

An Empirical Analysis on Long-Run Announcement Effects of M&A on the Shareholders Wealth: A Case Study of Indian Pharmaceutical and FMCG Sector

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ABSTRACT

Before the period of liberalisation that marked its beginning in early 1990s, M&A were restrained through the protectionist policies introduced by the government of India. The liberalisation, privatisation and globalisation reforms marked the growth of M&As in India by introducing Indian firms to global markets thereby providing them an opportunity to create synergies. The growth in Indian M&A was then charged by the financial crisis and the administration of structural adjustment programme under the IMF. Indian economy being on the pace of rapidly developing economy has witnessed extensive growth in M&A which is visible across various sectors in the economy. 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 long run during the period 1998-2017 using Buy and Hold Abnormal Returns (BHARs) Approach.

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 as increase domestic market share India.

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 and in the long run using Buy and Hold Abnormal Returns (BHARs) along with improvement in corporate performance post-merger completion in the foreign context. However in the Indian context, not many researches have been carried out on the long run using BHARs. Hence an attempt has been made to carry out an exhaustive study to empirically examine whether the M&A announcements particularly to Pharmaceutical and FMCG sector has created wealth to the shareholders and acquirers by taking substantially large period with different event windows.

2. Review of Literature

Conn, Cosh, Guest and Hughes (2002) examined the post-announcement share returns of 4,000 acquisitions by UK public firms during 1984-1998 analysing acquisitions of domestic and cross-border targets. In acquisitions of cross-border public targets, the ABHARs are zero or negative over the post announcement period. In Cross-border M&A, it has been noticed that the significant negative long run returns are due to the national cultural difference between the bidder and target countries.

Koskinen (2009) evaluates the long-term post-merger performance of Finnish mergers and acquisitions completed during 1995-2006. The study concludes that High Valuation Firms as well as Small Valuation Firms underperformed using the BHAR approach to determine the long run stock performance. The evidence also suggests that the chosen method of payment affects the long-term performance as acquisitions financed using equity only fared considerably worse than those financed with cash only.

Soonswang (2013) focuses on takeover activities on the Stock Exchange of Thailand (SET) and examines their effects on target and bidding firms using ABHAR approach during the period 1991 to 2003. The main findings suggest that a Thai takeover announcement results in substantial and positive

abnormal returns to the target and bidding firms' shareholders. The average total gains approximately being about 43.25% explaining takeovers increase values.

Higgins (2013) examined the wealth created by mergers and acquisitions by acquirers listed on Tokyo Stock Exchange for the period 1990-2004 consisting of 133 sample mergers using event study. The BHAR generated for shareholders of acquiring firms registered insignificant returns depicting low and insignificant wealth to acquirers hence proving that the deal did not prove to be strategically value generating for the acquirer firms.

Malpezzi and Martimo (2014) investigated the long-term post-event stock return performance of companies operating in the IT sector and listed on NASDAQ Stockholm by using 78 mergers and acquisitions deals performed in the 2009 – 2013 using BHAR approach using Swedish General Market Index as well as Swedish Technology Index and a set of control firms for reference portfolio. The study suggests that acquisitions destroy value for the acquiring company's shareholders.

Moerman (2014) studied the short run and long run abnormal returns generated by 169 mergers during the period 1995-2007 in the US using event study analysis. The CAAR of merged firms was significantly negative for acquiring firms during the (-10,+10),(-5,+5) and (0,+5) window. The ABHAR registered significant negative (-7.85%) for 3 year holding period and insignificantly negative for 1 and 2 yr holding period. Hence a conclusion was drawn the most of the mergers under study were value destructing rather than generating shareholders wealth.

Reddy and Natekar (2015) analyses the long run impact using BHAR for the period 2005-2014 having a sample of 10 Indian Pharmaceutical companies, seven companies registered positive significant abnormal returns in the first year, four companies have registered a significant negative variation in the second year. In the third year only three companies continued to provide significant positive returns. Most companies did not improve performance nor increased shareholders wealth significantly post-merger.

Giannopoulos, Holt, Khansalar and Mogoya (2017) examines the long run impact of M&As on the shareholders wealth of 352 bidding US firms during the period 1998-2008 using BHAR. The study provides evidence that the sample acquiring firms registered a negative BHAR of -1.79% during the 1 yr window, -0.54% during the 2 yr window and -5.04% over the 3 years post M&A announcement indicating that the shareholders of acquiring firms experienced significant losses in the long run.

3. Data and Methodology

3.1. 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 long run on shareholders wealth has been analysed on 219 deals using one, two and three year post event window. Buy and Hold Abnormal Returns

are calculated for first, second and third year post announcement only those deals are included in the sample for which stock prices are available for a consecutive 3 years post announcement i.e. the companies having announced its merger or acquisition on or before 30th November 2014.

3.2. Methodology

a. Buy and Hold Abnormal Returns Approach

The BHARs for an acquirer is the excess return earned over the benchmark return for holding the security for three long term event windows i.e. one, two and three years is calculated as follows:

$$BHAR_{(i,a,b)} = \prod_{t=a}^b (R_{it} + 1) - \prod_{t=a}^b (R_{mt} + 1)$$

The long term performance i.e. Average Buy and Hold Abnormal Returns (ABHAR) of a portfolio of stocks then calculated using

$$ABHAR_t = \frac{1}{N} \sum_{t=1}^N BHAR_{i,T}$$

In order to observe if the BHAR and ABHAR returns are statistically different from zero that is to know whether the event buy and hold abnormal returns due to the impact of M&A announcement, the t-test has been used to test the null hypothesis:

H1: The buy and hold abnormal returns are not statistically different from zero

H2: The average buy and hold abnormal returns are not statistically different from zero

b. One-way ANOVA

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. The comparison criteria three event windows of BHARs. The data analysis is performed using SPSS 20. ANOVA tests the non-specific null hypothesis that all four group means are equal as follows

H3 : μ NIFTY Pharma = μ Non NIFTY Pharma = μ NIFTY FMCG = μ Non NIFTY FMCG

Post hoc comparisons (also called post hoc tests, multiple comparison tests, a posteriori comparisons, and follow-up test or comparisons) are tests of the statistical significance of differences between group means calculated after ("post") having done an analysis of variance (ANOVA) that shows an overall difference. The Post hoc comparisons are analysed using Scheffé's test.

4. Empirical Results

4.1 Impact of M&A on Shareholder's Wealth of Indian Pharma and FMCG Sectors

The purpose of analysing BHARs is to measure the shareholders returns precisely, if it has been a creating or destroying shareholders wealth due to M&A announcement.

implying the returns generated in excess of the market returns, specifically industry returns if an investor purchases the shares of the acquiring firm post-merger announcement. Barber and Lyon (1997) strongly argued that BHAR distinctly evaluates an investor's experience, risk preference and the purpose of investment of the investors.

Exhibit 1 to Exhibit 5 depicts the buy and hold long run abnormal returns generated for acquirers during 1998-2015 for three long run horizons. The BHARs have been measured over a three year period ending in relative to the merger announcement. A span of three years is enough time for capturing the value derived from corporate amalgamation (Gompors et. al. 2003). The shareholders of above acquirers can be classified as gainers and losers for each long run horizon on the basis of the announcements that generated or destroyed their wealth during the different holding periods.

Exhibit 1. reveals that during the period 1998-2003, out of 37 M&A announcements, 23 acquirers generated significant positive holding period returns during the one year holding period. The highest magnitude of abnormal returns generated were Vadilal (1999) 70.96% and Wockhardt (2003) 51.48%. During the two year horizon, 26 announcements generated significant wealth for the shareholders of the acquirers where the highest magnitude gainers were Glenmark (2002) at 160.47% and United Spirits (2003) 185.27%. The three year-long holding period, witnessed 28 gainers with highest value generated in 2003 (United Spirits) at 195.09%. The above results are in contrast with studies of Koskinen (2009), Marie, Peter & Manuel (2009), Heinrich and Hess (2014), Martimoand Malpezzi (2014), Reddy and Natekar (2015) which state that the post announcement period buy and hold returns provide negative or near to zero long run abnormal returns.

Exhibit 2. highlights the abnormal returns generated during the period 2004-2006, the one year holding period experienced 32 gainers out of 45 M&A announcements. The highest magnitude was marked by United Spirits (2006) at 102.11%. The second year witnessed 29 M&A announcements generating positive abnormal returns where the highest magnitude returns were 248.78% by Bliss GVS (2006). During the three year event window 27 acquirers generated wealth for the shareholders. The results for this period supports the researches by Martimoand Malpezzi (2014), Reddy and Natekar (2015) which denotes that as the holding period increased the acquirers destroyed wealth by generating significant negative abnormal returns.

Exhibit 3. depicts that during 2007-2009, During the year 2007, the highest magnitude gainer was Mawana generating 223.76%, 128% and 187.33% abnormal returns during one, two and three year holding period respectively. The year 2008 witnessed 13 gainers out of 21 acquirers in the one year holding period; however the magnitude of returns were low. During the two year holding period, Aurobindo witnessed highest magnitude holding period returns i.e. 135.97%. During the three year horizon Aurobindo continued to be the highest magnitude gainer at 135.80% and Marksans as the highest magnitude loser at -175.67%. During the year 2009, out of 10 announcements, six acquirers generated low magnitude

positive abnormal returns to the shareholders in the one year holding period. As the holding period increased to two year horizon, two acquirers destroyed wealth i.e. Aurobindo (-16.78%) and Biocon (-0.84%). The above results are in line with studies of Koskinen (2009), Marie, Peter & Manuel (2009), Heinrich and Hess (2014), Martimoand Malpezzi (2014), Reddy and Natekar (2015) which state that the post announcement period buy and hold returns provide negative or near to zero long run abnormal returns.

The BHARs for the announcements made during 2010-2012 are presented in Exhibit 4. In the year 2010, 15 out of 17 acquirers destroyed wealth during the one year holding period, the highest magnitude of losses generated were -104.27% by Tilaknagar Industries. The two and three year horizon witnessed higher losers than gainers. The highest magnitude loser for both the holding period was Bajaj Hindustan at -145.51% and -235.36% respectively. In the year 2011, the three event windows witnessed higher losers than gainers. The highest magnitude losses generated during each holding period was Ravi Kumar generating negative returns that is -112.53%, -153.16% and -203.10% during one, two and three year holding period respectively. During 2012, the holding period returns improved for the acquirers as the time horizon increased for instance United Spirits improved its returns from 89.85% in the one year holding period to 140.04% to the three year period.

The results for the period 2013-2015 are presented in Exhibit 5. In the year 2013 the holding period returns improved as the holding period increased. The gainer during the one and two year holding period was Granules generating 130.06% and 177.95% returns resp., and during the three year horizon Kwaliti generated highest magnitude wealth for the acquirers i.e. 186.35%. During the period 2014, the magnitude of holding period returns were low. However the shareholders wealth was destroyed as the holding period increased.

4.2. Consolidated ABHARs 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 ABHARs for the investor holding a portfolio of stocks of acquirers for each time horizon 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. During the one year holding period the highest magnitude gainer was witnessed in the year 2007 i.e. Mawana generating 223.72% returns; however the consolidated impact has reduced the holding period return to 1.58%. There by indicating that the averaging has nullified the returns earned by an investor holding a portfolio of 19 stocks during 2007 consisting of Pharma and FMCG stocks. During the two year holding period the highest magnitude returns were generated by Bliss GVS (2006) i.e. 248.78%; however the consolidated impact has reduced the holding period return to 17.53%. Similarly, the three year holding period return witnessed highest magnitude gainer in the year 2002 by Glenmark 219.37%; however the averaging impact has reduced the holding period return to 78.26% having a statistical significance at 1% level.

4.3. Analytical Results of One-way ANOVA on 1 year BHAR

Exhibit 7. Descriptive statistics for 1 year BHAR

Categories	N	MEAN	Std. Dev.	Shapiro Wilk Test	Levene's Test
NIFTY FMCG	64	5.356	21.594	0.664	1.736
Non Index FCMG	50	8.200	23.338	0.290	
NIFTY Pharma	46	-18.346	53.813	0.775	
Non Index Pharma	53	5.409	44.173	0.601	

Note: *** represents significance at 1%.

Exhibit 7 states that the Shapiro Wilk Test for Normality at $\alpha = .001$, given that $p = .664$ for the NIFTY FMCG, $p = .290$ for the Non Index FCMG, $p = .775$ for the NIFTY Pharma and $p = .601$ 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 Sig. (p) value of .069 ($>.05$). Because the Sig. value is more than our alpha of .05 ($p > .05$), we retain the null hypothesis (no difference) for the assumption of homogeneity of variance and conclude that there is no significant difference between the group's variances. That is, the assumption of homogeneity of variance is met. Hence the BHARs can be further analysed using One-Way Anova.

Exhibit 8. Analysis of Variance for 1 year BHAR

Source	Sum of Squares	df	Mean Square	F	p-value
Between	22052.721	3	7350.907	5.337	0.001***
Within	287854.584	209	1377.295		
Total	309907.305	212			

Note: *** represents significance at 1%.

Exhibit 8 displays the results of one-way ANOVA of 1 year BHARs, revealing a statistically significant main effect [$F(3, 228) = 5.337, p < .01$] indicating that there was a significant

difference in the overall BHARs generated among all groups of acquirers.

Exhibit 9. Scheffé's Post Hoc Results for 1 year BHAR

Categories	Mean	Mean Differences ($X_i - X_k$)			
		NIFTY FMCG	Non NIFTY FMCG	NIFTY Pharma	Non NIFTY Pharma
1. NIFTY FMCG	5.356	0.000			
2. Non NIFTY FMCG	8.200	-2.844	0.000		
3. NIFTY Pharma	-18.346	23.702** (0.014)	26.546*** (0.008)	0.000	
4. Non NIFTY Pharma	5.409	-0.052	2.791	-23.755** (0.020)	0.000

Note: *** represents significance at 1%.

Exhibit 9. summarises the post hoc comparisons using Scheffé' test to determine which pairs of the four group means differed. These results indicate that NIFTY Pharma acquirers underperformed with respect to one year holding period returns

as the BHARs differed significantly from NIFTY FMCG (23.702, $p < 0.05$), Non NIFTY FMCG (26.546, $p < 0.01$), and Non NIFTY Pharma (23.755, $p < 0.05$).

4.4. Analytical Results of One-way ANOVA on 2 year BHAR

Exhibit 10. Descriptive statistics for 2 year BHAR

Categories	N	MEAN	Std. Dev.	Shapiro Wilk Test	Levene's Test
NIFTY FMCG	63	13.426	35.056	0.642	1.065
Non Index FCMG	51	26.560	53.376	0.196	
NIFTY PHARMA	47	-15.051	70.542	0.585	
Non Index Pharma	54	8.651	83.092	0.350	

Note: *** represents significance at 1%.

Exhibit 10 states that the Shapiro Wilk Test for Normality at $\alpha = .001$, given that $p = .642$ for the NIFTY FMCG, $p = .196$ for the Non Index FMCG, $p = .585$ for the NIFTY Pharma and $p = .350$ 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 not Sig. (p) value of $.236 (> .05)$. Because the Sig. value is more than our alpha of $.05 (p > .05)$, we retain the null hypothesis (no difference) for the assumption of homogeneity of variance and conclude that there is no significant difference between the group's variances. That is, the assumption of homogeneity of variance is met. Hence the BHARs can be further analysed using One-Way Anova.

Exhibit 11. Analysis of Variance for 2 year BHAR

Source	Sum of Squares	df	Mean Square	F	p-value
Between	44154.053	3	14718.018	3.818	0.011***
Within	813473.416	211	3855.324		
Total	857627.469	214			

Note: *** represents significance at 1%.

Exhibit 11 displays the results of one-way ANOVA of 2 year BHARs, revealing a statistically significant main effect [$F(3, 211) = 3.818, p < .01$] indicating that there was a

significant difference in the overall BHARs generated among all groups of acquirers.

Exhibit 12. Scheffé's Post Hoc Results for 2 year BHAR

Categories	Mean	Mean Differences ($X_i - X_k$)			
		NIFTY FMCG	Non NIFTY FMCG	NIFTY Pharma	Non NIFTY Pharma
1. NIFTY FMCG	13.426	0.000			
2. Non NIFTY FMCG	26.560	-13.134	0.000		
3. NIFTY Pharma	-15.051	28.477	41.612** (0.013)	0.000	
4. Non NIFTY Pharma	8.651	4.774	17.909	-23.703	0.000

Note: ** represents significance at 5%.

Exhibit 12 summarises the post hoc comparisons using Scheffé' test to determine which pairs of the four group means differed. These results indicate that NIFTY Pharma acquirers

underperformed with respect to two year holding period returns as the BHARs differed significantly from Non NIFTY FMCG ($41.612, p < 0.05$).

4.5. Analytical Results of One-way ANOVA on 3 year BHAR

Exhibit 13. Descriptive statistics for 3 year BHAR

Categories	N	MEAN	Std. Dev.	Shapiro Wilk Test	Levene's Test
NIFTY FMCG	63	16.329	36.021	0.804	1.659
Non Index FCMG	51	37.132	65.011	0.281	
NIFTY PHARMA	47	-36.188	99.055	0.431	
Non Index Pharma	54	10.292	84.807	0.211	

Note: *** represents significance at 1%.

Exhibit 13 states that the Shapiro Wilk Test for Normality at $\alpha = .001$, given that $p = .804$ for the NIFTY FMCG, $p = .281$ for the Non Index FMCG, $p = .431$ for the NIFTY Pharma and $p = .211$ 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 not Sig. (p) value of $.078 (> .05)$. Because the Sig. value is more than our alpha of $.05 (p > .05)$, we retain the null hypothesis (no difference) for the assumption of homogeneity of variance and conclude that there is no significant difference between the group's variances. That is, the assumption of homogeneity of variance is met. Hence the BHARs can be further analysed using One-Way Anova.

Exhibit 14. Analysis of Variance for 3 year BHAR

Source	Sum of Squares	Df	Mean Square	F	p-value
Between	139695.663	3	46565.221	8.739	0.000***
Within	1124315.703	211	5328.510		
Total	1264011.366	214			

Exhibit 14 displays the results of one-way ANOVA of 3 year BHARs, revealing a statistically significant main effect [F(3, 211) = 8.739, $p < .01$] indicating that there was a

significant difference in the overall BHARs generated among all groups of acquirers

Exhibit 15. Scheffé's Post Hoc Results for 3 year BHAR

Categories	Mean	Mean Differences ($X_i - X_k$)			
		NIFTY FMCG	Non NIFTY FMCG	NIFTY Pharma	Non NIFTY Pharma
1. NIFTY FMCG	16.329	0.000			
2. Non NIFTY FMCG	37.132	-20.803	0.000		
3. NIFTY Pharma	-36.188	52.517*** (0.004)	73.320*** (0.000)	0.000	
4. Non NIFTY Pharma	10.292	6.036	26.839	-46.481** (0.019)	0.000

Note: ***, ** represents significance at 1% and 5% respectively.

Exhibit 15 summarises the post hoc comparisons using Scheffé' test to determine which pairs of the four group means differed. These results indicate that NIFTY Pharma acquirers underperformed with respect to three year holding period returns as the BHARs differed significantly from NIFTY FMCG (52.517, $p < 0.01$), Non NIFTY FMCG (73.320, $p < 0.01$), and Non NIFTY Pharma (46.481, $p < 0.05$).

5. Conclusion

The major findings of the analysis on the long term buy and hold wealth effects of M&A announcements by Indian Pharma and FMCG acquirers during the period 1998-2017 highlights that the Buy and Hold Abnormal Returns for one year event window observed 54% positive significant abnormal returns, the second year holding period returns observed an increase up to 59% positive abnormal returns. During the third year holding period i.e. the longest event window 60% of the observed BHARs were significantly positive. The results provide mixed evidences about the long term wealth creation for acquirers. The study agrees that buying and holding acquirer stocks generates shareholders wealth in the long run

that is in line with studies for instance Amporn Soongswang (2013). It provides evidences for some announcements throughout the period of our study that, holding the acquirers' stocks, generate significant negative increasing abnormal losses as the holding period increases which are in line with studies [for instance Koskinen (2009), Marie, Peter & Manuel (2009), Heinrich and Hess (2014), Martimo and Malpezzi (2014), Reddy and Natekar (2015)]. The consolidated impact analysed through ABHARs observed that the overall impact of the individual acquirers were nullified due to cross sectional average of the BHARs. It is observed that as the holding period increased the ABHARs for 11 years improved; however having low magnitude of returns and low statistical evidence. The results also indicate that NIFTY Pharma acquirers underperformed as compared to Non NIFTY Pharma, NIFTY FMCG and Non NIFTY FMCG acquirers w.r.t. one year and three year BHARs. NIFTY Pharma BHARs also differed significantly from Non NIFTY FMCG with respect to two year holding period BHARs. Hence NIFTY FMCG was a big gainer in the long run.

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EXHIBIT 1: BHARs of Acquirers of Pharma and FMCG sectors in India for the period 1998-2003

Year	Acquirers	Buy and Hold Abnormal Returns					
		BHAR 1	Sig.	BHAR 1 & 2	Sig.	BHAR 1, 2 & 3	Sig.
1998	Balrampur	-70.04	-18.48***	-52.09	-18.44***	-43.65	-22.35***
	Gilette	-6.49	-9.69***	29.27	12.69***	11.67	6.02***
1999	Marico	-87.05	-21.01***	-85.91	-32.10***	-36.58	-19.40***
	HUL	32.48	26.69***	27.38	28.27***	37.74	39.87***
	Balrampur	11.48	4.23***	46.51	25.86***	88.14	48.69***
	Vadilal	70.96	12.58***	23.18	7.78***	137.16	48.02***
2000	Tata Glob.	-33.01	-11.06***	-68.32	-32.89***	-40.32	-28.33***
2001	HUL	16.15	15.18***	7.53	9.59***	0.9	1.6
	ITC	-6.49	-9.62***	23.98	12.69***	11.67	6.02***
	HUL	14.62	22.46***	7.69	18.66***	-12.43	-24.68***
	ITC	15.33	17.46***	22.4	24.55***	63.58	43.60***
	Morepen	-145.13	-24.04***	-214.51	-31.20***	-195.74	-35.75***
	Britannia	-18.75	-18.67***	-3.22	-5.04***	-4.92	-9.30***
	Novartis	-37.12	-15.70***	-33.48	-27.53***	-29.53	-28.35***
	Abbott Ind.	-17.42	-10.75***	-26.29	-29.16***	-30.17	-33.59***
2002	ITC	11.86	13.18***	48.96	43.16***	60.26	37.55***
	Glaxo Con.	-7.09	-7.49***	-13.31	-16.89***	4.21	6.49***
	United Sp.	33.78	19.75***	117.48	46.26***	204.13	31.08***
	Dr Reddys	-5.65	-6.38***	-41.66	-49.76***	-85.25	-35.92***
	Glenmark	14.05	10.94***	160.47	33.23***	219.37	31.60***
	Sunpharma	0.79	1.45	41.99	29.96***	73.17	34.86***
	Piramal	37.89	21.33***	103.67	30.10***	119.87	33.25***
	Cadila	6.63	8.08***	65.14	36.51***	130.3	41.55***
	Orchid	64.9	14.66***	69.49	23.75***	106.65	36.72***
	Pfizer	-23.8	-14.35***	-44.7	-25.62***	2.28	1.65*
	Wockhardt	-17.08	-24.36***	3.14	2.14**	25.97	16.98***
2003	Marico	11.78	19.48***	83.4	36.58***	78.37	30.37***
	HUL	-20.47	-25.51***	-44.35	-31.27***	-42.92	-29.64***
	ITC	31.02	18.15***	39.44	34.20***	41.6	44.07***
2003	United Sp.	7.89	4.33***	185.27	31.65***	195.09	27.33***
	Dabur	33.43	17.95***	62.99	34.25***	99.71	47.01***
	Godrej Con.	50.53	27.58***	80.55	29.35***	101.3	38.48***
	Piramal	43.71	23.43***	51.22	24.56***	29.33	19.59***
	Cadila	48.65	19.82***	38.24	26.34***	39.38	38.86***
	Alembic	33.15	8.40***	99.59	21.97***	108.85	29.40***
	Suven	41.69	11.36***	76.6	29.40***	43.17	22.96***
	Wockhardt	51.48	19.28***	72.12	33.04***	64.19	33.66***

Note: *, **, *** represents significance at 10%, 5% and 1% level respectively.

EXHIBIT 2: BHARs of Acquirers of Pharma and FMCG sectors in India for the period 2004-2006

Year	Acquirers	Buy and Hold Abnormal Returns					
		BHAR 1	Sig.	BHAR 1 & 2	Sig.	BHAR 1, 2 & 3	Sig.
2004	ITC	-2.97	-6.95***	8.32	20.08***	3.94	10.91***
	Radico	96.14	19.63***	119.69	26.39***	130.72	37.07***
	Dr Reddys	-29.64	-25.74***	19.69	16.22***	8.01	5.59***
	Aurobindo	-6.49	-9.69***	29.27	12.69***	11.67	6.02***
2004	Glenmark	-11.52	-11.14***	56.49	24.96***	96.52	27.80***

	Sunpharma	40.4	26.28***	58.54	35.99***	81.36	50.22***
	Piramal	7.48	12.43***	-21.29	-13.56***	7.6	6.88***
	Glaxo	6.56	10.54***	39.79	27.80***	20.93	18.25***
	Indoco Re.	12.33	22.92***	8.13	13.09***	-4.07	-7.14***
	Pfizer	35.83	16.16***	20.75	13.15***	13.87	11.71***
	Wockhardt	12.31	11.10***	-10.42	-8.66***	-10.25	-8.60***
	Jubilant	20.7	11.63***	1.83	1.2	58.3	34.83***
2005	Marico	16.38	13.80***	19.61	15.15***	27.87	29.62***
	Tata Glob.	-39.36	-16.75***	-29.3	-19.90***	-42.09	-40.96***
	HUL	8.42	15.11***	-9.99	-20.56***	1.59	2.92***
	ITC	7.4	18.23***	1.95	6.30***	15.23	38.92***
	United Sp.	39.52	20.48***	97.6	38.15***	145.11	34.40***
	Dabur	41.43	36.90***	66.14	39.75***	51.15	32.48***
	Godrej Con.	2.52	3.38***	-35.74	-44.06***	-30.55	-28.19***
	Bajaj Hind.	74.92	21.07***	8.51	3.24***	12.01	5.41***
	Balrampur	3.41	1.33	-20	-7.44***	-55.58	-29.54***
	EID-Parry	35.92	17.05***	-11.59	-5.69***	1.97	1.14
	Beeyu	-39.49	-14.26***	-65.54	-36.63***	-102.17	-56.76***
	Radico	-14.18	-12.77***	10.61	11.20***	-89.54	-46.79***
	Aurobindo	10.9	12.76***	-62.9	-40.44***	-94.22	-26.55***
	Glenmark	-5.76	-5.33***	94.04	26.81***	100.41	25.22***
	Sunpharma	23.59	30.92***	45.98	44.50***	65.77	52.10***
	Piramal	-23.94	-10.97***	-1.32	-1.08	15.32	11.24***
	Marksans	-62.93	-23.30***	-178.98	-40.64***	-27.03	-5.55***
	Unichem L.	8.61	5.67***	-6.7	-6.82***	-77.2	-44.58***
	Strides Sh.	5.09	3.83***	12.01	14.03***	-47.88	-26.64***
	IPCA	-13.39	-11.86***	10.29	5.21***	18.8	9.17***
Jubilant	-17.57	-7.81***	52.56	21.19***	-8.51	-3.83***	
Torrent	40.76	15.71***	53.36	37.67***	7.76	5.57***	
2006	Marico	11.99	9.15***	13.6	18.04***	37.59	46.33***
	Tata Glob.	5.16	5.73***	11.25	13.43***	7.03	8.69***
	United Sp.	102.11	26.06***	86	27.53***	65.99	30.44***
	Godrej Con.	-10.45	-13.05***	-12.24	-8.48***	-1.41	-1.29
	Heritage	81.18	14.60***	52.83	14.16***	-21.73	-6.36***
	Dr Reddys	4.06	5.74***	-22.31	-23.28***	-20.19	-17.63***
	Aurobindo	14.62	15.97***	-90.43	-27.25***	-4.11	-1.14***
	Piramal	17.91	17.00***	36.32	24.97***	65.95	46.01***
	Bliss GVS	12.73	7.13***	248.78	22.44***	232.31	25.99***
	Suven	56.19	16.44***	54.53	17.53***	-10.31	-4.30***
	Indoco Rem.	-3.69	-3.80***	-17.07	-21.88**	-36.04	-22.47***
	Strides Sh.	-0.1	-0.12	-40.84	-13.10***	-17.1	-6.14***
	Wockhardt	0.13	0.12	-92.49	-30.39***	-75.82	-20.71***

Note: *, **, *** represents significance at 10%, 5% and 1% level respectively.

EXHIBIT 3: BHARs of Acquirers of Pharma and FMCG sectors in India for the period 2007-2009

Year	Acquirers	Buy and Hold Abnormal Returns						
		BHAR 1	Sig.	BHAR 1 & 2	Sig.	BHAR 1, 2 & 3	Sig.	
2007	Marico	-14.64	-24.91***	8.71	8.88***	18.5	15.56***	
	Tata Glob.	-1.19	-1.04	-9.88	-8.75***	1.22	1.51	
	ITC	8.98	11.71***	11.62	20.59***	15.36	33.38***	
	United Sp.	43.54	23.43***	7.71	3.95***	41.97	29.18***	
	Colgate	11	11.31***	27.14	18.92***	27.27	22.33***	
	Godrej Con.	-10.4	-10.21***	48.51	28.05***	69.43	29.11***	
	Mawana	223.72	16.70***	128	11.38***	187.33	22.57***	
	Shree Renuka	82.3	18.80***	109.98	31.67***	78.07	22.43***	
	Lupin	15.39	10.38***	62.71	24.51***	84.6	29.47***	
	Glenmark	47.62	20.29***	-3.46	-1.37	-17.76	-8.39***	
2007	Cadila	-39.95	-20.64***	1.78	1.1	65.85	23.86***	
	Alembic	13.09	4.69***	-30.74	-11.28***	-37.34	-18.79***	
	Marksans	-71.78	-16.55***	-130.49	-32.62***	-196.49	-47.28***	
	Unichem L.	-34.11	-18.08***	-25.2	-10.47***	-2.06	-1.17	
	Strides Sh.	-84.24	-22.24***	-66.18	-22.87***	21.55	8.04***	
	IPCA	-37.13	-22.24***	9.68	7.01***	42.28	17.32***	
	Wockhardt	-44.15	-21.58***	-125.46	-26.87***	-132.86	-37.76***	
	Jubilant	-5.53	-3.34***	17.92	7.69***	117.07	33.51***	
2008	Natco	-72.48	-22.30***	-31.01	-11.76***	31.5	12.67***	
	ITC	5.07	12.96***	8.68	27.04***	18.88	41.15***	
	United Sp.	14.28	8.51***	7.56	4.79***	-63.49	-34.92***	
	Colgate	24.17	18.73***	29.48	22.55***	29.96	29.43***	
	Dabur	39.05	29.70***	33.88	26.78***	25.9	29.21***	
	Sakthi	-60.35	-14.90***	6.62	1.75*	-52.33	-19.66***	
	DCM	-68.13	-17.86***	-1.74	-0.66	-41.6	-22.08***	
	Shree Renuka	23.33	5.82***	4.58	1.33	-0.98	-0.41	
	Empee	-5.95	-1.71*	23.49	7.84***	-27.55	-12.77***	
	Khoday	-142.42	-20.21***	-102.83	-22.13***	-132.33	-42.45***	
	Tilaknagar	-64.22	-23.85***	54.95	15.64***	134.34	23.44***	
	Lupin	49.28	27.18***	72.1	33.60***	91.51	48.36***	
	Aurobindo	10.89	4.34***	135.97	21.77***	135.8	26.25***	
	Dr Reddys	48.9	20.41***	67.24	27.18***	67.67	33.06***	
	Glenmark	-44.53	-10.65***	-67.02	-27.70***	-65.21	-37.92***	
	Sunpharma	14.25	13.73***	4	4.92***	28.2	41.61***	
	Piramal	12.5	7.86***	-2.03	-1.77*	-12.26	-10.83***	
	Cadila	57.16	24.81***	91.89	34.43***	92.33	37.05***	
	2009	Alembic	-68.53	-25.84***	-71.95	-50.87***	-61.57	-57.75***
		Marksans	-78.87	-24.29***	-133.42	-46.04***	-175.67	-48.07***
Sequent		76.93	28.06***	128.15	26.98***	62.98	19.52***	
Jubilant		43.08	11.60***	118.84	24.43***	59.18	14.31***	
Tata Glob.		24.15	19.43***	13.69	16.57***	18.2	15.21***	
United Sp.		-4.87	-5.09***	-67.42	-27.21***	5.9	1.94*	
Britannia		-23.37	-17.11***	-30.88	-36.08***	-15.81	-23.71***	
Shree Renuka		-33.33	-9.48***	-80.9	-33.54***	-154.35	-40.36***	
EID-Parry		3.1	4.06***	9.97	12.43***	-18.85	-14.10***	
NTC		-67.4	-19.90***	-130.29	-24.87***	-169.34	-34.59***	

Lupin	24.79	23.28***	44.2	48.60***	46.28	50.29***
Aurobindo	3.58	4.09***	-16.78	-18.30***	-61.18	-29.15***
Biocon	0.4	0.59	-0.84	-1.49	-38.49	-26.17***
Aarti Ind.	66.81	20.81***	79.5	32.47***	45.93	24.94***

Note: *, **, *** represents significance at 10%, 5% and 1% level respectively.

EXHIBIT 4: BHARs of Acquirers of Pharma and FMCG sectors in India for the period 2010-2012

Year	Acquirers	Buy and Hold Abnormal Returns					
		BHAR 1	Sig.	BHAR 1 & 2	Sig.	BHAR 1, 2 & 3	Sig.
2010	Marico	-5.86	-9.87***	4.05	8.17***	9.6	24.90***
	United Sp.	-39.67	-15.67***	63.75	13.97***	57.44	14.90***
	Dabur	-8.2	-11.82***	-15.82	-18.99***	-1.1	-1.61
	Venky's	-50.08	-19.49***	-74.74	-31.40***	-83.52	-39.77***
	Godrej Con.	-0.55	-0.84	19.04	40.12***	22.74	30.20***
	United Brew.	-7.21	-5.51***	7.63	7.82***	30.09	28.80***
	Shree Renuka	-8.71	-4.43***	-87.9	-29.41***	-149.89	-40.01***
	Bajaj Hind.	-62.36	-19.05***	-145.51	-28.26***	-235.36	-43.81***
	Balrampur	-40.51	-19.97***	-58.12	-20.99***	-130.83	-47.55**
	ADF Foods	-25.03	-18.45***	-66.41	-32.83***	-93.62	-41.54***
	Tilaknagar	-104.27	-22.36***	-58.87	-21.98***	-74.15	-38.14***
	Globus Sp.	-42.28	-21.23***	-67.96	-28.52***	-109.56	-38.80***
	Cipla	-11.69	-25.58***	-8.95	-16.51***	-15.66	-32.97***
	Dr Reddys	-1.65	-2.92***	-12.1	-23.87***	-3.55	-9.00***
	Piramal	2.03	1.22	-2.31	-1.51	2.31	2.19**
	Orchid	58.68	20.15***	-14.59	-6.24***	-118.48	-30.40***
Strides Sh.	-2.72	-2.26**	43.6	30.81***	70.56	24.88***	
2011	Marico	14.57	18.94***	7.44	14.60***	-3.44	-6.83***
	United Sp.	-45.58	-16.35***	58.03	14.41***	68.72	17.90***
	Dabur	-12.39	-12.20***	-11.26	-14.05***	0.34	0.56
	Shree Renuka	-89.49	-25.50***	-113.78	-26.77***	-157.29	-33.80***
	EID-Parry	-41.85	-20.38***	-117.02	-35.36***	-58.5	-21.23***
	Jyothy Labs	-21.9	-8.92***	9.19	4.84***	10.89	7.11***
	Sita Shree	-10.85	-5.46***	-47.9	-24.18***	-9.23	-3.77***
	Bajaj Corp	8.3	5.79***	25.94	12.56***	18.62	12.84***
	Ravi Kumar	-112.53	-27.69***	-153.16	-37.80***	-203.1	-41.52***
	Tilaknagar	21.62	7.10***	18.2	9.32***	-8.52	-5.58***
	Lupin	6.05	8.68***	21.58	26.77***	33.89	39.25***
	Piramal	-5.46	-3.93***	3.5	3.89***	-18.79	-24.85***
	Cadila	-23.89	-16.13***	-46.94	-40.03***	-33.32	-22.69***
	FDC	-27.44	-27.98***	-58.77	-50.12***	-26.6	-28.07***
	Strides Sh.	-2.72	-2.26**	43.6	30.81***	70.56	24.88***
	IPCA	26.64	15.24***	53.51	28.59***	29.95	17.32***
Sanofi	-15.23	-14.13***	-25.6	-24.69***	-39.28	-41.47***	
2012	Marico	-3.09	-7.72***	-11.86	-15.91***	10.45	12.76***
	Tata Glob.	-12.88	-8.55***	-7.08	-19.61***	-39.66	-45.70***
	United Sp.	89.95	15.98***	114.02	27.26***	140.04	44.62***
	Godrej Con.	25.65	28.88***	19.04	26.84***	40.05	65.48***
	United Brew	22.2	11.37***	36.2	29.12	28.72	30.48***
	Dhampur	-30.45	-9.98***	3.99	1.22	-50.59	-21.22***

EID-Parry	-56.4	-19.14***	-27.8	-13.42***	-36.98	-24.67***
Jyothy Labs	-48.23	-21.50***	-0.18	-0.09	9.17	5.87***
Tilaknagar	-15.22	-7.48***	-38.43	-26.10***	-135.33	-50.99***
Cipla	-19.84	-19.36***	-13.83	-13.66***	-13.75	-19.36***
Dr Reddys	4.37	9.95***	-2.78	-5.79***	8	17.98***
Sunpharma	31.73	20.73***	31.51	30.49***	13.55	18.10***
Piramal	-4.9	-5.02***	-11.44	-10.79***	0.12	0.14
Bliss GVS	15.9	6.43***	46.8	30.53***	140.58	59.33***
Indoco	22.94	13.24***	134.96	24.08***	161.12	24.84***
Strides Sh.	9.25	5.72***	-26.65	-8.88***	6.8	3.20***

Note: *, **, *** represents significance at 10%, 5% and 1% level respectively.

EXHIBIT 5 : BHARs of Acquirers of Pharma and FMCG sectors in India for the period 2013-2015

Year	Acquirers	Buy and Hold Abnormal Returns					
		BHAR 1	Sig.	BHAR 1 & 2	Sig.	BHAR 1, 2 & 3	Sig.
2013	Tata Glob.	-9.93	-14.26***	-36.64	-36.59***	-41.35	-42.95***
	HUL	6.38	9.04***	37.53	36.48***	38.06	36.89***
	Dabur	15.99	18.79***	34.23	26.50***	39.37	37.78***
	Godrej Con.	5.58	8.86***	8.59	14.88***	46.64	40.13***
	Kwality	52.31	17.08***	135.88	38.43***	186.35	37.46***
	Bajaj Corp.	-13.13	-13.88***	53.74	20.44***	24.14	11.52***
	Tilaknagar	-15.22	-7.48***	-38.43	-26.10***	-135.33	-50.99**
	Cipla	5.24	5.19***	7.79	11.55***	0.2	0.31
	Aurobindo	127.39	19.91***	175.87	37.13***	186.45	46.63***
	Piramal	-9.94	-8.43***	-1.58	-2.19***	79.96	35.68***
	Granules	130.06	19.36***	177.95	36.60***	177.35	39.70***
	Pfizer	-21.13	-17.83***	14.2	11.72***	-6.08	-6.46***
	Torrent	44.89	26.90***	68.79	32.24***	68.81	34.73***
	2014	Tata Glob.	-8.14	-7.59***	-20.12	-18.12***	-16.86
Godrej Ind.		-9.35	-10.72***	-24.38	-24.88***	-20.23	-21.95***
ITC		-14.67	-21.48***	-8.02	-14.75***	-1.57	-3.87***
Godrej Con.		22.24	21.38***	46.26	29.27***	56.56	33.34***
United Brew		9.76	5.19***	-12.94	-10.90***	-30.72	-30.00***
Emami		29.63	10.94***	38.84	27.04***	26.26	25.71***
Picaddily		17.65	17.99***	19.03	11.00***	52.76	30.96***
Empee		41.24	13.70***	81.36	16.69***	46.71	13.89***
Tilaknagar		-91.97	-19.67***	-88.38	-27.08***	-123.26	-43.45***
Cipla		-11.52	-11.14***	56.49	24.96***	96.52	27.80***
Lupin		11.92	23.54***	26.63	27.28***	26.07	36.41***
Dr Reddys		-11.09	-12.10***	4.09	6.51***	-8.78	-16.77***
Aurobindo		34.93	25.60***	46.19	30.41***	63.19	48.34***
Sunpharma		12.33	22.92***	8.13	13.09***	-4.07	-7.14***
Sequent	46.95	40.12***	85.7	26.19***	91.74	39.68***	
Strides Sh.	43.96	19.80***	41.21	26.22***	43.65	33.96***	
IPCA	-14.02	-11.28***	-21.41	-17.42***	-12.41	-14.26***	
Jubilant	64.38	19.64***	47.38	17.81***	49.04	26.63***	
2015	Godrej Con.	32.85	25.83***	48.65	37.27***	-23.79	-20.71***
	Tilaknagar	-15.3	-7.53***	-33.38	-22.66***	-125.84	-46.42***
	Piramal	7.3	7.12***	81.21	24.87***	144.4	30.77***

Note: *, **, *** represents significance at 10%, 5% and 1% level respectively.

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

Year	N	Average Buy and Hold Abnormal Returns					
		ABHAR 1	Sig.	ABHAR 1 & 2	Sig.	ABHAR 1, 2 & 3	Sig.
1998	2	-38.26	-1.20	-11.41	-0.28	-15.99	-0.57
1999	3	6.96	0.20	29.99	0.09	37.10	1.52
2000	3	-7.78	-0.54	-10.50	-0.35	15.84	-0.58
2001	7	-31.69	-1.54	-37.69	-1.24	-24.08	-0.76
2002	11	10.57	1.33	46.42	2.32**	78.26	2.86***
2003	11	30.26	4.51***	67.73	4.11***	68.91	3.81***
2004	12	15.09	1.63	27.56	2.52**	34.88	2.65***
2005	22	4.64	0.69	2.30	0.18	-5.08	-0.38
2006	13	22.44	2.31**	17.53	0.72	17.08	0.81
2007	19	1.58	0.09	0.59	0.04	21.86	1.13
2008	21	-5.43	-0.43	19.44	1.24	5.41	0.30
2009	10	-0.61	-0.05	-17.97	-0.91	23.86	-1.43
2010	17	-20.59	-2.43**	-27.95	-2.19**	-48.41	-2.38**
2011	17	-19.53	-2.17**	-19.61	-1.29	-19.12	-1.12
2012	16	1.93	0.22	15.40	1.26	17.64	0.92
2013	13	24.49	1.72*	49.07	2.43**	51.12	1.98**
2014	18	9.67	1.17	18.11	1.78*	18.58	1.50
2015	3	8.28	0.59	32.16	0.94	-1.74	-0.02

Note: *, **, *** represents significance at 10%, 5% and 1% level respectively