windows.

Methodology-Event Study Analysis
The Cumulative Abnormal Returns of the acquirers have been tested using the following
Hypothesis as used by Brown and Warner (1984)

H0: M&A announcements do not impact the shareholders wealth (CAR=0, i.e.Cumulative Abnormal Returns are not significant)

The abnormal returns on each day are measured using the Market Model, wherethe different between the actual returns of the stock and expected returns of the firm as per the Event Study Approach by Campbell and MacKinley (1997) The abnormal returnsare measured as the deviation of actual returns from the returns predicted by the market model by using an estimation window of 180 days:, as follows;

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$$AR_{it} = R_{it} - E(R_{it})$$

The cumulative abnormal return of the acquiring firm is measured as follows;

$$CAR_{i[:1,t2]} = \sum_{i=1}^{t2} AR_{i,t}$$

CAR is computed for distinct event windows for pre and post announcement period. The event windows selected for the pre-announcement period are t-5, t-10 and t-20. Similarly, the event windows for post announcement period are t+5, t+10 and t+20. In order to study the impact of M&A announcements on shareholders wealth of acquiring companies the significant pre announcement CARs are compared to the respective post announcement CARs.

Similarly, the cumulative average abnormal returns have been tested using the following hypothesis

H2: M&A announcements do not impact the shareholders wealth across firms
(CAAR=0, i.e. cumulative average abnormal returns are not significant)

The average abnormal return for the year at t is measured using the following formula:

$$AAR_i = \frac{\sum_{i=1}^{N} AR_{i,t}}{N}$$

The accumulated effect of the event was measured using CAARs. The cumulative average abnormal returns (CAAR) for the acquirers for each event window are calculated as follows;

$$CAAR_i(t1,t2) = \frac{\sum_{i=1}^{t2} AAR\ (t1,t2)}{N}$$

The mergers are compared categorically by classifying the mergers and acquisitions into Index and Non Index acquirer deals thereby having four categories for the independent variable and testing the validity of the hypothesis framed as follows;

H5: μNIFTYPharma=μNon NIFTY Pharma= μNIFTY FMCG = μNon NIFTY FMCG

The comparison criteria is based on 5 day and 20 day post announcement event window CARs The data analysis is performed using SPSS 20.ANOVA tests the non-specific null hypothesis that all four group means are equal as follows

4. EMPIRICAL RESULTS
4.1. Impact of M&A on Shareholder's Wealth of Indian Pharma and FMCG Sectors
Exhibit 1 to Exhibit 5 captures the investor sentiments and stock market reactions testing the efficiency of the markets before and after the announcement of an M&A. The pre-announcement window depicts the possible leakages of information before an acquisition has been announced and the post event window highlights the possible stock price reactions to these announcements if there exist high magnitude abnormal returns. The results of the analysis aim to capture any deviations from the literature reviewed on the announcement impact of an M&A on the shareholders wealth.

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Exhibit 1. reveals that during the period 1998-2001, Balrampur (1998) and Tata Global (2000) generate high magnitude significant negative CARs in the 5 day pre announcement window implying a higher chance of leakage of insider information on the returns of the market which may have compelled the shareholders to act on the shares before the official public announcement of the M&A made which are contradicting with studies of Athanasoglou and Brissmiss (2005) who examined and concluded positive abnormal returns prior to merger announcement. During the post event windows ITC (2000) depicts a significant drop in returns i.e. 0.02% significant at 1% level immediately after announcement. These results are in line with the hypothesis framed on synergy (Sirower, 1997) which highlights that immediately pre and post announcement of the merger, the acquirer's stock returns are negatively affected.

Exhibit 2.captures the investor sentiments about the M&A announcements for the period 2002-2005. Cadila (2003), Beeyu (2005) and Marksans (2005) generated a large magnitude significant positive CARs immediately before announcement which supports studies of Athanasoglou and Brissmiss (2005). Suven (2003) depict significant positive CARs immediately after announcement.These results contradict the hypothesis framed on synergy (Sirower, 1997) which highlights that immediately before and after the announcement of merger, the acquirer's stock price is affected adversely. However evidence has been contributed to the high magnitude negative CARs generated as Piramal and United Spirits (2005) generated significant negative losses immediately after announcement i.e. -18.97% and -35.23% significant at 1% level in line with studies of Sheel and Nagpal (2000), Hsu & Jang (2006) & Amir Rafique (2013).

During the period 2006-2009 i.e. In Exhibit 3 Piramal (2006) and Marksans (2007) destroyed shareholders wealth immediately after announcements up to -36.26% and -21.60% respectively having statistical significance at 1% level whereas Strides (2006) and United Spirits (2007) generated wealth for its shareholders immediately after announcements.

Exhibit 4 and 5.depict summarizes the CARs of acquirers during the period 2010-2013 and 2014-2017 respectively. United Spirits (2010) generated significant positive CARs implying a possibility of insider information being leaked in the market which may have led to the shareholders acting positively on the shares before the official public announcement of the M&A. Aurobindo (2013) and Marksans (2015) contributed significant high positive returns immediately post announcement i.e. 15.45% and 30.32% respectively having a statistical significance of 1% level.

4.2. Consolidated CAARs for each year of the Indian Pharma and FMCG Sectors

Exhibit 6 summarises the year wise consolidated impact of the M&A announcement by analysing the CAARs for the investor holding a portfolio of stocks of acquirers for each year during 1998-2017. The consolidated impact has been analysed as the averaging of returns nullifies the impact of the announcement on shareholders holding a portfolio of the acquirer's stocks. The results of CAARs depicted a well-diversified portfolio but however the magnitude of the CAARs was low across the years generating negative as well positive returns which may imply that the averaging strategy has acted upon reducing the losses as well as gains generated due to the M&A announcement.

4.3. One-way ANOVA on CARs for the 5 day event window (1998-2017)

Exhibit 7. Descriptive Statistics for 5 day Post Event Window CARs

Categories	N	Mean	Std. Dev.	Shapiro Wilk Test (p-value)	Levene Statistic
NIFTY FMCG	67	-1.52	4.150	0.569	10.895***
Non Index FCMG	56	-0.36	2.993	0.107	
NIFTY Pharma	52	-1.38	6.937	0.199	
Non Index Pharma	57	0.25	4.019	0.598	

Exhibit 7 states that the Shapiro Wilk Test for Normality at a = .001, given that p = .569 for the NIFTY FMCG, p = .107for the Non Index FMCG, p = .199 for the NIFTY Pharma and

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p = .598 for Non NIFTY Pharma, hence the levels of the Independent Variable i.e. CARs are normally distributed.Therefore, the assumption of normality has been met for this sample. The F value for Levene's test for Equality of Variances is significant hence we reject the null hypothesis (no difference) for the assumption of homogeneity of variance and conclude that there is significant difference between the group's variances. That is, the assumption of homogeneity of variance is not met. However the CARs are further analysed using One-Way Anova.

Exhibit 8.Analysis of One-Way Anova for 5 day Post Event Window CARs

Source	Sum of Squares	df	Mean Square	F	p-value
Between	125.902	3	41.967	1.918	0.127
Within	4988.443	228	21.879		
Total	5114.345	231			

Exhibit 2.8 displays the results of one-way ANOVA of 5 day post event window CARs, revealing non statistically significant main effect [F(3, 228) = 1.918, p > .01] indicating that there was no difference in the overall CARs generated among all groups of acquirers

4.4.   One-way ANOVA on CARs for the 20 day event window (1998-2017)

Exhibit 9. Descriptive statistics for 20 day Post Event Window CARs

Categories	N	MEAN	Std. Dev.	Shapiro Wilk Test (p-value)	Levene's Statistic
NIFTY FMCG	74	0.068	6.836	0.378	16.603***
Non Index FCMG	56	-1.139	5.414	0.618	
NIFTY PHARMA	51	-4.051	13.616	0.708	
Non Index Pharma	57	-1.240	7.561	0.803	

Exhibit 9 states that the Shapiro Wilk Test for Normality at a = .001, given that p = .378 for the NIFTY FMCG, p = .618 for the Non Index FMCG, p = .708 for the NIFTY Pharma and p = .803 for Non NIFTY Pharma, hence the levels of the Independent Variable i.e. CARs are normally distributed. Therefore, the assumption of normality has been met for this sample. The F value for Levene's test for Equality of Variances is significant hence we reject the null hypothesis (no difference) for the assumption of homogeneity of variance and conclude that there is a significant difference between the group's variances. The assumption of homogeneity of variance is not met. However CARs are further analysed using One-Way Anova.

Exhibit 10.Analysis of One-Way Anova for 20 day Post Event Window CARs

Source	Sum of Squares	Df	Mean Square	F	p-value
Between	523.187	3	174.396	2.332	0.075
Within	17495.709	234	74.768		
Total	18018.896	237			

Exhibit 10 displays the results of one-way ANOVA of 20 day post event window CARs, revealing non statistically significant main effect [F(3, 234) = 2.332, p > .01] indicating that there was no difference in the overall CARs generated among all groups of acquirers

CONCLUSION

An M&A announcement may generate or destroy wealth to the shareholders of acquiring firms if the returns on the shares increase or decrease on the announcement of the merger. Around 51% of observations of CARs of acquirers during the period 1998-2017 are negative during pre-announcement

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period where as post announcement period experienced an increase up to 56% negative CARs which denote that a merger announcement generated significant negative CARs during the post announcement period and also provides evidence on M&A announcements providing positive significant abnormal returns pre announcement. Consolidated impact analysed with CAARs highlight that pre announcement period experienced 53% observations to be statistically different from zero i.e. negative abnormal returns and the post announcement period experienced an increase up to 66% negative CARs. The performance of Index and Non Index acquirers among the Pharma and FMCG sector were not statistically different from zero during the post announcement period window for the shortest event window i.e. t+5 and the longest event window i.e. Therefore it can be concluded that majority of the acquiring companies were not able to add value to the Shareholders wealth in the short run immediately post M&A announcement. The market reacted to the news of M&A in a negative manner expecting that M&A announced would not improve the performance of the acquirers in the Indian Pharma and FMCG Sector.

REFERENCES:

Brown, S. and Warner, J. (1985): Using Daily Stock Returns – The Case of Event Studies, Journal of Financial Economics 14, 3-31.

Athanasoglou, PP, Asimakopoulos, IG & Georgiou, EA. (2005). 'The effect of merger and acquisition announcement on Greek bank stock returns'. Economic Bulletin, vol. 24, pp. 27-44.

Brown, SJ & Warner, JB. (1984). 'Using daily stock returns: The case of event studies'. Journal of Financial Economics, vol. 3 no. 31..

Fama, E.F. (1970): Efficient Capital Markets: A Review of Theory and Empirical Work, Journal of Finance 25, 383-417.

Fama, E.F. (1991): Efficient Capital Markets: II, Journal of Finance 46, 1575-1617.

Kothari, S.P. and Warner, J.B. (2008): Econometrics of Event Studies, in: Eckbo, B.E. (ed.),

Priyanka Shah and Parvindar Arora . (2014): "M&A Announcements and Their Effect on Return to Shareholders: An Event Study" vol. 3 no. 2.

EXHIBIT 1 : CARs of Acquirers of Pharma and FMCG sectors in India for the period 1998-2001

Year/Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
1998 Gillette	-11.47	-17.28***	-6.92	-10.38***	-2.75	-3.07***	-0.89	-2.97***	1.11	2.99***	3.39	12.83***
Balrampur	23.92	9.00***	2.63	1.23	16.32	-7.29***	-0.12	-0.08	4.75	2.71***	13.50	-8.97***
1999 Marico	-14.92	-9.03***	-7.97	-7.62***	4.96	13.89***	-2.72	-2.29**	-7.94	-10.60***	-11.93	-18.12***
HUL	-10.93	-15.20***	-5.93	-6.16***	-7.03	-8.49***	2.94	6.62***	8.30	5.43***	8.67	10.47***
Vadilal	14.69	13.18***	10.55	5.38***	17.89	7.20***	0.02	0.01	10.13	-5.84***	-18.04	-12.47***
Balrampur	-1.08	-2.02**	0.19	0.21	-6.17	-6.66***	3.86	2.89***	9.60	6.37***	-2.10	-2.24**
2000 Tata Glob.	-3.73	-1.82*	15.82	-6.58***	18.29	-5.20***	10.33	-4.94***	24.11	13.31***	18.64	15.64***
HUL	-12.58	-14.21***	-4.92	-5.62***	-5.09	-3.70***	-7.19	-3.97***	-5.69	-5.46***	-1.81	-3.07***
ITC	-9.95	-7.39***	1.13	1.84*	3.72	3.29***	12.56	-21.30***	-8.61	-9.87***	-1.05	-1.12
2001 God. Ind.	5.79	4.60***	-7.93	-6.11***	-4.25	-8.36***	10.01	6.60***	5.56	6.99***	10.63	11.71***

	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
HUL	4.62	9.88***	2.13	4.89***	1.04	3.20***	6.67	13.58***	8.79	15.71***	6.19	17.56***
ITC	-7.64	-11.82***	-0.01	-0.01	-2.09	-3.71***	-7.22	-6.15***	-4.36	-7.07***	3.51	4.14***
Britannia	-6.67	-12.19***	0.00	-0.04	-0.17	-0.22	-2.44	-4.88***	-0.99	-2.48**	-1.35	-5.20***

Note: (1)'t' refers to announcement date, (t-n) means n days before announcement date,(t+n) means n days after announcement date.

(2) *, **, *** represents significance at 10%, 5% and 1% level respectively

EXHIBIT 2: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2002-2005

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2002	ITC	2.88	8.00***	1.53	5.83***	1.01	5.07***	-6.62	-5.14***	-6.41	-5.95***	-4.43	-7.44***
	Glaxo Con.	4.78	10.45***	1.53	2.64***	-1.49	-1.82*	1.36	7.34***	2.69	8.54***	3.18	13.28***
	United Sp.	4.29	6.30***	-1.78	-3.25***	-2.40	-4.20***	-5.32	5.84***	-8.01	-8.43***	-5.28	-9.65***
	Cadila	10.38	10.83***	8.28	14.76***	0.08	0.13	-4.89	-6.84***	-3.92	-9.82***	-3.67	-12.05***
	Piramal	12.69	11.83	10.69	4.76***	9.65	0.13	6.80	-6.84***	3.12	-9.82***	2.68	-12.05***
	Sunpharma	-0.51	-1.47	0.22	0.32	-1.24	-1.16	-5.77	-3.76***	-7.91	-6.88***	-6.29	-10.14***
	Glenmark	2.98	5.44***	1.93	3.06***	-1.02	-1.84*	-5.05	-2.98***	-2.26	-2.66***	-5.88	-11.14***
	Wockhardt	-4.11	-13.38***	2.21	8.86***	2.25	8.19***	-0.51	-0.82	-2.94	-8.70***	-4.05	-13.51***
	Pfizer	-2.96	-8.98***	-4.49	12.78***	0.94	2.04**	-6.77	-11.52***	7.81	11.86***	-2.23	-3.83***
	Morepen	-6.95	-6.22***	12.83	18.10***	3.90	4.02***	3.02	5.86***	1.54	3.20***	-1.66	-4.59***
	Orchid	-7.25	-13.82***	1.03	2.60***	0.61	4.23***	2.33	4.38***	4.20	10.35***	12.47	14.94***
2003	Marico	1.69	11.97***	-1.23	-6.66***	-0.01	-0.06	-2.46	-5.67***	-4.68	-9.71***	-6.40	-14.14***
	HUL	-1.49	-7.54***	-3.16	-11.45***	-1.84	-4.31***	-2.06	-4.22***	-2.89	-10.99***	-2.93	-14.09***
	ITC	-0.74	-3.06***	1.19	3.72***	-0.94	-2.77***	-1.20	-4.90***	-0.39	-2.10**	-0.09	-0.55
	United Sp.	15.60	21.47***	6.89	7.64***	3.57	3.05***	-4.88	-6.00***	-8.19	-15.49***	-0.64	-0.84
	Dabur	9.20	7.18***	-0.20	-0.29	-4.65	-5.06***	6.45	6.50***	9.99	9.71***	13.21	11.80***
	Godrej Con.	-0.49	-0.95	-2.60	-9.30***	-1.41	-10.25***	0.57	1.98***	0.40	2.38**	2.73	5.07***

EXHIBIT 2: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2002-2005 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2003	Cadila	16.33	9.15***	19.30	5.56***	17.70	4.28***	1.47	1.30***	-1.25	-1.67*	4.09	8.21***
	Piramal	25.57	17.92***	10.52	7.67***	5.29	4.26***	-3.05	-5.12***	-8.34	-14.01***	-22.19	-14.29***
	Wockhardt	0.19	0.34	-0.49	-0.77	3.99	3.20***	-6.80	-9.14***	-5.50	-11.32***	4.01	5.17***
	Suven	-0.98	-1.16	5.97	5.68***	0.73	1.46	8.31	2.89***	11.69	6.01***	6.51	6.22***
	Alembic L.	-9.44	-8.04***	0.89	0.85	5.56	22.22***	5.75	3.74***	18.36	9.24***	-1.84	-1.32
2004	ITC	-0.23	-1.05	-0.16	-0.59	-0.76	-2.07**	-1.64	-6.68***	-4.07	-11.21	-2.10	-7.48***
	Radico	2.12	10.34***	14.68	5.53***	2.28	1.31	-2.31	-3.58***	-6.78	-7.51***	-8.39	-11.41***
	Piramal	-1.14	-2.65***	2.10	2.98***	0.99	1.39	-1.08	-2.04**	9.50	4.35***	-3.72	-3.01***
	Sunpharma	3.57	7.79***	4.66	6.67***	5.76	6.19***	-1.08	-2.35*	6.56	6.67***	2.18	3.58***
	Glenmark	-0.69	-0.90	10.59	-9.90***	-3.97	-3.60***	-3.84	-3.18***	-1.25	-1.92*	-6.56	-11.57***
	Auronindo	-6.54	-7.70***	4.09	4.57***	-1.38	-2.32**	-9.70	-6.22***	-10.17	-8.60***	-15.56	-17.02***
	Dr. Reddy's	-12.23	-14.80***	-3.91	-4.61***	-3.01	-8.12***	-1.26	-1.36	7.70	5.90***	4.09	4.44***
	Glaxosmith.	-0.23	-0.49	2.93	3.60***	3.76	13.11***	-1.16	-1.27	1.74	2.55**	-1.46	-3.52***
	Jubilant L.	37.33	14.36***	14.04	11.72***	-9.82	-6.37***	3.74	10.25***	6.00	13.29***	1.86	5.59***
	Wockhardt	7.38	8.86***	7.90	6.08***	8.52	7.40***	4.25	3.41***	2.25	3.20***	-11.08	-8.47***
	Pfizer	19.74	13.38***	3.34	6.92***	0.85	1.32	2.92	7.86***	-3.20	-4.58***	-5.95	-9.01***

EXHIBIT 2: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2002-2005 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2004	Indoco Re.	10.38	10.83***	8.28	14.76***	0.08	0.13	-4.89	-6.84***	-3.92	-9.82***	-3.67	-12.05***
2005	Marico	8.481	13.72***	-3.27	-7.02***	1.53	3.17***	-6.09	-5.40***	-4.21	-7.43***	-15.20	-12.94***
	Tata Global	-7.32	-12.73***	-3.85	-10.63***	-2.50	-3.43***	-6.40	-6.86***	-8.89	-13.28***	-3.10	-6.72***
	HUL	0.43	0.75	-1.82	-3.03***	-6.02	-7.71***	1.46	2.58***	.30	1.12	-2.78	-9.52***
	ITC	-1.11	-1.68*	-7.93	-11.18***	-3.73	-7.65***	-0.18	-0.58	-0.56	-2.68***	2.10	7.78***
	United Sp.	36.39	13.15***	27.91	11.15***	5.63	3.67***	-18.97	-6.47***	-0.00	-0.01	-4.29	-2.93***

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Acquirers	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
Dabur	11.63	17.65***	4.44	4.33***	5.45	2.61***	4.00	4.65***	6.88	11.51***	14.29	18.17***
Godrej Con.	-1.25	-2.90***	0.78	1.34	1.26	2.70***	-0.49	-1.75*	2.42	3.96***	2.20	6.20***
Radico	5.14	5.63***	-4.77	-4.48***	1.54	1.49	-1.71	-2.55**	-8.59	-7.39***	-17.87	-10.52***
Beeyu	36.37	12.60***	16.52	4.96***	14.71	8.12***	-3.59	-2.55**	3.33	2.75***	18.18	11.62***
EID-Parry	-1.31	-1.32	-8.84	-5.10***	10.51	-5.71***	4.44	10.87***	-2.56	-2.39**	-8.01	-8.30***
Balrampur	-0.54	-1.35	2.43	4.78***	-3.30	-4.79***	-2.50	-8.46***	-3.35	13.33***	-8.33	-14.64***
Piramal	8.20	1.83*	26.90	-10.19***	-3.44	-3.31***	-35.23	-6.44**	-34.76	11.95***	11.34	-3.19***
Bajaj Hind.	-22.89	-13.53***	13.88	-12.04***	-6.18	-7.07***	-1.50	-1.50	-4.11	-4.94***	6.71	6.60***
Sunpharma	-1.26	-4.15***	0.16	0.40	0.89	1.52	0.41	1.42	5.46	7.50***	7.90	7.79***
Glenmark	2.93	6.16***	3.20	4.38***	2.32	2.02**	-10.05	-6.26***	-6.25	-5.22***	-6.85	-11.24***

EXHIBIT 2: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2002-2005 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2005	Aurobindo	9.55	18.57***	3.63	5.60***	-0.65	-1.32	-4.60	-8.26***	-10.29	-9.09***	-9.56	-14.61***
	Torrent	-0.36	-1.02	-1.87	-3.64***	-0.36	-0.62	-0.68	-2.02**	-3.77	-9.30***	-0.62	-1.12
	Jubilant L.	-2.58	-5.61***	-1.76	-4.45***	2.05	12.11***	-2.03	-5.05***	-0.72	-3.20***	-3.17	-9.82***
	IPCA	9.61	21.09***	6.11	9.67***	2.68	4.91***	-1.73	-3.03***	-5.85	-5.18***	-8.49	-10.67***
	Strides Sh.	-1.97	-3.97***	-3.57	-4.71***	-6.65	-7.15***	0.98	1.75*	5.08	6.53***	8.91	14.30***
	Unichem L.	-4.97	-11.77***	-1.92	-5.70***	-1.19	-2.36***	4.90	10.83***	1.20	2.68***	0.49	0.87
	Marksans	4.89	3.51***	17.34	7.26***	14.79	7.04***	-13.40	-9.67***	-24.46	-13.69***	-31.28	-16.76***

Note: (1)'t' refers to announcement date, (t-n) means n days before announcement date,(t+n) means n days after announcement date

*(2) *, **, *** represents significance at 10%, 5% and 1% level respectively.*

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EXHIBIT 3: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2006-2009

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2006	Marico	-2.10	-8.80***	0.14	0.91	0.11	0.55	-4.28	-5.08***	-5.42	-6.5***	-5.62	-12.83***
	Tata Global	-7.63	-16.03***	-4.15	-6.02***	-1.92	-5.46***	1.93	2.43***	-0.42	-0.78	-2.49	-2.81***
	United Sp.	9.04	6.13***	6.10	4.67***	-6.62	-3.57***	-7.92	-5.38***	-6.24	6.73***	-2.84	-5.25***
	Godrej Con.	-2.04	-3.06***	-1.68	-2.57**	-3.15	-3.68***	0.91	1.11	4.82	7.57***	-5.17	-6.98***
	Heritage F.	-4.12	-8.49***	-8.05	-10.31***	-4.09	-5.41***	-0.51	-1.49	-3.77	6.92***	-2.50	-7.44***
	Piramal	-12.16	-6.08***	-16.80	-6.46***	-0.78	-0.29	-36.26	7.72***	-32.90	6.86***	-29.99	11.71***
	Aurobindo	2.62	2.72***	11.10	7.86***	5.35	10.95***	-0.58	-1.04	-6.15	7.73***	-5.71	-9.75***
	Dr. Reddy's	0.12	0.177	-4.44	-4.54***	-6.62	-9.51***	3.92	4.45***	-0.51	-0.74	-1.08	-2.24**
	Wockhardt	9.90	19.11***	0.46	1.57	0.35	0.88	1.49	6.17***	1.49	8.57***	0.62	1.98**
	Strides Sh.	1.55	2.25**	-4.09	-11.98***	-1.41	-2.31**	14.51	6.18***	6.92	5.49***	14.20	17.07***
	Unichem L	7.64	7.87***	4.48	10.34***	1.68	5.25***	2.76	4.26***	-1.35	2.59***	-4.23	-8.47***
	Indoco Re.	-12.54	-14.59***	-4.61	-7.05***	-4.19	-5.67***	-5.02	7.32***	-2.81	4.31***	-6.43	-13.28***
	Suven	-7.10	-11.72***	2.87	4.68***	-3.11	-4.30***	-2.15	2.96***	-2.34	4.13***	6.21	12.06***
	Bliss	31.91	15.07***	12.82	5.11***	12.01	7.22***	-4.22	-2.92**	-4.74	-4.34***	-4.85	-5.25***
2007	Marico	4.12	9.54***	3.05	5.80***	3.00	3.93***	5.20	3.74***	1.29	1.01	-4.14	3.78***
	Tata Global	15.30	13.74***	18.49	11.98***	12.28	4.90***	-2.57	4.86***	1.32	3.16***	12.51	12.21***
	ITC	3.24	8.17***	-0.02	-0.08	-0.81	-2.11**	-2.19	-4.37***	-4.69	-8.07***	-4.20	-11.56***

EXHIBIT 3: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2006-2009 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2007	United Sp.	-8.49	17.10***	-2.55	-3.44***	-6.34	-5.24***	22.75	14.48***	23.72	-7.39***	14.86	15.14***
	Colgate	-4.86	-7.83***	2.55	5.50***	2.69	4.91***	-1.47	-1.94*	-0.30	-0.47	5.70	9.29***
	Godrej Con.	4.12	15.74***	-0.09	-0.25	3.07	5.18***	-8.36	6.55***	-9.73	-7.99***	-9.62	11.16***
	Shree Renu.	1.44	2.24**	-8.27	-8.76***	-2.57	3.19***	-11.83	5.55***	-21.22	-9.77***	-26.22	15.25***
	Mawana	13.81	6.48***	17.29	6.61***	6.98	7.02***	-7.19	5.13***	-10.52	-6.86***	-16.02	14.46***
	Cadila	-1.54	-2.87***	-2.64	-4.38***	-1.44	5.32***	3.52	9.23***	3.71	15.71***	1.31	3.94***
	Glenmark	0.63	1.80*	6.29	16.68***	1.77	3.86***	-1.97	2.90***	-3.45	-6.28***	-8.23	-9.67***
	Lupin	-8.68	17.27***	-1.96	-3.94***	-1.81	5.00***	1.53	2.09**	-0.48	-0.97	2.75	5.09***
	Natco	-3.66	-4.90***	10.02	-7.70***	-2.64	4.20***	-3.15	4.86***	-5.96	-6.83***	-12.36	11.87***
	Jubilant L.	-5.03	12.02***	-4.74	-9.57***	-3.66	6.21***	2.78	4.36***	2.65	7.98***	4.29	21.07***
	Wockhardt	6.44	11.08***	0.91	2.26**	3.90	5.26***	-3.56	7.53***	-4.39	11.28***	-5.07	18.11***
	IPCA	-4.89	10.35***	-1.00	-2.03**	-2.42	2.79***	-0.30	0.77***	-6.89	-8.01***	-10.69	12.49***
	Strides Sh.	0.93	1.32	3.04	2.75***	1.89	1.50	1.70	1.61	2.60	4.73***	2.76	8.48***
	Marksans	62.80	12.76***	31.88	9.75***	10.58	9.06***	-21.60	5.50***	-33.78	-9.89***	-48.24	12.72***
	Alembic L.	2.53	5.88	7.12	10.08***	1.17	1.42	5.48	5.33***	0.94	1.33	0.72	1.12
2008	ITC	-5.27	13.59***	-3.10	10.66***	-0.90	3.38***	-0.61	-1.95*	1.11	4.20***	2.31	8.77***

EXHIBIT 3: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2006-2009 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2008	United Sp.	9.07	5.85***	11.41	6.59***	8.91	2.64***	6.28	3.66***	8.15	7.06***	2.83	3.66***
	Colgate	-4.09	-6.41***	-1.13	-3.72***	-2.60	5.62***	-1.35	-2.01**	7.01	5.80***	8.38	10.33***
	Dabur	0.73	0.45	12.37	10.24***	10.33	5.82***	13.09	5.75***	5.04	4.37***	5.71	7.81***
	Tilaknagar	69.45	15.34***	73.22	-9.86***	39.66	7.26***	35.32	-7.20***	-72.41	10.43***	154.64	15.40***

Acquirers	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
Khoday	-23.01	-12.48***	-22.77	-6.53***	25.21	7.06***	12.21	-6.58***	-41.13	-9.34***	-32.94	-9.08***
Empee	28.33	10.61***	11.97	2.44**	20.64	6.88***	12.88	2041**	36.33	7.10***	23.70	7.59***
Shree Renu	5.22	3.70***	-4.29	-4.25***	-5.86	2.78***	4.92	4.26***	8.38	7.84***	0.28	0.34
DCM Shri.	-15.19	-11.40***	-15.97	-8.72***	-8.03	6.59***	-1.24	-1.03	-2.66	-3.49***	11.97	9.70***
Sakthi	10.32	10.05***	2.07	1.87*	7.71	6.83***	-7.83	-12.30***	-16.23	-11.55***	-17.97	-12.81***
Picadilly	13.13	7.39***	6.18	3.61***	4.13	2.72***	12.47	3.56***	16.72	5.72***	19.98	11.24***
Cadila	-2.58	-2.08**	7.44	4.01***	-5.14	6.02***	5.95	5.78***	15.42	11.11***	10.52	10.92***
Piramal	14.53	11.58***	11.62	5.92***	8.47	6.34***	1.19	1.32	1.56	3.15***	-1.82	-2.76***
Sunpharma	-0.59	-1.24	-1.64	2.16**	-3.81	3.33***	-4.41	-3.83***	-3.05	-3.68***	-2.12	-3.94***
Glenmark	-1.20	-2.54**	-2.90	-9.39***	-0.95	2.68***	-1.35	-4.66***	0.03	0.04	1.80	3.34***
Aurobindo	-12.02	10.45***	-16.94	-8.73***	-12.49	5.43***	-15.67	6.22***	14.91	10.15***	24.91	20.61***
Dr. Reddy's	-9.17	13.43***	11.78	-9.25***	-4.15	4.15***	-1.32	-3.73***	1.79	2.38***	-3.11	-6.39***

EXHIBIT 3: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2006-2009 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2008	Lupin	5.51	11.55***	7.76	10.09***	5.64	3.76***	-2.05	-9.24***	7.66	6.75***	-0.91	-0.89
	Jubilant L.	-6.48	-10.21***	4.50	11.23***	-0.49	-1.29	3.67	3.93***	2.44	4.56***	0.66	1.75*
	Sequent	-19.79	13.24***	-29.02	13.69***	-17.66	6.93***	39.96	8.17***	36.00	7.96***	31.21	14.02***
	Marksans	4.63	2.92***	-1.64	0.74	11.81	6.83***	-13.03	-9.94***	-17.58	17.29***	-38.15	20.64***
	Alembic L.	-8.53	15.27***	-6.46	-11.8***	-4.94	6.38***	-8.73	-5.72***	-12.91	-8.00***	-22.60	14.99***
2009	Tata Global	-8.10	-6.87***	12.20	-7.46***	-0.98	-1.68*	-2.01	-5.26***	7.55	7.49***	3.25	3.65***
	United Sp.	7.81	7.13***	4.64	6.82***	-0.62	-1.06	5.07	5.27***	11.59	7.52***	2.66	2.70***
	Britannia	10.47	9.26***	4.53	7.63***	-4.38	9.11***	-1.45	-1.92*	1.43	3.26***	6.20	7.48***
	NTC ltd.	-8.60	-6.79***	18.64	-9.02***	-15.14	6.86***	-0.38	-0.28	2.28	1.89*	-22.24	10.86***
	EID-Parry	-13.74	12.41***	-8.32	-8.25***	-4.39	6.08***	3.14	4.60***	0.29	0.59	-5.85	-7.13***

Acquirer	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
Shree Renu	-1.64	-1.38	-1.15	-0.79	10.58	8.14***	5.70	13.05***	-1.57	-1.41	-7.45	-7.55***
Aurobindo	8.91	8.09***	10.21	14.62***	4.15	5.43***	0.80	2.96***	6.34	8.59***	14.90	15.78***
Lupin	-2.05	-3.53***	-2.14	-3.61***	-1.67	-1.81	9.41	4.74***	7.57	5.99***	2.78	3.47***
Biocon	-11.09	-14.63***	-6.90	-10.06***	-1.98	3.70***	-2.05	-2.62***	3.24	4.45***	-10.87	-11.49***
Aarti Ind.	-0.81	-.1.22	-5.73	-6.06***	-0.56	-0.65	-0.30	-0.56	1.68	2.16**	4.10	8.30***

EXHIBIT 4: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2010-2013

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2010	Marico	-2.19	-5.3***	-1.19	-3.72***	-3.33	-7.17***	-2.26	-3.87***	0.53	1.155***	-1.21	-2.19**
	United Sp.	3.65	4.99***	8.72	8.49***	1.15	3.24***	-4.67	-7.61***	-9.38	-9.53***	-6.67	-11.50***
	Dabur	2.41	5.15***	-2.26	-3.86***	-1.72	-2.84***	-0.90	-1.81*	1.41	2.66***	12.73	14.02***
	Godrej Con.	1.96	2.01**	2.70	2.33**	7.61	7.72***	11.21	18.86***	2.48	1.96**	11.46	13.51***
	United Bre.	11.61	5.86***	16.98	7.21***	-3.40	-2.08**	-3.73	-5.49***	-10.48	-8.76***	-6.57	-6.64***
	Globus Sp.	5.68	8.39***	8.30	6.25***	10.86	4.60***	-0.47	-0.95	0.29	0.76	-9.94	-8.45***
	Tilaknagar	8.05	5.49***	11.17	7.29***	0.17	0.09	-3.55	-3.60***	-17.95	-10.60***	-27.76	-10.56***
	ADF	3.94	4.82***	0.73	0.54	8.55	3.53***	3.68	4.26***	4.22	5.38***	2.54	3.30***
	Balrampur	7.29	12.30***	-2.82	-3.53***	-2.62	-3.26***	5.81	4.71***	6.80	5.50***	9.81	13.75***
	Bajaj Hind.	4.37	7.59***	3.37	5.11***	2.80	3.70***	-5.71	-16.75***	-0.65	-0.72	2.94	3.68***
	Shree Renu	-18.49	-12.02***	-2.32	-3.65***	-3.43	-3.27***	-12.68	-7.55***	-3.09	-2.99***	-25.49	-15.18***
	Venky's	23.70	15.70***	-5.79	-5.18***	-8.12	-5.26***	-3.55	-6.04***	-5.83	-10.17***	-19.76	-15.69***
	Piramal	0.29	0.43	-3.66	-4.82***	-4.55	-7.48***	-2.16	-3.14***	4.59	4.62***	14.48	9.69***
	Dr. Reddy's	5.84	16.29***	0.62	2.71***	0.07	0.30	1.37	6.42***	1.71	5.23***	-4.26	-8.62***
	Cipla	-1.65	-4.51***	-2.76	-5.64***	-0.18	-0.34	-0.44	-3.31***	-0.30	-2.04**	-3.62	-14.18***

EXHIBIT 4: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2010-2013 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2010	Strides Sh.	-5.56	-10.89***	-4.77	-7.73***	-7.20	-8.30	-3.40	-3.35***	-7.03	-6.62***	-2.98	3.86***
	Orchid	-7.25	-13.82***	1.03	2.60***	0.61	4.23***	2.33	4.38***	4.20	10.35***	12.47	14.94***
2011	Marico	-7.78	-11.21***	-6.65	-9.17***	-3.01	-7.66***	6.05	5.82***	1.61	2.29**	0.04	0.09
	United Sp.	-4.23	-8.05***	2.31	8.46***	0.69	1.90*	10.61	7.88***	7.48	11.41***	8.20	19.43***
	Dabur	-5.81	-6.98***	1.89	3.06***	4.08	3.85***	-1.55	-7.10***	1.03	4.36***	2.21	9.50***
	Tilaknagar	-3.65	-3.32***	6.04	4.64***	10.07	4.33***	-1.58	-4.34***	2.45	2.79***	5.03	8.92***
	Ravikumar	-15.27	-4.74***	37.34	7.97***	2.29	0.46	-4.31	0.86	-51.08	-8.17***	-77.56	-13.41***
	Bajaj Corp.	8.52	17.53***	1.62	4.14***	3.65	4.94***	-15.14	-13.56***	-17.65	-27.71***	-19.99	-41.45***
	FDC	5.11	12.30***	3.27	5.80***	2.24	6.75***	-4.33	14.38***	0.16	0.34	-13.28	16.77***
	Jyothy Labs	28.33	10.62***	11.97	2.44**	20.64	6.88***	12.88	2.41**	36.33	7.10***	23.70	7.90***
	Sita Shree	-8.24	-9.23***	-4.36	-8.53***	-2.82	-4.22***	10.65	3.29***	13.59	5.93***	11.59	8.80***
	EID-Parry	-1.11	-3.70***	0.17	0.47	1.67	2.68***	-7.08	-7.94***	-6.99	-10.59***	-7.79	-15.81***
	Shree Renu	2.17	2.29**	7.09	5.37***	-0.91	-0.38	7.46	3.71***	8.84	6.71***	3.97	3.87***
	Cadila	-30.04	-15.48***	-13.73	-16.50***	-5.32	-3.65***	-5.66	-4.89***	-10.30	-10.33***	-17.32	-15.26***
	Piramal	3.46	8.72***	4.49	7.58***	1.47	7.20***	0.17	0.60	6.60	6.15***	11.18	10.67***
	Lupin	-2.26	-5.80	-1.03	-2.15	-4.05	-4.72***	3.89	4.48***	1.78	3.25***	-3.64	-5.15***

EXHIBIT 4: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2010-2013 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2011	Strides Sh.	-7.64	-7.98***	-1.26	-1.06	1.92	3.83***	4.22	7.48***	2.72	9.81***	-0.51	-1.22
	FDC	5.11	12.30***	3.27	5.80***	2.24	6.75***	-4.33	14.38***	0.16	0.34	-13.28	16.77***
2012	Marico	5.70	7.63***	5.28	6.25***	-2.09	-8.51***	-4.16	-10.33***	-5.25	-14.64***	-5.67	-24.15***
	Tata Global	8.18	12.94***	1.65	5.80***	0.69	1.77*	-6.14	-6.26***	-6.60	-7.02***	-5.92	-11.04***
	United Sp.	33.42	18.83***	27.07	8.94***	19.84	6.19***	-2.23	-2.13**	-7.51	-7.21***	2.34	2.20**

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Acquirers	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
Godrej Con.	2.68	9.37***	3.05	8.44***	2.24	4.10***	7.60	6.56***	8.27	10.03***	7.52	16.35***
United Bre	10.55	10.57***	1.50	1.32	8.59	5.20***	-0.24	-1.22	1.07	4.55***	-0.10	-0.29
Tilaknagar	0.80	1.01	2.06	1078*	-7.63	-4.89***	10.25	-3.84	-8.87	-6.74***	-7.32	-8.97***
Jyothy Labs	11.80	12.38***	3.98	15.91***	0.44	1.30	-6.24	-6.70***	-2.83	-4.28***	-9.34	-14.71***
EID-Parry	0.36	0.96	-0.28	-1.13	-0.18	-0.80	-4.55	-5.19***	-7.25	-8.97***	-14.11	-19.00***
Dhampur	-8.41	-10.77***	-7.01	-16.76***	1.73	16.23***	-2.41	-6.69***	1.93	2.37**	13.60	12.68***
Piramal	-4.20	-18.03***	-1.55	-4.37***	-3.00	-4.53***	-1.51	-2.35**	0.43	0.61	6.33	9.89***
Sunpharma	-6.28	12.46***	-3.27	-8.19***	-1.87	-4.88	-0.69	-5.29***	2.55	7.01***	-2.96	-9.67***
Dr. Reddy's	2.01	5.40***	-0.12	-0.61	1.96	7.62***	1.26	2.38**	1.26	2.97***	0.62	2.53**
Cipla	5.35	8.98***	3.06	17.81***	-0.33	-0.93	0.81	1.57	1.81	3.06***	1.00	3.08***

EXHIBIT 4: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2010-2013 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2012	IPCA	-10.86	-20.38***	-9.10	-9.11***	-9.02	-5.10***	-1.29	-1.77*	-6.20	-10.90***	-12.80	-12.13***
	Strides Sh.	2.05	4.67***	0.56	1.25	3.00	11.42***	4.36	7.90***	4.30	10.82***	0.57	1.16
	Indoco Re.	6.90	10.93***	0.81	1.61	0.30	0.71	-2.36	-8.64***	-3.50	-6.32***	-5.79	-12.95***
	Bliss	-8.53	-17.85***	-2.42	-6.97***	1.64	4.05***	27.42	5.03***	32.01	10.28***	36.21	18.14***
2013	Tata Global	2.16	3.94***	-1.58	-2.78***	-4.73	-5.32***	-6.09	-20.44***	-5.84	-21.73***	-4.58	-16.24***
	HUL	2.96	6.86***	5.50	15.89***	1.27	2.10**	0.62	3.89***	-4.65	-6.32***	5.67	5.19***
	Dabur	2.16	3.94***	-1.58	-2.78***	-4.73	-5.32***	-6.09	-20.44***	-5.84	-21.73***	-4.58	-16.24***
	Godrej Con.	-5.71	-15.50***	-1.41	2.54**	-4.07	-4.81***	-0.88	-3.55***	-2.45	-8.93***	-3.79	-10.10***
	Tilaknagar	-5.79	-6.66***	-4.04	-3.32***	-5.00	-6.58***	-1.67	-0.93	-8.88	-8.46***	-4.93	-6.99***
	Bajaj Corp.	2.25	4.99***	-5.74	-14.02***	-3.59	-7.62***	2.93	3.43***	-0.97	-1.04	2.89	4.17***
	Kwality	27.35	12.22***	4.73	7.80***	2.28	3.04***	-0.08	-0.31	-0.96	-2.08**	-1.86	-5.60***
	Piramal	-2.33	-6.12***	0.14	0.41	-0.99	-3.82***	-0.60	-2.62***	-1.85	-8.07***	-5.78	-9.14***
	Aurobindo	-12.62	-10.68***	-0.51	-0.30	-1.74	-1.06	15.45	15.03***	15.22	19.18***	10.85	22.75***

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Acquirers	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
Cipla	0.40	1.05	-5.57	-7.63***	-4.79	-9.57***	-1.02	-4.73***	0.54	2.81***	1.58	9.68***
Torrent	3.93	7.76***	6.09	8.32***	3.05	6.10***	-0.91	-2.08**	-2.69	-10.23***	-5.11	-13.83***
Pfizer	32.35	13.71***	29.42	10.47***	18.64	6.13***	17.42	14.42***	-10.35	-3.06***	-16.78	-4.76***

EXHIBIT 4: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2010-2013 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2013	Granules	13.57	12.86***	5.55	7.74***	1.91	3.96***	-5.95	-3.20***	-3.94	3.65***	-8.38	10.40***

Note: (1)'t' refers to announcement date, (t-n) means n days before announcement date,(t+n) means n days after announcement date.
(2) *, **, *** represents significance at 10%, 5% and 1% level respectively.

EXHIBIT 5: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2014-2017

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2014	Tata Global	-7.38	-9.35***	-4.54	12.05***	-1.73	-4.06***	2.71	6.26***	-3.28	-4.20***	7.95	7.04***
	Godrej Ind	3.21	4.95***	-0.98	-1.41	3.92	4.44***	-2.63	-8.68***	-3.18	15.88***	5.79	-11.07***
	ITC	0.26	2.19**	-1.02	7.39***	-0.02	-0.17	-3.77	10.90***	-4.66	13.46***	-4.34	22.05***
	Godrej Con.	12.87	10.83***	-5.80	-5.29***	5.99	5.53***	0.25	0.50	6.37	9.34***	5.90	6.91***
	United Bre	-4.33	12.00***	-1.29	-2.36**	-3.75	-5.51***	-2.58	-5.80***	-6.19	12.06***	-9.85	12.60***
	Emami	11.80	10.07***	6.15	8.79***	2.06	1.75*	-2.88	-4.27***	-5.50	12.84***	-8.90	15.16***
	Tilaknagar	8.18	12.79***	5.89	5.95***	4.54	10.95***	-5.77	-9.21***	-5.65	12.30***	3.39	5.81***
	Empee	11.80	12.38***	3.98	15.91***	0.44	1.30	-6.24	-6.70***	-2.83	-4.28***	-9.34	14.71***
	Sunpharma	-5.73	17.81***	-2.38	-6.14***	-2.35	-3.00***	3.55	23.27***	2.86	21.35***	2.32	12.22***
	Aurobindo	-8.32	16.86***	-3.43	-9.96***	0.68	1.39	5.11	7.03***	-0.78	-1.15	-0.49	-0.90

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EXHIBIT 5: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2014-2017 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2014	Dr. Reddy's	-4.79	-8.07***	-3.15	-6.56***	-3.88	-5.83***	-2.40	-4.97***	-2.66	-8.77***	0.41	1.45
	Lupin	-7.68	-13.67***	-2.39	-4.39***	-2.51	-4.58***	-1.92	-5.99***	-1.45	-4.58***	1.83	6.52***
	Cipla	-4.50	-7.91***	-8.85	-10.55***	-4.47	-5.97***	0.72	1.72*	1.21	4.55***	-2.10	-5.79***
	Jubilant L.	-8.18	-6.37***	-17.57	-9.63***	-4.32	-8.61***	-0.32	-0.63	-2.13	-3.26***	-4.94	-11.02***
	IPCA	2.99	5.08***	0.85	1.43	0.73	0.78	-3.96	21.84***	-11.02	-9.31***	16.89	18.33***
	Strides Sh.	-2.66	-2.79***	-12.61	-7.97***	-11.03	4.32***	8.09	6.04***	-2.31	1.20	-2.30	1.60
	Sequent	-17.93	-11.63***	-7.88	-6.28***	-1.77	-1.20	4.10	2.23**	23.89	7.88***	34.84	11.03***
2015	Godrej Ind	0.09	0.15	2.15	3.07***	3.57	3.73***	0.75	2.44**	-0.89	-2.38**	-6.29	-9.99***
	HUL	3.18	4.11***	8.57	8.20***	2.99	4.27***	-4.20	-7.15***	-8.92	-10.56***	-6.42	-12.20***
	ITC	1.75	9.46***	-0.88	-7.08***	-0.12	-0.88	1.07	3.88***	0.32	1.12	0.57	3.67***
	Godrej Con.	-2.48	-2.73***	3.24	13.38***	0.98	4.01***	10.24	5.83***	8.53	7.04***	2.39	3.30***
	Tilaknagar	-18.59	-14.77***	-16.52	-7.81***	-13.84	5.35***	9.42	11.56***	7.37	9.70***	7.58	13.65***
	Pincon Sp.	-8.73	-8.03***	-4.01	-3.94***	-2.88	4.23***	-7.84	-4.59***	0.27	0.23	-2.74	-3.63***
	Cadila	-12.71	-14.16***	-6.57	-5.39***	-6.91	7.07***	0.45	0.47	-4.56	-4.15***	-11.23	-8.86***
	Piramal	2.07	9.81***	-2.05	-7.14***	-2.49	7.29***	-3.75	-6.90***	-4.75	-12.053***	-5.04	-17.11***
	Dr. Reddy's	-2.46	-10.38***	0.80	3.51***	-0.47	2.84***	4.80	4.91***	3.73	6.02***	1.88	4.41***

EXHIBIT 5 : CARs of Acquirers of Pharma and FMCG sectors in India for the period 2014-2017 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2015	Lupin	6.55	15.26***	0.00	0.03	2.61	8.56***	1.52	2.63***	4.50	6.42***	-5.25	-7.71***
	Cipla	-9.98	-10.24***	-0.63	-1.68*	0.51	1.26	1.82	13.28***	-1.29	-3.11***	-0.61	-0.95
	Biocon	2.82	8.24***	-2.68	-6.92***	0.73	3.02***	-1.66	-3.68***	0.72	2.33**	2.29	6.95***
	Torrent	0.91	-1.65*	-9.11	-16.15***	-5.20	-6.05***	-0.69	-0.93	5.52	7.45***	0.32	0.69

Year	Acquirers	t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
	Strides Sh.	-5.47	-7.29***	3.49	4.16***	5.00	5.69***	3.97	3.37***	5.48	6.08***	1.57	3.23***
	JB. Chem.	-1.02	-2.00**	-2.07	-2.51**	-3.01	-4.38***	0.83	1.00	4.21	7.13***	0.48	0.93
	Indoco Re.	8.92	12.23***	-2.13	-2.46**	5.11	4.61***	-4.52	-5.72***	-8.09	-13.32***	-7.59	-15.46***
	Sequent	-1.53	-2.74***	1.66	2.51***	-2.27	-2.29**	6.70	3.20***	13.85	6.58***	18.27	14.41***
	Marksans	-12.29	-17.38***	-3.83	-5.02***	-6.20	-4.42***	30.32	6.04***	30.33	8.82***	39.35	21.05***
2016	Dabur	8.11	14.50***	6.89	8.24***	3.09	4.59***	0.42	1.37	-1.52	-2.49**	0.16	0.47
	Godrej Con.	-3.60	-5.69***	0.64	0.84	3.76	4.23***	0.67	2.53**	0.17	0.39	-1.10	-4.15***
	Pincon Sp.	-12.28	-6.64***	-8.26	-7.92***	0.16	0.13***	-3.55	-5.73***	3.07	2.54**	-3.57	-4.99***
	Heritage F.	-2.11	-3.88***	-0.48	-0.81	-5.13	-5.03***	-13.04	-5.86***	-9.56	-8.26***	-6.15	-10.05***
	Dhampur	-0.05	-0.05	-9.47	-8.90***	-5.05	-6.27***	-8.22	-4.92***	-11.81	-9.49***	-7.39	-8.81***
	Cadila	3.89	8.51***	2.40	2.85***	2.92	1.85*	-0.82	-1.56	1.44	4.39***	2.35	6.89***

EXHIBIT 5 : CARs of Acquirers of Pharma and FMCG sectors in India for the period 2014-2017 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2016	Piramal	-6.78	-9.44***	-8.43	-9.92***	-0.74	-0.93	1.97	4.09***	4.95	8.64***	17.39	14.28***
	Sunpharma	-3.72	-7.77***	0.39	1.08	0.76	1.66*	-1.65	-7.34***	-1.74	-10.38***	-5.11	-14.31***
	Dr. Reddy's	9.27	10.75***	1.51	2.44**	-0.98	2.38**	-2.03	-4.81***	1.90	4.46***	6.17	9.77***
	Lupin	-2.77	-8.69***	-3.37	-9.25***	-2.88	-4.23***	-4.71	-10.98***	-4.60	-13.13***	0.16	0.51***
	Cipla	1.98	22.54***	0.60	4.62***	0.95	4.22***	-0.43	-2.23**	-3.55	-7.14***	-5.48	-11.22***
	Strides Sh.	-2.52	-8.34***	-2.16	-8.73***	0.95	4.16***	-0.37	-0.92	-3.15	-9.33***	-1.22	-4.96***
	Indoco Re.	6.42	13.75***	1.00	1.74***	3.87	5.41***	-0.37	-0.45	-4.08	-4.24***	-5.64	-9.21***
	Sequent	-0.89	-0.88	2.68	1.43	-1.63	3.30***	-5.90	-4.79***	-15.83	-10.21***	-12.71	-13.47***
	Marksans	-12.29	-17.38***	-3.83	-5.02***	-6.20	-4.42***	30.32	6.04***	30.33	8.82***	39.35	21.05***
2017	Marico	3.95	8.59***	2.23	4.88***	-0.28	-0.82	-1.59	-3.19***	-1.81	-4.27***	-5.68	-11.48***
	Godrej Con.	5.08	11.37***	4.72	6.92***	5.15	4.97***	2.22	3.39***	-4.49	-6.37***	-1.24	-2.79***
	Foods & In.	-6.78	-8.82***	4.02	5.00***	1.41	1.50	10.67	5.99***	8.23	5.44***	20.33	18.51***
	Piramal	0.04	0.08	-6.06	-6.19***	-7.73	-9.72***	-0.91	-1.03	2.55	4.22***	0.08	0.12

Sunpharma **-1.11** *-5.95**** **0.45** *2.09*** **0.98** *2.90**** **-1.26** *-5.35**** **-0.80** *-3.62**** **-0.07** *-0.26*

EXHIBIT 5: CARs of Acquirers of Pharma and FMCG sectors in India for the period 2014-2017 (Contd..)

Year	Acquirers	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2017	Aurobindo	0.50	2.40**	1.17	3.79***	1.96	9.03***	1.88	9.46***	2.46	7.44***	-1.16	-2.80***
	Torrent	4.01	6.28***	1.28	2.62***	-2.88	-6.85***	6.79	4.17***	5.01	5.30***	10.75	12.32***
	Jubilant L.	1.62	2.57**	-0.38	-0.52	-5.09	-5.84***	1.40	2.63***	-1.46	-3.67***	-8.91	-8.97***
	Eris Life S.	-13.21	-12.31***	-4.15	-8.15***	-1.50	4.40***	-0.95	-2.65***	9.89	6.78***	7.72	8.47***
	Alembic Ph.	-0.95	-4.63***	1.73	5.30***	1.49	2.53**	2.92	4.84***	4.43	9.53***	3.84	13.65***
	Strides Sh.	-9.32	-11.51***	-1.00	-2.69***	-3.04	-4.67***	1.31	3.18***	3.80	6.84***	-3.72	-4.65***

Note: (1)'t' refers to announcement date, (t-n) means n days before announcement date,(t+n) means n days after announcement date.
(2) *, **, *** represents significance at 10%, 5% and 1% level respectively.

EXHIBIT 6: CAARs of Acquirers of Pharma and FMCG sectors in India for the period 1998-2017

Year	N	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
1998	2	6.22	5.39***	-2.14	-1.78*	-9.53	-6.37***	-0.50	-0.68	2.92	3.72***	-5.05	-7.10***
1999	4	-3.05	-6.84***	-0.79	-2.98***	2.41	18.28***	1.02	1.32	-0.04	-0.07	-5.85	-12.22***
2000	3	-8.75	-14.08***	-6.53	-8.34***	-6.55	-6.02***	10.02	-7.07***	-12.80	-13.47***	-7.16	-13.69***
2001	4	-0.97	-3.79***	-1.45	-8.12***	-1.36	-12.68***	1.75	11.09***	2.24	20.53***	4.74	11.15***

EXHIBIT 6: CAARs of Acquirers of Pharma and FMCG sectors in India for the period 1998-2017

Year	N	Pre-Announcement Returns						Post-Announcement Returns					
		t-20	t-stat	t-10	t-stat	t-5	t-stat	t+5	t-stat	t+10	t-stat	t+20	t-stat
2002	11	1.26	4.57***	2.86	16.18***	0.24	2.35**	-3.01	-5.75***	-3.15	-8.06***	-1.95	-7.91***
2003	10	4.62	12.27***	3.72	5.55***	3.26	5.15***	-0.43	-2.57**	-0.07	-0.39	-1.67	-10.05***
2004	13	1.07	4.37***	1.46	4.64***	-0.10	-0.35	-0.73	-1.87*	1.10	4.41***	-2.85	-10.83***
2005	22	1.00	14.07***	0.09	0..74	0.37	2.83***	-4.22	-6.96***	-4.25	11.42***	-3.18	-13.80***
2006	15	0.98	3.09***	-0.51	-2.18**	-0.84	-2.45**	-2.40	-7.39***	-3.81	-8.28***	-3.36	-11.86***
2007	18	4.34	12.03***	3.29	10.31***	1.42	8.61***	-1.17	-2.45**	-3.62	-5.69***	-5.54	-9.65***
2008	22	-8.44	-	-6.37	-	-3.40	-	1.20	2.67***	-0.15	-0.48	-5.90	-10.95***

		18.02***		12.92***		4.14***						
2009	10	-1.88	-6.05***	-3.57	-7.26***	-1.5	5.46***	1.79	4.54***	4.04	8.88***	-1.25	-3.37***
2010	17	-0.22	-1.49	1.65	17.18***	-0.16	-1.20	-1.12	-3.66***	-1.67	-7.26***	-2.46	-7.24***
2011	17	-2.60	-6.04***	2.54	4.73***	1.51	7.74***	0.62	1.15	-0.55	-1.53	-5.89	-11.33***
2012	16	3.90	18.36***	2.14	7.78***	1.58	5.55***	0.04	0.27	0.73	4.30***	1.06	7.55***
2013	13	4.66	9.85***	2.38	10.70***	-0.19	-1.07	1.01	8.23***	-2.51	-6.56***	-1.38	-4.76***
2014	17	-2.71	-9.99***	-3.23	11.47***	-1.02	6.28***	-0.46	-3.18***	-1.01	-8.09***	0.19	1.13
2015	18	-2.82	13.42***	-1.69	-6.98***	-1.21	7.09***	2.73	6.00***	3.14	9.45***	1.64	6.89***
2016	14	-0.36	-1.69*	-1.14	-8.12***	0.00	0.01	-2.71	-6.13***	-3.16	-9.88***	-1.58	-9.88***
2017	11	-1.47	10.81***	0.36	2.89***	-0.86	6.62***	2.04	6.21***	2.52	6.89***	1.99	7.68***

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