

Has Higher Institutional Participation Led to Lower Insider Ownership and Superior Post-Merger Performance in India?

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ABSTRACT

We analyze the effects insider and institutional ownership has on post-merger performance of Indian acquiring firms during the 2001-2012 period. When the sample is bifurcated into acquisitions announced before and after the beginning of 2006, cumulative abnormal returns are higher in the pre-2006 period, but buy and hold abnormal returns are higher in the post 2005 period. Firms with lower ownership concentration of insiders are characterized by superior post-merger performance and institutional investors invest more in such firms. However, institutional or insider holdings are not systematically correlated with superior post-merger performance. Insiders affect post-merger quarterly stock returns negatively 1, 2, and 3 years after announcements in both sub-sample periods whereas the corresponding effect of institutional investors is uniformly positive for the post 2005 period but positive only 1 year after the mergers and negative 2 and 3 years after mergers for the pre-2006 period.

JEL Classifications: F30, G30, G32, G34, G38

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I. INTRODUCTION

In this paper we analyze the relative impact of holdings by insiders¹ and institutional investors on the performance of acquiring firms in the context of mergers and acquisitions in India. We explore and measure the extent to which announcement-period short term abnormal returns and long term buy and hold abnormal returns to acquiring firms are explained by these holdings. We have chosen India because the government of India has encouraged small investors and institutional investors² – both foreign and domestic – to participate more actively in Indian capital markets and the goals of such policy directives have been to enhance the participation by diverse groups of shareholders in corporate decision making.³ Whether the intended reduction in the dominance of insiders and the enhanced participation by institutional investors by way of long term investments in Indian companies have led to better performance on the part of Indian firms is an interesting empirical issue.

Insiders of corporations have been an integral and dominant part of Indian corporate culture promoted by the Companies Act of 1956. Despite efforts by the Securities Exchange Board of India (SEBI) in recent years to reduce the proportional holdings of insiders and thereby increase the ownership proportions of minority shareholders and financial institutions,⁴ ownership structure of Indian corporations continues to be dominated by holdings of insiders and persons acting in concert with them (Manos et al., 2007; Kumar, 2013). Foreign institutional investors' (FII) investment into India has risen appreciably since 1991, more so after 2005 when foreign direct investment (FDI) rose sharply and insiders of Indian corporations appeared to have committed to the idea of enhanced participation by professional managers in their firms.

The Indian government is serious about lowering the proportional holdings of insiders and increasing the holdings of small and institutional investors in Indian corporations.⁵ Even though substantive measures have been implemented to encourage non-insider shareholder activism in Indian capital markets (Varottil, 2012), insiders allegedly continue to dominate Indian corporate ownership with seemingly little mitigating influence originating from either institutional investors or other minority shareholders.

However, institutional investors, both domestic and foreign, have on average held higher proportions of shares after 1991 (Reserve Bank of India Statistics 2018) but their influence on the Indian corporate milieu in terms of size of corporate boards, investment decisions, M&A decisions and decisions related to accounting policies and disclosures and executive compensation have been at best limited. As per financial theory (Li et al., 2006; Admati et al., 1994; Maug, 1998; and Noe, 2002), institutional investors can be relied upon to bring about changes that can benefit minority shareholders and mitigate problems which both concentrated ownership by large shareholders and diverse ownership bring forth. Whether FIIs have a long term strategy with regard to their investment strategies in India is an unexplored issue even though there is evidence to indicate that India has become of late a tier one destination for foreign investors.⁷ Nevertheless, FIIs have not only been welcomed by small shareholders at large in India but their portfolio strategies have also been closely followed by small shareholders (Prasanna, 2008). Also, foreign institutional investors and foreign independent individual investors have preferred to invest in Indian firms with lower levels of insider holdings (Prasanna, 2008).

The specific objectives of this study are to analyze whether (a) the increase in institutional ownership led to a corresponding decline in the ownership of insiders for the acquiring firms, (b) the enhanced ownership by institutional investors had any systematic effect on both the announcement-period and the long run buy and hold abnormal returns of acquiring firms, (c) institutional ownership relative to insiders had any significant effect on the post-merger operating performance of acquiring firms, and (d) the post-merger performance of acquiring firms (as measured by returns) for mergers announced prior to 2006 differs markedly from the post-merger performance of mergers announced after January 1, 2006.⁸

We find that institutional ownership did increase after 2005 along with insider holdings albeit at a higher pace. This finding does not corroborate the hypothesis that insiders reduced their holdings in Indian firms as institutional investors increased theirs. While both insider holdings and institutional investor' holdings in the quarter prior to the acquisition affect the long term buy and hold abnormal returns negatively, institutional investors affect the long term returns positively after 2005. Evidently, institutional investors played a positive role after 2005.

The remainder of the paper is organized as follows. Section II discusses briefly the evidence with regard to ownership structure and firm performance, first globally and then specifically for India. Section III develops the hypotheses for the paper. Data and methodology are described in Section IV. Empirical results are reported in Section V and Section VI concludes.

II. OWNERSHIP STRUCTURE AND FIRM PERFORMANCE: THE EVIDENCE

The research into the effects institutional investors have on corporate governance and performance began with Brickley et al. (1988) and continued with McConnell and Servaes (1990), Nesbitt (1994), Smith (1996) and Del Guercio and Hawkins (1999) who demonstrated that monitoring by institutional investors can produce more focused, better performance by managers in corporations marked by possible agency conflicts. On the other hand, Agrawal and Knoeber (1996), Karpoff et al. (1996), Duggal and Millar (1999) and Faccio and Lasfer (2000) could not corroborate this positive relationship in their respective studies. Following the classification introduced by Brickley et al. (1988), Cornett et al. (2007) have shown that institutional investors who maintain an arm's length rather than a cozy relationship with the managers are able to effectuate better performance on the part of firms. Chen et al. (2007) have also shown that concentrated holdings of institutional investors with a long term horizon can lead to better performance in the context of mergers. McCahery et al. (2016) report that long term institutional investors less concerned with stock liquidity intervene more actively to push for superior performance.

Empirical evidence on the relation between ownership structure and post-acquisition performance of Indian firms is scarce. Several studies that examine the relation between stock holdings of institutions and performance of Indian firms over time in general do not focus on post-merger performance (Sarkar and Sarkar, 1999 and 2000; Khanna and Palepu 2000; and Kali and Sarkar, 2005). Rajput (2015) has shown that foreign institutional holdings have a positive impact on return on equity (ROE) for firms in India. Selarka (2005) examines the relation between insiders' holdings and

performance of Indian firms and reports an inverted U-shaped relationship between insider's shareholdings and market to book value ratio. Ganguli and Agarwal (2009) analyzed market-based data for one year to explore the relationship between ownership concentration and performance for mid-size, listed Indian companies and found that higher ownership concentration had a positive effect on performance and vice versa. Banerjee et al. (2014) show that increased participation by foreign institutions in the context of mergers and acquisitions counteracts the effects of concentration of ownership by insiders. Bhaumik and Selarka (2012) show that ownership concentration of foreign investors leads to enhanced post-merger accounting profitability during the 2001- 2004 period.

In related research, Sarkar and Sarkar (2000) argue that Indian market is inefficient in restraining owner expropriation of small shareholder's value. Insiders are able to transfer wealth to themselves without effective resistance from minority shareholders. Also, domestic institutional investors who are supposed to safeguard the interests of small investors by actively monitoring the firm managers are in fact relatively inactive in India and tend to vote with the owners and/or managers (Khanna and Palepu, 2000). Since Indian insiders are generally known to be more concerned about power and control than about creating value (Manos et al., 2007), it is not clear whether the decision by insiders in India to welcome the role of professional managers in their organizations after 2005 to better position themselves against unprecedented competition from multinational corporations and foreign institutional investors did in fact lead to added value for predominantly insider-controlled Indian corporations.

III. DEVELOPMENT OF THE HYPOTHESES

That ownership structure and managerial control can influence firm performance has been amply documented in the financial literature (Jensen and Meckling, 1976; Grossman and Hart, 1986; Fama and Jensen, 1983; and Jensen, 1993). The theoretical foundations pertaining to ownership structure and firm performance stand on two pillars: dominant shareholders and minority shareholders. While the powers of dominant shareholders and their will and ability to monitor managers can lead to both better firm performance (Shleifer and Vishny, 1986 and 1997; Kahn and Winton, 1998; Maug, 1998; Chen et al., 2007) and to the free-rider problem (Admati et al., 1994; Claessens et al., 2000), dominant shareholders can also expropriate minority shareholders and as a result firm performance may indeed be worse in the presence of dominant shareholders (Morck et al., 1988; Shleifer and Vishny, 1997).

Concentrated ownership by way of family owners or a few large shareholders is a common characteristic of capital markets in developing or emerging economies (Claessens et al., 2000). The monitoring function of dominant shareholders and its effect on firm performance, which has been explored for developed economies, has not been widely studied empirically for developing economies. In the case of India, where expropriation of small shareholders by the dominant insiders is an issue of major concern (Bertrand et al., 2002), institutional investors are only beginning to play a significant role in mitigating the problems arising out of the dominance of insiders over the "silent" minority shareholders (Sahu et al., 2014).

One significant phenomenon observed during the decade following the year 2000 was an increase in the number of mergers and acquisitions undertaken in India (see Table

1 later). Indian firms pursued mergers more vigorously in order to consolidate their positions in light of the new era of competition that unraveled once the economic reforms were enforced and foreigners were permitted to acquire Indian companies.⁹ With mergers serving as the major event in which insiders and their associates acted in concert with other shareholders, it is natural to ask whether insiders' holdings were a significant determinant of post-merger success and also whether a relatively lower ownership concentration of insiders in acquiring firms delivered on average superior post-merger performance.

Financial theory posits that concentrated ownership can have both positive (efficient monitoring hypothesis of Grossman and Hart, 1986) and negative (expropriation-of-minority-shareholders hypothesis of La Porta et al., 1999; Claessens et al., 2000) influence on performance. The positive effect of concentrated ownership is especially observed in developing economies (Claessens and Djankov, 1999) where large block shareholders take it upon themselves to monitor the managers. Jensen and Meckling (1976) propose the convergence-of-interest hypothesis to support the positive effects of managerial ownership. Managers owning shares in firms will act in the best interests of shareholders, because with increasing ownership of the firms they manage, managers' interests will coincide with those of other shareholders. On the other hand, super-voting rights and the divergence between control rights and cash flow rights in developed economies permit controlling shareholders to expropriate value from minority shareholders to themselves (Denis and McConnell, 2003). Fama and Jensen (1983) provide the alternative argument by proposing that when managers own large stakes in firms, they are entrenched in the firm and are less subject to external monitoring and control mechanisms and are consequently less likely to maximize the welfare of all shareholders. Therefore, the effect of insiders' ownership on firm's value can express non-linear effects – relatively small managerial ownership aligns interests of shareholders and managers, while large shareholdings by managers eventually lead to the dissipation of gains which surface when managers begin to hold ownership stakes in the firms they manage (Stulz, 1988). Extending the argument to insider holdings in the Indian context where insiders are also the managing agents of the firm we can hypothesize that higher concentration of insider ownership may lead to inferior firm performance. Given the ambiguity of the effect of insider ownership on post-merger performance, we propose the following hypotheses:

H1 Hypothesis One: *During the period 2001 to 2012, Indian firms with lower concentration of insider ownership performed, on average, better after the completion of an acquisition than Indian firms with higher proportion of insider ownership.*

H1A Alternative Hypothesis One: *During the period 2001 to 2012, Indian firms with higher concentration of insider ownership performed, on average, better after the completion of an acquisition than Indian firms with lower proportion of insider ownership.*

These hypotheses test our conjecture that insider concentration has an effect on post-merger performance – either negative (H1) or positive (H1A). However, it is also plausible that both H1 and its alternative H1A will be rejected by the study, if there is no systematic relation between insiders' ownership and post-acquisition performance.

Family-owned businesses and manager-controlled firms have coexisted in India ever since India gained independence and permitted foreign firms to operate in select Indian industries alongside Indian family-owned businesses (Balasubramanian and Anand, 2013). Foreign firms have operated under strict regulatory supervision in India and the Indian government continually fine-tuned its licensing policies to keep a check on the holding status of foreign companies in India. Often, foreign firms were barred from holding majority interest in Indian companies. This allowed Indian firms to maintain status quo without facing real threats of competition from foreign firms.

However the corporate culture in India underwent a sea change beginning with 2005/06, more than a decade after the Indian government initiated and implemented drastic economic reforms in the 1990s, allowing foreign firms to compete with Indian firms on a more equal footing. The opening up of foreigners' access to Indian equity markets and an overall increase in the level of foreign interest in Indian firms led to an unprecedented increase in the levels of inflows of FDIs into India. Concurrently, family-owned businesses began to incorporate professionalism into the managerial cadre, allowed managers more operating control, and institutional investors, especially foreign institutional investors raised their stakes in Indian firms.¹⁰

In fact, as has been reported by Prasanna (2008), foreign institutional investors prefer to invest in firms with lower insider concentration. That domestic institutional investors take their cues from foreign institutional investors has not been documented for the Indian context. As it is, domestic institutional investors tend to vote with the insiders and are not very active in monitoring the actions of the insiders. We explore in our study whether institutional investors as a whole increased their stakes in Indian acquiring firms as insiders reduced, if at all, theirs and whether this increase is systematically linked to superior post-merger performance by acquiring firms. Thus, the second hypothesis for the paper is predicated on the assumption that enhanced institutional ownership in Indian firms led to superior post-merger performance.

H2 Hypothesis Two: *Firms with higher proportion of institutional ownership posted superior post-merger performance.*

Having considered the effect of ownership patterns on post-merger performance via hypotheses one and two, we now focus on the change in post-merger performance after 2005 which may have occurred on account of competition and the response of insiders to such nascent competition in the Indian corporate environment. The third hypothesis is based on the assumptions that the following three factors may have led to superior post-merger performance after 2005: (a) the marked increase in FDI flows into India during the 2005-06 period, (b) the resultant increase in foreign institutional ownership and (c) the willingness on the part of insiders to incorporate inputs from professional managers into decision making. The first two factors are presumably the primary influences and the third only secondary in terms of the combined impact the three factors might have had on the post-merger performance of firms. Thus, firms with lower concentration of insider ownership (and presumably higher proportion of institutional ownership) were more capable to adjust to the new economic landscape after 2005 since they began to recognize the value of professional managers and consequently post-merger performance improved on account of this reliance. We formulate the following hypothesis:

H3 Hypothesis Three: *Firms performed better after acquisitions during the post 2005 era than after the ones during the 2001-2005 era.*

IV. DATA AND SAMPLE

We compile a sample of completed Indian mergers and acquisitions announced between July 2001 and December 2012 from the mergers and acquisitions SDC database in Thomson One. The sample is then screened to satisfy the following criteria: both acquirers and targets are publicly listed Indian firms,¹¹ the acquisition status is stated as “completed” according to SDC, and the percentage of shares acquired, stock price, financial data and ownership data for both the target and acquirer firms should be available either from SDC or from the Prowess database of Centre for Monitoring the Indian Economy (CMIE). The final sample comprises 167 acquisitions undertaken by 101 acquiring firms. Definitions and source of data for each variable are listed in the Appendix.

Table 1 reports the number of acquisitions undertaken between 2001 and 2012 in our sample.¹² Clearly, there was more acquisition activity around the 2004-2005 period in terms of the number of acquisitions, which peaked in 2007 and then declined steadily until 2012.

Table 1
Number of acquisitions by calendar year

This table reports the number of acquisitions in our sample by calendar year. Not all acquisitions are used in every table because of possibly missing observations

Year	Number of Acquisitions
2001	6
2002	6
2003	13
2004	18
2005	19
2006	22
2007	29
2008	17
2009	13
2010	13
2011	5
2012	6
Total	167

V. EMPIRICAL RESULTS

A. Univariate Analysis

We begin by compiling the descriptive statistics of the data variables and other calculated variables studied in this paper. Table 2 presents the sample characteristics and descriptive

statistics. The variables have been defined in the Appendix. We calculate the cumulative abnormal returns (CARs) for sample firms, and buy and hold abnormal returns (BHARs), during the announcement quarter, one, two and three years after the announcement of the merger.

For CARs and BHARs, we use a standard event study methodology.¹³ First, using a market model we estimate betas of daily returns by regressing stock returns on daily Sensex Index returns using observations from one year to 20 days prior to acquisition announcement. Estimated betas are then used to predict stock returns (daily or quarterly) and abnormal returns are calculated as the difference between realized and predicted returns.

In addition to 3-day CARs and BHARs, we also report descriptive statistics for returns on assets (ROAs), and market to book (MTB) ratio for the value of equity for various time frames. Also reported are percentage ownership of all insiders, all institutional investors, corporate investors, outside individual investors and foreign institutional investors for the quarter before the announcement of the merger. The rationale for computing the ownership percentages one quarter before the announcement is predicated on the assumption that we are attempting to track ownership changes taking place before the change in firms' performance rather than ownership changes occurring as a response to improved performance of firms after the announcement of mergers. We also report the statistics of the following variables observed in the quarter before the announcement: acquirers' market capitalization, log of activity index and percentage ownership of a target firm by the acquirer before the acquisition. All indicator variables have been defined in the Appendix. Finally, we report the quasi Herfindahl-Hirschman Index measuring concentration by five groups of investors.

Both the 3-day CARs and BHAR in the announcement quarter show positive average and negative median returns in Table 2. Long-term BHARs are all positive, although non-monotonic – they are higher in years 1 and 3 than in year 2. Average returns are higher than median returns. Right skewness of long-run BHARs is consistent with event studies literature, as discussed in Kothari and Warner (2006), and indicates possible cross correlation of data, which we will discuss later.

ROA peaks at 5.71% one year after the announcement quarter and declines to 3.87% three years after the announcement. Market value of equity rises three years after the announcement. In general, the sample firms have lower ROAs three years after the announcement of mergers but their market value appears to be rising. One quarter before the announcement, insiders own 45.14%, institutional investors 20.98%, corporate investors 8.57%, outside individual investors 20.47% and foreign institutional investors owned 11.22%.

Table 2
General statistics

This table reports statistics for the full sample of Indian companies, which were involved in M&As from July 2001 to December 2012 as acquirers. Unless indicated otherwise, the numbers refer to the quarter before the acquisition announcement. All variables are as described in Appendix.

	Average	Median	Standard Deviation	Maximum	Minimum	Non-Missing Observations	Missing Observations
Estimated beta	0.90	0.91	0.93	3.19	(8.65)	148	19
3-Day CARs	1.63%	-0.31%	21.39%	118.94%	-60.61%	128	39
BHARs in the quarter of acquisition announcement	4.57%	-2.25%	33.98%	183.57%	-58.53%	140	27
BHARs over one year after the quarter of acquisition announcement	18.49%	8.63%	53.19%	240.98%	-80.88%	131	36
BHARs over two years after the quarter of acquisition announcement	7.29%	2.55%	87.16%	398.76%	-314.14%	122	45
BHARs over three years after the quarter of acquisition announcement	21.64%	2.54%	125.53%	449.96%	-538.89%	108	59
ROA in a quarter before acquisition announcement	1.50%	1.12%	2.61%	18.55%	-5.13%	133	34
ROA in a quarter of acquisition announcement	1.94%	1.31%	5.56%	31.81%	-34.50%	136	31
ROA over one year after the quarter of acquisition announcement	5.71%	3.73%	10.60%	70.45%	-26.86%	126	41
ROA over two years after the quarter of acquisition announcement	4.09%	2.74%	9.35%	66.42%	-20.85%	124	43
ROA over three years after the quarter of acquisition announcement	3.87%	3.29%	7.23%	26.21%	-15.34%	111	56
Equity MTB Ratio in a quarter before acquisition announcement	2.30	1.40	3.71	30.20	0.00	148	19
Equity MTB Ratio in a quarter of acquisition announcement	2.00	1.49	1.99	10.21	0.00	148	19
Equity MTB Ratio one year after the acquisition announcement	2.29	1.46	3.07	19.21	0.00	146	21
Equity MTB Ratio two years after the acquisition announcement	2.35	1.21	3.50	18.99	0.08	141	26
Equity MTB Ratio three years after the acquisition announcement	3.51	1.37	12.44	100.43	0.10	127	40

Table 2 (continued)

	Average	Median	Standard Deviation	Maximum	Minimum	Non-Missing Observations	Missing Observations
Ownership % by all insiders	45.14	47.57	22.97	98.62	0.00	153	14
Ownership % by all institutions	20.98	13.54	20.88	89.44	0.00	153	14
Ownership % by corporate investors	8.57	5.27	9.28	62.04	0.00	153	14
Ownership % by outside individual investors	20.47	16.80	14.10	81.30	0.57	153	14
Ownership % by foreign institutions	11.22	4.95	14.17	68.85	0.00	153	14
Quasi Herfindahl-Hirschman Index	0.43	0.40	0.13	0.97	0.22	153	14
Acquirer's Market Cap	70,249	9,141	126,090	655,716	14	152	15
EPS	19.82	12.00	25.13	121.44	(42.18)	148	19
Post Merger Indicator	0.19	0.00	0.39	1.00	0.00	167	-
Overlap Indicator	0.38	0.00	0.49	1.00	0.00	167	-
Crossholding indicator	0.41	0.00	0.49	1.00	0.00	167	-
Logarithm of activity index	0.00	0.00	0.00	0.01	0.00	166	1
High Activity Indicator	0.32	0.00	0.47	1.00	0.00	167	-
Low Activity Indicator	0.23	-	0.42	1.00	-	167	-
Toehold (in %)	13.31	0.00	20.49	89.02	0.00	167	-
Same 4-digit SIC Indicator	0.25	0.00	0.43	1.00	0.00	167	-

Table 3

Comparison of subsamples observed before and after January 1, 2006

This table reports statistics for the full sample of Indian companies, which were acquirers in M&As from July 2001 to December 2012 and compares characteristics of these companies before and after January 1, 2006. All variables are as described in Appendix. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively, for the test of differences in means and medians before and after January 1, 2006 subsamples.

		Time		
		Full Sample	Before 2006	After January 1, 2006
		167 observations (1)	73 observations (2)	94 observations (3)
Estimated beta	<i>Ave</i>	0.90	0.81	0.96
	<i>Med</i>	0.91	0.98	0.87
3-Day CARs	<i>Ave</i>	1.63%	5.96%	-0.96%
	<i>Med</i>	-0.31%	-0.31%	-0.32%
BHARs in the quarter of acquisition announcement	<i>Ave</i>	4.57%	-3.17%	9.73%**
	<i>Med</i>	-2.25%	-6.49%	0.13%**
BHARs over one year after the quarter of acquisition announcement	<i>Ave</i>	18.49%	19.62%	17.75%
	<i>Med</i>	8.63%	13.65%	8.51%
BHARs over two years after the quarter of acquisition announcement	<i>Ave</i>	7.29%	12.34%	3.67%
	<i>Med</i>	2.55%	9.02%	-5.06%
BHARs over three years after the quarter of acquisition announcement	<i>Ave</i>	21.64%	21.56%	21.70%
	<i>Med</i>	2.54%	-7.46%	8.09%
ROA in a quarter before acquisition announcement	<i>Ave</i>	1.50%	1.16%	1.80%
	<i>Med</i>	1.12%	0.80%	1.39%*
ROA in a quarter of acquisition announcement	<i>Ave</i>	1.94%	0.35%	3.35%***
	<i>Med</i>	1.31%	0.57%	1.70%***
ROA over one year after the quarter of acquisition announcement	<i>Ave</i>	5.71%	5.09%	6.27%
	<i>Med</i>	3.73%	3.00%	4.56%**
ROA over two years after the quarter of acquisition announcement	<i>Ave</i>	4.09%	4.19%	4.00%
	<i>Med</i>	2.74%	1.55%	3.26%
ROA over three years after the quarter of acquisition announcement	<i>Ave</i>	3.87%	3.26%	4.50%
	<i>Med</i>	3.29%	1.61%	3.49%
Equity MTB Ratio in a quarter before acquisition announcement	<i>Ave</i>	2.30	1.19	3.13***
	<i>Med</i>	1.40	0.75	2.09***
Equity MTB Ratio in a quarter of acquisition announcement	<i>Ave</i>	2.00	1.27	2.53***
	<i>Med</i>	1.49	1.00	1.82***
Equity MTB Ratio one year after the acquisition announcement	<i>Ave</i>	2.29	1.87	2.61
	<i>Med</i>	1.46	1.19	1.56
Equity MTB Ratio two years after the acquisition announcement	<i>Ave</i>	2.35	2.50	2.23
	<i>Med</i>	1.21	1.21	1.24
Equity MTB Ratio three years after the acquisition announcement	<i>Ave</i>	3.51	1.67	5.16*
	<i>Med</i>	1.37	1.05	1.64**

Table 3 (continued)

		Time		
		Full Sample	Before 2006	After January 1, 2006
		167 observations (1)	73 observations (2)	94 observations (3)
Ownership % by all insiders	<i>Ave</i>	45.14	44.90	45.33
	<i>Med</i>	47.57	48.16	47.47
Ownership % by all institutions	<i>Ave</i>	20.98	18.65	22.80
	<i>Med</i>	13.54	10.42	15.77
Ownership % by corporate investors	<i>Ave</i>	8.57	8.63	8.53
	<i>Med</i>	5.27	5.48	5.10
Ownership % by outside individual investors	<i>Ave</i>	20.47	22.28	19.06
	<i>Med</i>	16.80	19.82	16.18
Ownership % by foreign institutions	<i>Ave</i>	11.22	10.48	11.80
	<i>Med</i>	4.95	1.78	7.89
Quasi Herfindahl-Hirschman Index	<i>Ave</i>	0.43	0.44	0.43
	<i>Med</i>	0.40	0.42	0.38
Acquirer's Market Cap	<i>Ave</i>	70,249	32,110	98,743***
	<i>Med</i>	9,141	2,955	16,506***
EPS	<i>Ave</i>	19.82	16.83	22.10
	<i>Med</i>	12.00	8.30	16.59**
Post Merger Indicator	<i>Ave</i>	0.19	0.15	0.21
	<i>Med</i>	0.00	0.00	0.00
Overlap Indicator	<i>Ave</i>	0.38	0.37	0.39
	<i>Med</i>	0.00	0.00	0.00
Crossholding indicator	<i>Ave</i>	0.41	0.32	0.49**
	<i>Med</i>	0.00	0.00	0.00
Logarithm of activity index	<i>Ave</i>	0.00	0.00	0.00
	<i>Med</i>	0.00	0.00	0.00***
High Activity Indicator	<i>Ave</i>	0.32	0.58	0.13***
	<i>Med</i>	0.00	1.00	0.00***
Low Activity Indicator	<i>Ave</i>	0.23	0.27	0.20
	<i>Med</i>	0.00	0.00	0.00
Toehold (in %)	<i>Ave</i>	13.31	12.23	14.14
	<i>Med</i>	0.00	0.00	0.00
Same 4-digit SIC Indicator	<i>Ave</i>	0.25	0.25	0.24
	<i>Med</i>	0.00	0.00	0.00

Table 3 replicates the analysis of Table 2, but the sample is now stratified according to whether the acquisition was announced before or after January 1, 2006. Column 2 presents the results for the sample of mergers that were announced before January 1, 2006, later in the paper referred to as pre-2006, and Column 3 presents the results for the sample of firms that announced mergers after January 1, 2006, later in the paper referred to as post 2005. Figures in column 3 also show the statistical significance of the differences in the means and median coefficient estimates for variables in column 3 (post 2005 acquisitions) and column 2 (pre-2006 acquisitions).

The 3-day CARs in the announcement quarter are higher (5.96%) before January 2006 than after (-0.96%). BHARs in the announcement quarter are positive and higher (9.73%) after January 2006 than before (-3.17%) and the difference is significant at the 5 percent level. On average, BHARs for 1, 2, and 3 years after the event are positive and higher for firms from pre-2006 sample compared to post 2005 sample, but the difference is not statistically significant. ROA is higher in the post 2005 period, even though the differences are not statistically significant. Value of MTB ratio is higher in the post 2005 period, but the results are statistically significant only in the quarter before, the quarter of the announcement, and three years after the announcement.

Insider ownership is marginally higher (45.33%) in the post 2005 era than in the pre-2006 period (44.90%), ownership by all institutional owners is also higher (22.80% vs 18.65%) but ownership percentages are lower for corporate investors (8.53% vs 8.63%) and outside individual investors (19.06% vs 22.28%). Separately, ownership percentage by foreign institutional investors, which is included in all institutional investors above, increased from 10.48% in the pre-2006 era to 11.80% in the post 2005 period. However, differences in ownership percentages between pre-2006 and post 2005 periods are not statistically significant for all classes of ownership listed in Table 3. The quasi Herfindahl-Hirschman Index, the overlap indicator, the logarithm of activity index, the low activity indicator, the percentage of target company owned by acquirer and same 4 digit SIC indicator are comparable in both time periods. But, the acquirer's market capitalization in the post 2005 era is substantially higher than in the pre-2006 period and the difference is statistically significant at the 1 percent level, the earnings per share (EPS) and the crossholdings indicator is higher in the post 2005 era and the difference is statistically significant at the 5 percent level, and the high activity indicator is lower in the post 2005 era and the difference is significant at the 1 percent level.

Based on the results thus far reported, it is firms in the pre-2006 period that posted higher long term BHAR but it is firms in the post 2005 period that posted higher short term (the announcement quarter) BHAR, higher ROA, market capitalization and EPS. So, in a broader context, the acquiring firms performed relatively better in the post 2005 period than in the pre-2006 period. Institutional ownership is higher in the post 2005 period but insider ownership does not decline in the same period. So, based on univariate analysis, we find provisional support for hypotheses two and three but not for hypothesis one. Contrary to market perceptions, insider ownership in Indian acquiring firms does not decline as it was expected to. Although institutional ownership on the whole does increase, we do not find evidence to the effect that institutional investors invested more in firms with lower proportion of insider ownership.¹⁴

Traditionally, insiders are long term investors and do not respond to quarterly returns whereas institutional investors, especially foreign institutional investors, are more active in tracking stock market performance to churn their portfolio choices and invest in

firms with better stock market performance (Prasanna, 2008). The results appear to support the hypothesis that institutional investors prefer to invest in firms which are expected to or do indeed post superior stock returns. According to the univariate analysis institutional investments increased during the post 2005 era and operating performance of firms did improve during the post 2005 era. Next, we explore whether short term returns around the acquisitions announcement as measured by the three day CARs and longer term returns as measured by the cumulative quarterly stock returns 1, 2 and 3 years after the announcement are explained by our chosen independent variables.

B. Regression Analysis

We use short-term event study methodology and utilize 3-day CARs to measure stock market reaction to announcement news of acquisition (Fama et. al., 1969; Fama, 1970). As Fuller et al. (2002) and other studies point out, timing of acquisition can be strategically chosen and it is difficult to disentangle effects of different confounding factors. One can control for different factors by using a multi-factor regression analysis. Regressing CARs as dependent variables on a set of independent variables, including company characteristics and ownership, we try finding which of these independent variables have significant effect on market reaction.

Table 4 presents the results when the dependent variable is the 3-day CAR. Panel A presents the results for all acquirers for the entire time period of the study whereas Panel B presents the results for acquisitions announcements after January 2006. The results reported in Panel A show that increasing ownership by insiders and institutional owners before the announcement quarter is positively related to the 3-day CARs, but the coefficients are not statistically significant. But when each of these two variables are interacted with the post 2005 indicator, the coefficients turn negative, implying that even though their overall influence on 3-day CARs is positive, their effect on the post 2005 acquirer returns is negative. This is consistent with the univariate analysis wherein the 3-day CARs were lower (-0.96%) in the post 2005 period and higher (5.96%) in the pre-2006 period for the overall sample of firms. The post 2005 Announcement Indicator is positive and statistically significant. On the other hand, corporate investors affect the 3-day CARs negatively, but the coefficients are not statistically significant. Logarithm of acquirer's market capitalization and EPS affect the 3-day CARs negatively along with the 100% cash indicator and the crossholding indicator, but the coefficient for the EPS variable is statistically insignificant. The same 4-digit SIC indicator is positive and statistically significant at the 5 percent level. An important point to note is that acquirer's market capitalization and EPS, based on univariate analysis, were higher in the post 2005 period than in the pre-2006 period.

The results in Panel B which uses the sample of acquirers after January 1, 2006, show that insider ownership and institutional ownership continue to affect 3-day CARs positively although both coefficients for these two variables are not statistically significant. Corporate investors continue to affect the 3-day CARs negatively whereas outside individual investors continue to affect them positively, but the coefficients are not statistically significant. Logarithm of acquirer's market capitalization and EPS exert a negative influence on 3-day CARs along with the 100% cash indicator and the cross holding indicator. The same 4-digit SIC indicator is once again positive and statistically significant at the 5 percent level.

Table 4
 OLS regression analysis in acquisition announcement quarter for 3-day CAR as a dependent variable

The table reports the coefficients of OLS regression analysis in the quarter when acquisition was announced for 3-day Cumulative Abnormal Returns (CARs) for the sample of Indian companies involved in M&A activity as acquirers from July 2001 to December 2012. If a company had more than one acquisition, each announcement is treated as a separate event. Abnormal return is calculated as the difference between company return and predicted return for this company based on a market model with BSE Index return as a proxy for market return. All independent variables are as described in Appendix. In regression all ownership variables were divided by 100.

Panel A. All Acquisitions			
	1	2	3
Intercept	0.0835 (0.251)	0.1318 (0.512)	0.1037 (0.650)
Ownership % by all insiders		0.0673 (0.647)	0.1800 (0.500)
The square of ownership % by all insiders			-0.0629 (0.877)
Ownership % by all insiders x Post 2005 Indicator			-0.0967 (0.452)
Ownership % by all institutions		0.1968 (0.280)	0.3181* (0.085)
Ownership % by institutions x Post 2005 Indicator			-0.1754 (0.192)
Ownership % by corporate investors		-0.2504 (0.292)	-0.2967 (0.258)
Ownership % by outside individual investors		0.0268 (0.868)	0.0249 (0.903)
Quasi Herfindahl-Hirschman Index			-0.0540 (0.799)
Logarithm of Acquirer's Market Cap	-0.0115* (0.057)	-0.0238* (0.082)	-0.0245* (0.096)
100% cash	-0.0879* (0.060)	-0.0885* (0.059)	-0.0818* (0.078)
Toehold (in %)	0.0002 (0.906)	0.0000 (0.974)	0.0000 (0.973)
Same 4-digit SIC Indicator	0.0940** (0.044)	0.1093** (0.031)	0.1102** (0.026)
EPS	-0.0006 (0.279)	-0.0006 (0.330)	-0.0007 (0.286)
Crossholding indicator	-0.0724** (0.023)	-0.0717** (0.038)	-0.0734** (0.033)
Overlap Indicator	0.0567 (0.182)	0.0476 (0.253)	0.0487 (0.216)
Logarithm of activity index	7.0742 (0.323)	11.5583 (0.131)	13.4579* (0.081)
Post 2005 Indicator	0.1780** (0.012)	0.1869** (0.013)	0.2641** (0.010)
Adjusted R-squared	0.0564	0.0426	0.0060
Observations	124	121	121

Panel B. Acquisitions Announced after January 1, 2006			
	1	2	3
Intercept	0.3664*** (0.003)	0.3794 (0.401)	0.4121 (0.373)
Ownership % by all insiders		0.1420 (0.666)	0.1562 (0.756)
The square of ownership % by all insiders			0.0981 (0.864)
Ownership % by all institutions		0.3517 (0.276)	0.4347 (0.204)
Ownership % by corporate investors		-0.2220 (0.630)	-0.2428 (0.592)
Ownership % by outside individual investors		0.1325 (0.705)	0.1977 (0.568)
Quasi Herfindahl-Hirschman Index			-0.1955 (0.470)
Logarithm of Acquirer's Market Cap	-0.0218** (0.021)	-0.0396* (0.080)	-0.0425* (0.069)
100% cash	-0.0864 (0.107)	-0.0822 (0.131)	-0.0749 (0.181)
Toehold (in %)	0.0001 (0.950)	-0.0001 (0.953)	-0.0001 (0.930)
Same 4-digit SIC Indicator	0.1240** (0.040)	0.1380** (0.020)	0.1322** (0.031)
EPS	-0.0009 (0.211)	-0.0009 (0.271)	-0.0009 (0.280)
Crossholding indicator	-0.0853* (0.052)	-0.0736 (0.111)	-0.0673 (0.138)
Overlap Indicator	0.1014 (0.110)	0.0857 (0.159)	0.0787 (0.180)
Logarithm of activity index	7.3950 (0.556)	11.3068 (0.377)	13.5189 (0.266)
Adjusted R-squared	0.0750	0.0486	0.0208
Observations	85	82	82

p-values are reported in parentheses. *, **, and *** denote statistical significance of regression coefficients at the 10%, 5%, and 1% level, respectively.

Evidently, acquisitions within the same industry are viewed favorably by the market for both the entire sample period and after January 2006. Based on the regression results, it is not readily evident that acquiring firms posted superior returns after 2006 even though institutions did increase their holdings markedly in the same period and insiders increased their holdings marginally.

The results reported in Panel B for acquisitions announced after January 1, 2006 do not differ substantially from those reported in Panel A. The adjusted R^2 for both regressions are comparable. But the intercept in Panel B is relatively higher than in Panel A and it is this fact which leads us to apprehend that other factors beyond the variables we have considered might be in play.¹⁵

Event studies approach has a known disadvantage – it cannot be used in practice as a true investment (trading) strategy. Also it is well-known that long-term event studies have possible misspecification problems due to cross-correlation of abnormal returns. As Kothari and Warner (2007) indicate “long-horizon abnormal returns tend to be cross-

correlated because: (i) abnormal returns for subsets of the sample firms are likely to share a common calendar period due to the long measurement period; (ii) corporate events like mergers ... exhibit waves...; and (iii) some industries might be over-represented in the event sample." Also, if a company performs multiple acquisitions within the event window, overlapping events occur.

To address these issues we use a calendar-time approach (sometimes also called Jensen's alpha approach), because not only it shows results for an investment strategy, which could be used in practice, but also is "immune to the bias arising from cross-correlated (abnormal) returns because of the use of calendar-time portfolios" (Kothari and Warner, 2007). Returns on portfolios are calculated quarterly in calendar time for equally-weighted portfolios of companies which are included into portfolios for a specified period of time after the acquisition announcement. Acquiring companies are included into portfolio for 6 months, 1 year, 2 years, and 3 years after the announcement of the acquisition and regressions are run with and without the Post 2005 Announcement Indicator. Table 5 shows the results when calendar-time portfolio approach is used. The fact that the significance of the intercept goes away once the post 2005 indicator is introduced could mean that these factors are related to changes around 2005.

To investigate the role of different factors on post-acquisition performance, we run regression analysis with using long run quarterly returns as the dependent variable. Empirical studies of mutual fund performance often use quarterly returns as measures for performance since data pertaining to mutual fund performance is available quarterly (Grinblatt and Titman, 1989). We use quarterly data for stock performance since only quarterly ownership data was available. Using quarterly returns as the dependent variable and a list of independent explanatory variables, we follow Fuller et al. (2002) and Banerjee et al. (2014) and run regressions to determine the influences of selected independent variables, on cumulative quarterly stock returns one, two and three years after the quarter of announcement of the merger. Table 6 reports the OLS regression results when dependent variables are, respectively, cumulative quarterly stock returns for 1, 2, and 3 years after the acquisition announcement. Columns 1, 3 and 5 show the results when only the ownership variables are included; columns 2, 4, and 6 show the results when all the independent variables are included along with the ownership variables. For this analysis, all independent variables, including ownership variables, are from the quarter before the announcement of the merger.

Insiders have negative increasing over time effect on cumulative quarterly returns. The effect persists when interacted with the post 2005 indicator even though the effect is slightly muted 3 years after the announcement when compared to the insider ownership variable without the interaction term. We also check for non-linear effect of insiders' ownership as in Stulz (1988). The coefficient for the square of insiders' ownership is positive and significant. Institutional ownership affects the 1 year cumulative quarterly returns positively but the effect is changed to negative 2 and 3 years after the announcement with all effects exhibiting no statistical significance. However, in the post 2005 period, the effect is uniformly positive, and the coefficients are statistically significant when other independent variables are included with the ownership variables in the regression analysis. So, long term performance of acquirers is higher (a) when insider ownership is smaller in the quarter before the announcement – confirming hypothesis one – and (b) when institutional ownership is higher – confirming hypothesis two – but the positive effect is felt only in the first year after the announcement after the

announcement of the merger, turning negative in two and three years after the announcement. However, in the post 2005 period, insider ownership is negatively related to long term quarterly returns over 1, 2, and 3 years while institutional ownership is positively related to long term quarterly returns over 1, 2 and 3 years. Thus, hypothesis one is supported in all the 3 years, and hypothesis two is supported more strongly in the post 2005 era. Additionally, hypothesis three is validated since firms with higher institutional ownership do better in the post 2005 era than in the 2001 to 2005 period.

The coefficients for the variables we selected to describe operating performance, market capitalization and EPS have the same sign as they did when we regressed them against the 3-day CARs. A similar pattern is observed for other control and indicator variables. Deal characteristics like 100% cash are negative and statistically insignificant in the long run analysis, just as they were for the acquirers after the post 2005 era in the short run (3-day CARs) analysis. However, the same 4-digit SIC indicator is negative in contrast with the results for 3-day CARs when it was uniformly positive. So it is likely that although mergers within the same industry group are favored in the short run they do not perform well in the long run. To control for overlapping events we use the overlap indicator. It is positive and significant at 10% level for 1 year event window, possibly indicating that companies choose their acquisitions strategically. Similarly, coefficient of activity index is positive and significant at 10% level for 2 and 3 years event windows.

VI. CONCLUSION

Our study is based on the premise that changes in the ownership proportions of insiders and institutional investors in India will have traceable effects on the performance of firms, namely lower levels of insider ownership and higher levels of institutional ownership will result in better performance of firms over time. Using acquisitions as the setting for testing our hypotheses, we analyzed the performance of Indian firms involved in mergers and acquisitions during the period from March 2001 to March 2012. With the explicit goal of assessing the impact of insider and institutional holdings before the announcement of acquisitions on post-merger performance of acquirers we conduct univariate analysis and regression analysis of both short run and long run returns.

Based on univariate results, the acquiring firms perform better in the post 2005 period than in the pre-2006 period. Institutional ownership is higher in the post 2005 period than in the 2001 to 2005 period, but insider ownership does not correspondingly decline in the post 2005 period. So, we find provisional support for hypothesis that firms with higher proportion of institutional ownership posted superior post-merger performance and firms performed better after an acquisition during the post 2005 era than during the 2001-2005 era when foreign direct investments into India recorded a steep increase and Indian insiders reportedly decided to implement a policy switch in terms of letting professional managers to have some inputs in major decisions made by firms. But we do not find support for our hypothesis that during the period 2001 to 2012, Indian firms with lower concentration of insider ownership performed, on average, better after the completion of an acquisition than Indian firms with higher proportion of insider ownership. Contrary to market perceptions, insider ownership in Indian acquiring firms does not decline as it was expected to, although institutional ownership did increase during the time period of our study.

Table 5
Return of calendar M&A portfolio

The table reports the coefficients of OLS regression analysis of quarterly returns of M&A portfolios for the sample of Indian companies involved in M&A activity as acquirers from July 2001 to December 2012. Returns are calculated quarterly in calendar time for equally-weighted portfolios of companies which are included into portfolios for a specified period of time after the acquisition announcement. Acquiring companies are included into portfolio for 6 months, 1 year, 2 years, and 3 years for models 1 and 2, 3 and 4, 5 and 6, and 7 and 8, respectively. To be included into analysis, a quarter needs to have at one least company observation available (one quarter is missing due to no returns available). All models included fixed effects - calendar year of return quarter (not reported). All independent variables are as described in Appendix. In regression all ownership variables were divided by 100. p-values are reported in parentheses. *, **, and *** denote statistical significance of regression coefficients at the 10%, 5%, and 1% level, respectively.

	1	2	3	4	5	6	7	8
Intercept	0.0385* (0.081)	-0.0073 (0.867)	0.0259* (0.080)	0.0251 (0.400)	0.0184 (0.206)	0.0358 (0.233)	0.0119 (0.393)	0.0310 (0.282)
Quarterly BSE Returns	1.8990*** (0.000)	1.9227*** (0.000)	1.5458*** (0.000)	1.5462*** (0.000)	1.5492*** (0.000)	1.5402*** (0.000)	1.5116*** (0.000)	1.5017*** (0.000)
Post 2005 Indicator		0.0717 (0.175)		0.0012 (0.972)		-0.0273 (0.404)		-0.0300 (0.341)
Adjusted R-squared	0.7349	0.7411	0.8409	0.8371	0.8447	0.8441	0.8472	0.8475
Observations	45	45	45	45	45	45	45	45

Table 6
OLS regression analysis of cumulative quarterly stock returns (with controls)

The table reports the coefficients of OLS regression analysis of cumulative quarterly stock returns for the sample of Indian companies involved in M&A activity as acquirers from July 2001 to December 2012. Models use cumulative returns over corresponding period of time, starting in the quarter after the announcement. All independent variables are as described in Appendix. In regressions all ownership variables were divided by 100. If a company had more than one acquisition, each announcement was treated as a separate event. p-values are reported in parentheses. *, **, and *** denote statistical significance of regression coefficients at the 10%, 5%, and 1% level, respectively.

Table 6 (continued)

	1 year returns		2 year returns		3 year returns	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.3081 (0.445)	0.1511 (0.816)	0.8392* (0.087)	0.2417 (0.818)	1.4129** (0.045)	-0.5286 (0.654)
Ownership % by all insiders	-0.8520 (0.277)	-0.6932 (0.480)	-0.8948 (0.325)	-0.8906 (0.534)	-3.1841** (0.014)	-3.1494* (0.062)
The square of ownership % by all insiders	2.2671** (0.013)	1.6373 (0.159)	2.5266** (0.015)	2.0083 (0.265)	5.6033*** (0.000)	6.3684*** (0.001)
Ownership % by all insiders x Post 2005 Indicator	-1.0337*** (0.000)	-0.3952 (0.490)	-1.6930*** (0.000)	0.2179 (0.768)	-1.8360*** (0.000)	0.9683 (0.196)
Ownership % by all institutions	0.0537 (0.925)	-0.5766 (0.370)	-0.1391 (0.847)	-0.4454 (0.570)	-0.3215 (0.746)	-0.6793 (0.573)
Ownership % by institutions x Post 2005 Indicator	0.2567 (0.471)	0.6633 (0.285)	-0.2323 (0.571)	1.3008* (0.084)	0.3657 (0.388)	2.5908*** (0.002)
Ownership % by corporate investors	2.0520 (0.119)	1.8768** (0.020)	1.5386 (0.295)	0.6771 (0.574)	3.0604** (0.034)	1.2594 (0.437)
Ownership % by outside individual investors	0.2051 (0.709)	-0.4045 (0.462)	-0.0493 (0.944)	0.4580 (0.523)	-0.7744 (0.354)	1.6623 (0.105)
Quasi Herfindahl-Hirschman Index		-0.3122 (0.593)		-0.7543 (0.426)		-2.3103** (0.016)
Cumulative BSE Returns after the quarter of acquisition announcement for a period of time specified in the model		1.9157*** (0.000)		1.2166*** (0.000)		2.7937*** (0.000)
Logarithm of Acquirer's Market Cap		-0.0448* (0.085)		-0.0180 (0.725)		0.0432 (0.374)

Table 6 (continued)

	1 year returns		2 year returns		3 year returns	
	(1)	(2)	(3)	(4)	(5)	(6)
Post 2005 Indicator		0.5388 (0.179)		-0.1913 (0.706)		-0.5698 (0.246)
100% cash		-0.0002 (0.999)		0.0116 (0.923)		0.0809 (0.521)
Toehold (in %)		-0.0004 (0.854)		-0.0023 (0.308)		-0.0041 (0.197)
Same 4-digit SIC Indicator		-0.1330 (0.155)		-0.3086** (0.016)		-0.1360 (0.420)
EPS		-0.0009 (0.450)		0.0008 (0.691)		-0.0045 (0.182)
Crossholding indicator		-0.0792 (0.272)		0.1603 (0.154)		0.0804 (0.492)
Overlap Indicator		0.1465* (0.055)		-0.0237 (0.816)		-0.0722 (0.553)
Logarithm of activity index		17.4352 (0.329)		54.5356* (0.098)		74.9260** (0.021)
Adjusted R-squared	0.1032	0.6134	0.2911	0.4545	0.2164	0.6220
Observations	127	125	118	116	105	103

In analyzing the long term returns measured by cumulative quarterly returns, we find that firms with lower proportion of insider ownership display superior post-merger performance than firms with higher proportion of insider ownership even though insider ownership does not in the aggregate decline, as has been alleged, during the time period of our study. In contrast, the positive effects of institutional investors on long term returns are visible 1, 2, and 3 years after the acquisitions only for the post 2005 era. For the entire sample, the positive effects of institutional holdings are seen only one year after the acquisitions, turning to negative in years two and three after the acquisitions. Also, firms with higher proportion of institutional holdings do operationally better, especially after the 2001–2005 era.

These findings lead us to conclude that insiders of Indian acquiring firms have increased their stakes, albeit marginally, in Indian corporations even after (a) they recognized the need for professionalism in their running of Indian corporations in the wake of enhanced competition surfacing in India, (b) the government implemented economic reforms and permitted foreign corporations to compete with domestic firms on a more level footing, and (c) the government signaled its wishes for the insiders to reduce their holdings in listed companies. However, firms with high concentration of insider holdings prior to mergers have not posted superior operating performance after the mergers; they have in fact lagged the firms with lower concentration of insider holdings. Thus our study does provide indirect evidence for the positive association between superior post-merger performance and earlier declines in the holdings of insiders in Indian acquiring firms.

We are unable to document systematic superior abnormal post-merger performance of acquiring firms after 2005 in comparison to the Sensex Index. It is interesting to note that it is acquiring firms in the pre-2006 period that posted higher long term BHAR but lower short term BHAR in the announcement quarter. Acquiring firms in the post 2005 period posted higher ROA, market capitalization and EPS. Institutional investors acquire stock in firms which do perform relatively better after the acquisitions and higher institutional holdings seem to contribute toward the post-acquisition performance of acquiring firms, especially after 2005. Institutional holdings affect quarterly stock returns positively 1, 2 and 3 years after the announcement of the mergers. It is not clear whether institutional investors are correctly identifying potentially superior mergers and investing in such firms or whether their involvement in acquiring firms before the mergers is leading to better performance after the mergers. Nevertheless, portfolio gains appear to be influencing the institutional investors' decisions to invest in firms with higher short term stock returns, contrary to the evidence reported by McCahery et al. (2016). More research into whether institutional investors are indeed making long term investments in Indian firms is definitely warranted.

ENDNOTES

1. To keep with established practice, in this paper we use the term “insiders,” although in India insiders are called promoters. Promoter is a person who brings about the incorporation and organization of a corporation and retains the overall control of the company. Relatives of the promoter and other associates form the promoter group. Indian promoters have dominated the corporate sector ever since India became a sovereign nation in 1947. However, a formal definition of the role and function of

promoters appeared for the first time in the Indian Companies Act of 2013 which clearly defined their role in corporate governance and assigned on them enhanced accountability (Kaur, 2015).

2. Even though the Indian government permitted foreign individual and institutional investors to participate more actively in Indian equity markets beginning 1991, it was not until 2002 that foreign institutional holdings in Indian firms began to grow markedly with steep increase in ownership in 2005-2006.
3. Despite substantive measures implemented to encourage non-insider shareholder activism in Indian capital markets (Varottil, 2012), insiders allegedly continue to dominate Indian corporate ownership with seemingly little mitigating influence originating from either institutional investors or other minority shareholders.
4. Since 1957, publicly listed firms were required to comply with minimum shareholding requirements as per the Securities Contracts Regulation Act (SCRA) but these requirements were rendered ineffective for all practical purposes by SEBI which had the discretionary power to waive or modify this requirement. However, on June 4, 2010, the Government of India amended the SCRA rules and ordered all publicly listed firms to attain a minimum of 25 percent of public shareholding; the deadline for compliance was set June 2013 for all private sector companies and August 2013 for all public sector undertakings.
5. The requirement to maintain a minimum public shareholding of 25% of each class or kind of equity shares or convertible debentures issued by a listed company (other than public sector firms) is provided under Rule 19(2)(b) of Securities Contracts (Regulation) (Amendment) Rules, 2010. Minimum public participation in listed companies has always been advocated by the regulators as this ensures liquidity in the market and promotes discovery of fair price of securities. Further, the availability of a minimum number of floating stock promotes market depth and reduces the chances of market manipulation of listed securities.
6. Portfolio gains driven strategies refer to investments in markets when expected returns are high and withdrawal of funds when returns decline, indicating a positive correlation between foreign institutional investment flows and lagged local equity returns.
7. According to a survey by the Japan Bank of International Corporation (JBIC), India has been ranked as the most preferred destination for future investments, with Indonesia and China at second and third places respectively.
8. We choose 2006 as the year of demarcation since foreign direct investment (FDI) increased from U.S. \$ 8.9 billion in 2005 to \$ 22.7 billion in 2006 – a 155% increase – and the Indian financial press has consistently regarded the years 2005/06 as the years when insiders and their affiliates began to seriously consider the threat of foreign competition and recognized the need for professionalism in their organizations in order to compete effectively with foreign investors, who, in addition to having a preference for buying into companies with professional management (Tawiah et al., 2015), were also expected to hire away professional managers working in insider-heavy Indian companies.
9. The government of India has increased the FDI and FII investment limits in phases in different sectors of the economy. Majority foreign holdings are permitted only in select group of industries.
10. See Corporate Dossier, Economic Times, September 20, 2014.

11. Although we focused on acquirers' performance, public status of target companies was necessary due to the data requirement for targets, such as relative size and percentage ownership.
12. CMIE Prowess reports the quarterly holding data for Indian companies only since the second quarter of 2001.
13. Early event studies were performed by Fama et al. (1969) and Fama (1970). The method is described in Brown and Warner (1985) and Kothari and Warner (2007). Ma et al. (2009) apply this methodology specifically to event studies of M&As in Asian stock markets.
14. Prasanna (2008) has reported that institutional investors preferred to invest in firms with higher volume of shares owned by the general public.
15. In other regressions, not reported here, we considered other factors, such as the relative size of the target firm, percentage acquired, but their results were consistent with reported here.

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Appendix
Definitions and sources of variables used

Variable	Description	Source
100% cash	Indicator variable = 1, if acquisition is paid only in cash	SDC
Estimated beta	Beta of stock returns, estimated using daily stock and BSE index returns from one year to 20 days prior to acquisition announcement	Calculated using Prowess Database and SDC
3-Day CARs	Daily Cumulative Abnormal Returns calculated plus minus one day around the announcement date as the difference between company returns and predicted returns for this company based on a market model with BSE Index used as a proxy for market returns	Calculated based on Prowess Database and SDC
BHARs in the quarter of acquisition announcement	Buy and Hold Abnormal Returns in the quarter of acquisition announcement calculated as the difference between company returns and predicted returns for this company based on a market model with BSE Index used as a proxy for market returns	Calculated based on Prowess Database and SDC
BHARs in the quarter after the acquisition announcement	Same as above, but in the quarter after the announcement	Calculated using Prowess Database and SDC
BHARs over one year after the quarter of acquisition announcement	Same as above, but over one year after the quarter of acquisition announcement	Calculated using Prowess Database and SDC
BHARs over two years after the quarter of acquisition announcement	Same as above, but over two years after the quarter of acquisition announcement	Calculated using Prowess Database and SDC
BHARs over three years after the quarter of acquisition announcement	Same as above, but over two years after the quarter of acquisition announcement	Calculated using Prowess Database and SDC
BSE Returns in the quarter of acquisition announcement	BSE Returns in the quarter of acquisition announcement	Calculated using Prowess Database and SDC
BSE Returns in the quarter after the acquisition announcement	BSE Returns in the quarter after the acquisition announcement	Calculated using Prowess Database and SDC
Cumulative BSE Returns after the quarter of acquisition announcement for a period of time specified in the model	Cumulative quarterly returns of BSE Index calculated as the sum of quarterly BSE returns starting in the quarter after acquisition announcement	Calculated using Prowess Database and SDC
Quarterly BSE Returns	Quarterly BSE Returns	Calculated using Prowess Database

Variable	Description	Source
BV per Share	Book value per share	Prowess Database
Low Activity Indicator	Indicator Variable equals 1, if company's M&A activity in a year of acquisition announcement belonged to bottom quartile	Prowess Database, Compustat, SDC
Stock Returns in the quarter of acquisition announcement	Stock Returns in the quarter of acquisition announcement	Calculated using Prowess Database and SDC
Stock Returns in the quarter after the acquisition announcement	Stock Returns in the quarter after the acquisition announcement	Calculated using Prowess Database and SDC
Cumulative Stock Returns over one year after the quarter of acquisition announcement	Cumulative Stock Returns calculated as the sum of four quarterly BSE returns starting in the quarter after acquisition announcement	Calculated using Prowess Database and SDC
Cumulative Stock Returns over two years after the quarter of acquisition announcement	Cumulative Stock Returns calculated as the sum of eight quarterly BSE returns starting in the quarter after acquisition announcement	Calculated using Prowess Database and SDC
Cumulative Stock Returns over three years after the quarter of acquisition announcement	Cumulative Stock Returns calculated as the sum of twelve quarterly BSE returns starting in the quarter after acquisition announcement	Calculated using Prowess Database and SDC
Crossholding indicator	Indicator Variable = 1 if acquirer and target had same investors at some point before acquisition announcement	Prowess Database
EPS	Earnings per share in a quarter before acquisition announcement	Prowess Database
High Activity Indicator	Indicator Variable equals 1, if company's M&A activity in a year of acquisition announcement belonged to top quartile	Prowess Database, Compustat, SDC
The square of ownership % by all institutions	The square of ownership % by all institutional investors	Prowess Database
Ownership % by institutions x Post 2005 Indicator	Interactive term between Ownership % by all institutional investors and post 2005 indicator variable	Prowess Database
Ownership % by all institutions	Ownership % by all institutional investors in a quarter before acquisition announcement	Prowess Database
Intercept	Regression intercept	Prowess Database
Logarithm of activity index	Proxy for activity in the industry sector (1 digit SIC code) in a quarter before acquisition announcement. Equals total value of M&A deals in a given 1-digit SIC code in a given year divided by the total value of assets of all firms in this SIC code	Prowess Database, Compustat, SDC

Variable	Description	Source
Logarithm of Acquirer's Market Cap	Natural Logarithm of Acquirer's Market Capitalization measured in Rupees	Calculated using Prowess Database
Equity MTB Ratio in a quarter before acquisition announcement	Equity Market-to-Book ratio in a quarter before acquisition announcement	Prowess Database
Equity MTB Ratio in a quarter of acquisition announcement	Equity Market-to-Book ratio in a quarter of acquisition announcement	Prowess Database
Equity MTB Ratio one year after the acquisition announcement	Equity Market-to-Book Ratio one year after the acquisition announcement	Prowess Database
Equity MTB Ratio two years after the acquisition announcement	Equity Market-to-Book Ratio two years after the acquisition announcement	Prowess Database
Equity MTB Ratio three years after the acquisition announcement	Equity Market-to-Book Ratio three years after the acquisition announcement	Prowess Database
Acquirer's Market Cap	Acquirer's Market Capitalization measured in Rupees in a quarter before acquisition announcement	Prowess Database
Ownership % by corporate investors	Ownership % by corporate investors in a quarter before acquisition announcement	Prowess Database
Ownership % by foreign institutions	Ownership % by foreign institutional investors who are not insiders in a quarter before acquisition announcement	Prowess Database
Ownership % by outside individual investors	Ownership % by outside individual investors in a quarter before acquisition announcement	Prowess Database
Ownership % by others	Ownership % by others in a quarter before acquisition announcement	Prowess Database
Overlap Indicator	Indicator Variable = 1 if more than one acquisition was announced within the last three years before the quarter of a current acquisition announcement	Prowess Database
P/E Ratio	Price/Earnings ratio in a quarter before acquisition announcement	Prowess Database
Post 2005 Indicator	Indicator variable = 1, if acquisition was announced after January 1, 2006	SDC
Post-Merger Indicator	Indicator Variable = 1 if there was another acquisition within the last three years before the quarter of a current acquisition announcement	Prowess Database
Price	Price per share	Prowess Database

Variable	Description	Source
Ownership % by all insiders	Ownership % by all insiders (foreign, Indian, and those who vote with Indian insiders) in a quarter before acquisition announcement	Prowess Database
Ownership % by all insiders x Post 2005 Indicator	Interactive term between Ownership % by all insiders and post 2005 indicator variable	Prowess Database
The square of ownership % by all insiders	The square of ownership % by all insiders	Prowess Database
Quasi Herfindahl-Hirschman Index	Quasi Herfindahl-Hirschman Index measuring ownership concentration by five groups of investors	Prowess Database
Quarterly Stock Returns	Quarterly stock returns calculated as $((Pt/Pt-1)-1)$, where Pt is the adjusted closing price on the last day of the quarter t	Prowess Database
ROA in a quarter before acquisition announcement	Return on Assets in a quarter before acquisition announcement ^{``}	Calculated using Prowess Database
ROA in a quarter of acquisition announcement	Return on Assets in a quarter of acquisition announcement ^{``}	Calculated using Prowess Database
ROA over one year after the quarter of acquisition announcement	Return on Assets over one year after the quarter of acquisition announcement	Calculated using Prowess Database
ROA over two years after the quarter of acquisition announcement	Return on Assets over two years after the quarter of acquisition announcement	Calculated using Prowess Database
ROA over three years after the quarter of acquisition announcement	Return on Assets over three years after the quarter of acquisition announcement	Calculated using Prowess Database
Same 4-digit SIC Indicator	Indicator Variable = 1 if both acquirer and the target belong to the same industry according to their 4-digit SIC code	SDC
Tobin's Q	Assets Market-to-Book ratio, also known as Tobin's Q in a quarter before acquisition announcement	Calculated using Prowess Database
Toehold (in %)	Percentage of the target company owned by acquirer before the acquisition. The numbers are shown in percentage points	SDC