Do Mergers & Acquisitions Pay Off Immediately? Evidence from Mergers & Acquisitions in India

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Mergers and Acquisitions (M&As) are the vital growth strategies of corporates in the scenario of globalization and liberalization to face competition and move ahead. M&A have grown not only in volume but also in value. It is often stated that the companies go for inorganic growth strategies like M&A to improve performance. There is no clear-cut support from the literature about the effect of M&A on corporate performance. As per various studies, companies perform either better or worse after M&As. But the question arises how long the effect of mergers and acquisitions remain on the companies. The present study is an attempt to find out the time frame for knowing the effects on performance of manufacturing companies from M&A. The results suggest that the impact of M&A on companies are reflected in the immediate years specifically the event year and the post M&A one year.

INTRODUCTION

Mergers and Acquisitions (M&As) are considered as the important growth strategy for companies to satisfy the increasing demands of various stakeholders Krishnamurti and Vishwanath (2010). Literature on theories of M&A shows that the motives of companies behind going for M&A are gaining operating and financial synergy, diversification, achieving economies of scale and scope leading to cost and profit efficiency, acquiring management skills, increase market power, get tax benefits, (Weston *et al.*, 2010; DePamphilis, 2010; Vijgen, 2007; Jensen, 1986; and Jayadev and Sensarma, 2007).

A number of studies have been done in M&A and post M&A firm performance (George, 2007). Most of the studies are done using accounting measures (Kumar and Rajib, 2007); Pazarskis *et al.*, 2006; Ooghe *et al.*, 2006; and Vanitha and Selvam, 2007) and event study (Aggarwal and Jaffe, 1996) methods to find out the shareholder

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returns through M&A. The studies also focused on the economic and financial condition of the companies in the post M&A period. But as far as literature reviewed there is insufficient evidence regarding the period for which the impact of M&A can be seen (George, 2007).

The present study is an attempt to find out the time frame for observing the performance of companies after M&A. With the increase in the volume, value and frequency of M&A deals in India, there is also a need for constructive and realistic framework for analysis of company performance after they went for M&A transactions (Krishnamurti and Vishwanath, 2010). Hence, the study has attempted to look into the performance of M&A transactions in recent times. This study examines the acquisition performance by explicitly analyzing the mobile average returns[1] which are ignored by many of the earlier studies in this M&A research. In a nutshell, this paper try to bring together two sets of literature with empirical evidence from Indian manufacturing companies: one examining the post-acquisition performance; and the second examining the timing of returns in the post-acquisition period.

REASSESSMENT OF PRIOR RESEARCH STUDIES

Review of Indian and International empirical studies has been made in the areas focusing on the research problem. This section reviews the relevant literature based on two aspects:

a. The timing of accrual of returns from M&A—Does M&A effects reflects immediately after the merger?

b. Returns based on performance parameters, viz., liquidity, solvency, and profitability—Does companies improves the its liquidity, solvency, profitability after merger, then when?

POST M&A LIQUIDITY PERFORMANCE OF COMPANIES

Liquidity refers to short-term availability of funds in the company to meet its current liabilities. It is one of the important parameters to judge the firm performance to meet its current obligations. Kumar and Rajib (2007) used the liquidity measures in terms of current ratio and quick ratio; solvency measures in terms of interest coverage ratios and total debt ratios and the profitability measures in terms of return on net worth and return on capital employed. The authors found that companies that have lesser liquidity position becomes a target.

Pazarskis *et al.* (2006) using Current Ratio (CR) and Quick Ratio (QR) found that the decrease in liquidity ratios in the post-M&A event is insignificant. Ooghe *et al.* (2006) suggests that the acquisition deals negative affect to the liquidity position of

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[1] The mobile average generally is a trend line that smoothes the recurrences of the days and provides you with a quick overview of the period trend. For example Formula for say 7 year would be : $Yn = (Xn-3 + Xn-2 + Xn-1 + Xn + Xn+1 + Xn+2 + Xn+3) / 7$ (Source: http://www.shinystat.com/en/glossary-detail_mobile-average.html)

the acquiring firm. Vanitha and Selvam (2007) found that the quick ratio of the target company remains as per the traditional benchmark ratio of 1:1 before and after the merger period. There is a boost in the average net working capital after merger. The reason behind the rise in the networking capital might be the accumulation of the assets of the target company.

POST M&A SOLVENCY PERFORMANCE OF COMPANIES

Solvency refers to the ability and capability of a firm to meet its long term obligations so as to achieve continuing expansion and growth. It is one of the key financial parameters to judge the financial soundness of the firm. Pazarskis *et al.* (2006) using total debt ratio found that the solvency ratios in terms of net worth/total assets, and total debt/net worth decreased slightly in values in post M&A period. Ooghe *et al.* (2006) found that in the initial two years after the acquisition, there is progress in the solvency position of the company. The authors also observed that from the second year the financial independence and the cash flow coverage of debt reduces. The result is inconsistent with the solvency position of the acquirer during the pre-acquisition period. Thus, the acquirers depend more on debt during the post-acquisition period in contrast to the pre-acquisition period. Kumar (2009) observed that post-merger solvency position of the acquiring companies do not show any improvement when compared with pre-merger solvency position.

POST M&A PROFITABILITY PERFORMANCE OF COMPANIES

Profitability refers to the ability of a firm to generate revenues after covering its expenses or any types of cost involved in the business. Dickerson *et al.* (1997) found that acquisition gives no benefit compared to internal growth in terms of profitability. There is negative long-term effect on profitability of companies. Tambi (2005) using Return on Capital Employed Ratio found merger has not improved performance of companies. Pazarskis *et al.* (2006) found that ratios that evaluate the profitability decreased slightly in the post-M&A period.

Kukalis (2007) found that the acquiring company outperformed the target company in pre-merger performance only in the first and second year in terms of Return on Assets (ROA), and only in first year in terms of Return on Sales (ROS) and Earnings before Interest Tax Depreciation Amortisation (EBITDA). There are no statistically different results between pre- and post-merger operating performance of the target company. Interestingly, it is also found that the pre-merger performance of acquirer is significantly better than the post-merger performance of the target company. However, the results are not same in all years or in operating measures that are used.

Mantravadi and Reddy (2008) suggest that the influence of mergers on the operational activities of companies is dissimilar across different industries in India. Companies in the banking and finance industry enjoy positive returns in terms of profitability after merger. Performance, if evaluated in terms of profitability and return on investment, merger has a negative influence of companies in the pharmaceuticals, textiles and electrical equipment sectors. Companies in chemicals and agri-products sectors suffer from substantive negative returns, both in terms of profitability, returns on investment and return on assets. Ooghe *et al.* (2006) advocate that acquisitions provide negative returns in terms of profitability to the acquiring company, although the result is statistically insignificant. The profit margin of the combined firm (acquirer and target) achieves its maximum profit margin in one year before the acquisition. In the first year after acquisition, there is a sharp fall in level of profits. Pre-acquisition (one year before the acquisition) return on assets of the acquirer is better than post-acquisition return on assets. Kumar (2009) observed that post-merger profitability ratios of the acquiring companies do not improve when compared with pre-merger values.

RETURN FROM M&A: WHEN DOES THE COMPANY GAIN FROM M&A?

Loderer and Martin (1992) found that, the acquirer company neither perform better nor worse than the control firms or industry during the first five years following the acquisition. The acquirer get their share of the break-even required rate of return. If timing of getting the return is considered then, the acquirer show poor performance in the first three years. Above all, their performance deteriorates during the second and third years after the acquisition year. Aggarwal and Jaffe (1996) found that the abnormal return in the pre-acquisition period of four years is statistically insignificant but abnormal returns are significantly negative when the time frame is long (more than four years) in the pre-acquisition period. Jakobsen and Voetmann (2003) found that the market performs better than the acquiring companies by 10.4% after three years, or industry adjusted returns of the acquiring company remain poor by 9.3% after three years. The long-run abnormal return in post M&A period is poor but in the short run, the stock price shift in an upward direction during acquisition announcements. The acquiring company shareholders get an abnormal return of +0.71% around announcement period.

Xiao and Tan (2009) using mobile average method found that companies enhanced competence in the form of efficiency after adopting M&A strategy. In the year when M&A took place, the companies showed superior performance compared to the industry average. In the initial year and the beginning of the second year following M&A, there was poor performance of many companies. It indicates that companies involved in M&A require a definite time period to fine tune itself to the new environment. Companies need time to familiarize itself as a new enterprise and hence, M&A effects are not seen in immediate years. In the long run, the operating performance of the listed companies improve as in the process they remain under the environmental forces like changing government policies, pressure from the market and the efforts of the companies themselves. As suggested by Singh (2009) there is no negative performance in terms of cost and profit efficiency and if it is found in the initial years, then it is recovered quickly.

From all the above studies, it is observed that there is no convincing facts that whether the inconsistency in the results from M&A studies is because of the different time frame used in the studies or the parameters they have chosen or the difference in the country of acquirer, target. Specifically if these results are same in Indian context. So, an attempt has been made to look at this knowledge gap in academic literature. The research gaps from the literature are discussed below in detail:

RESEARCH GAPS

As per the past studies, companies either enhance their performance or make poor performance after M&As. But the question still remains unexplored specially in Indian context about the duration of the effect of M&As on the companies. There is limited literature that shows about the timing of receiving the returns from the M&A deals. The present study is an attempt to find out the time frame for return of M&A from M&A in case of value creation of manufacturing companies from M&A.

Literature using different financial ratios has shown whether M&A improve performance of companies or not. But a limited number of studies show during which year the effect of M&A is reflected. Studies in the Indian manufacturing companies are limited in the recent years where M&A have gone up manifold. The present study is an attempt to fill such research gaps in the area of corporate returns from Indian acquisition cases.

Based on the research gap areas from the literature survey the objective of the study is as follows:

a. To analyze the liquidity, solvency, profitability performance of companies in the manufacturing sector before and after acquisition period.

b. To find out the time frame of value creation or to know in which year companies have M&A effect.

RESEARCH METHODOLOGY

HYPOTHESES

Based on the research objectives, the following research hypotheses are tested:

1H_o: *There is no difference in the liquidity position in manufacturing companies in India before and after the first year, second year, third year of acquisition.*

2H_o: *There is no difference in the solvency position in manufacturing companies in India before and after the first year, second year, third year of acquisition.*

3H_o: *There is no difference in the profitability position in manufacturing companies in India before and after the first year, second year, third year of acquisition.*

SOURCES OF DATA, PERIOD AND SCOPE OF STUDY, TOOLS AND TECHNIQUES USED IN THE STUDY

Data have been collected from secondary sources. The sources for collecting the acquisition deals and company annual reports for financial data are Centre for Monitoring Indian Economy (CMIE) Business Beacon Database and CMIE Prowess Database. The period of study is from 2000-01 to 2009-2010. This period is selected so as to evaluate the performance of the acquisition deals during 2003-04 to 2006-07. The data for these years are available. The study is confined to performance evaluation of manufacturing companies in India before and after acquisition. Following Leepsa and Mishra (2012a) and (2012b) the performance is evaluated using "paired two sample *t*-tests"

$$t = \frac{\bar{x} - \mu_0}{\frac{s}{\sqrt{n}}}$$

where,

s is the standard deviation of the sample and n is the sample size.

The degrees of freedom used in this test is n–1.

$\bar{x}_1$ is (Pre-M&A) and $\bar{x}_2$ is (Post-M&A) are sample statistics.

μ_1 and μ_2 are the population parameters.

Source: http://en.wikipedia.org/wiki/T_test.

All the financial performance parameters are adjusted for the industry average. Industry average represents the performance of companies that have not gone through M&A during the period under reference.

SAMPLE DESCRIPTION

The sample belongs to companies in the manufacturing sector in India. Acquisitions of companies in Banking, Financial, insurance Services Industries (BFSI) are excluded. Financial performance measures as mentioned earlier are not appropriate for firms in the BFSI sector. The sample is further filtered so that three year pre- and a three year post-acquisition data for both acquired and target companies are continuously available. The total number of sample firms has been taken based on ratios considering the availability of data for each acquirer and target and for all continuous year. For example, since some companies might not have debt, so for them debt ratio is not applicable.

Table 1 shows the sample of M&A companies as per different ratios of manufacturing companies.

Table 1: Sample of M&A Companies for Different Financial Ratios

Year	Liquidity			Solvency		Profitability	
	Current Ratio	Quick Ratio	Net Working Capital/Sales Ratio	Total Debt Ratio	Interest Coverage Ratio	Return on Capital Employed Ratio	Return on Net worth Ratio
2004	4	4	4	4	4	4	4
2005	4	4	3	5	3	5	5
2006	7	7	7	7	6	7	7
2007	7	7	7	7	6	7	7
Total Companies	22	22	21	23	19	23	23

Source: Centre for Monitoring Indian Economy Prowess Database

The acquirer company's performance has been adjusted by non acquirer companies or control firm performance. Control firm is selected based companies in each industry which has not gone for any M&A deals in the sample period. Ratios are calculated and median values are taken to adjust the same from the companies that have gone for acquisition deals.

The flow chart (Figure 1) describes at a glance the entire methodology for conducting the research:

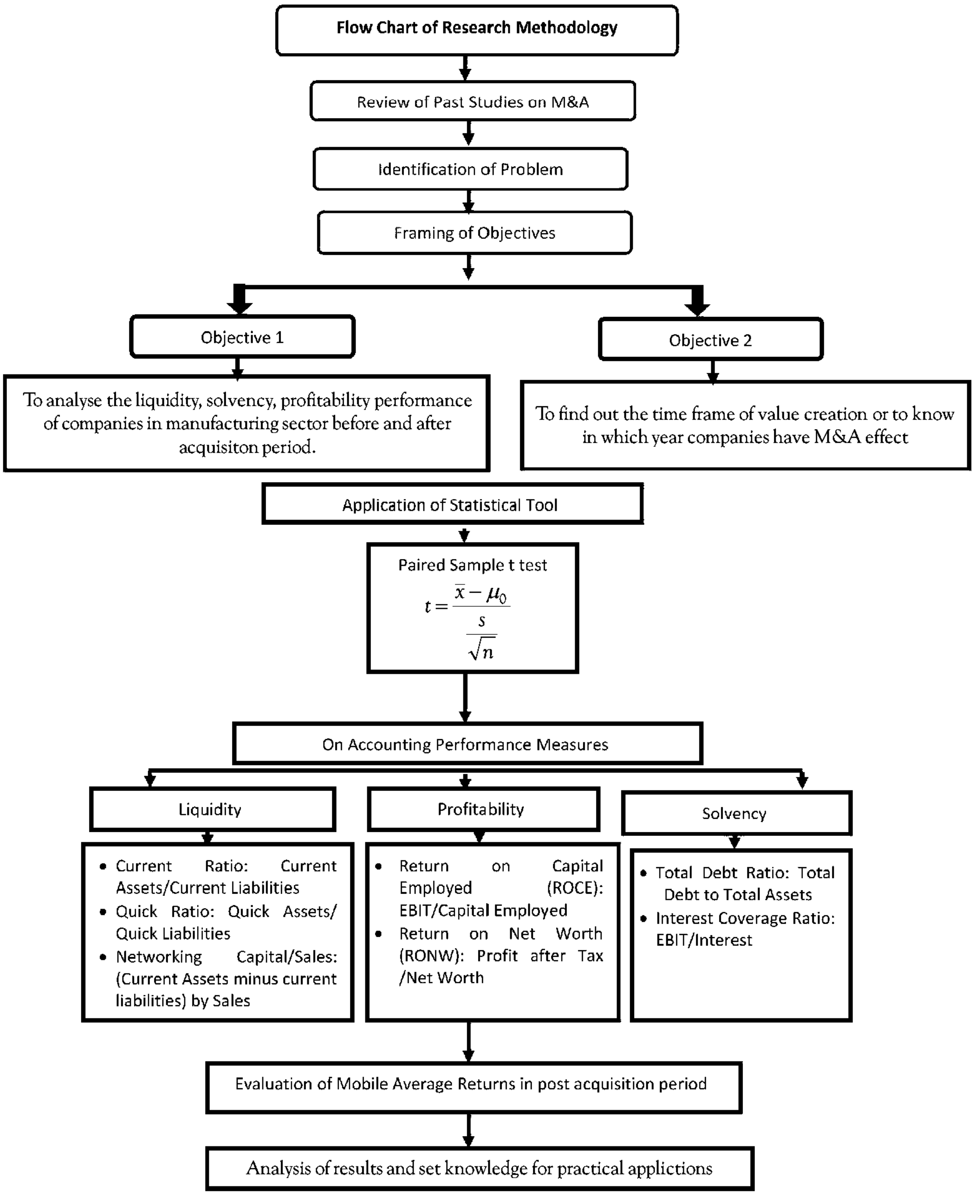
FINDINGS AND DISCUSSIONS OF RESULTS

The results of the study are discussed below in the following categories[2]:

- Paired-Sample *t*-test on liquidity Ratios.
  - CR of the Manufacturing Companies.
  - QR of the Manufacturing Companies.
  - Net Working Capital/Sales Ratio (NWCS) of the Manufacturing Companies.
- Paired-Sample *t*-test on Solvency ratios.
  - Total Debt Ratio (TDR) of the Manufacturing Companies.
  - Interest Coverage Ratio (ICR) of the Manufacturing Companies
- Paired-Sample *t*-test on Profitability Ratios.

[2] In the paired t test results, values are in the form are *t*-values of paired samples where * means the significance level is 0.1, ** means the significance level of 0.05, *** means the significance level of 0.01. T0 refers to acquisition event year; (T+1) (T+2) (T+3) refers to post acquisition first, second, third year ; similarly (T–1) (T–2) (T–3) refers to first, second, third year prior to acqusition year.

Figure 1: Flow Chart of Research Methodology



– Return on Capital Employed Ratio (ROCE) of the Manufacturing Companies.
– Return on Net worth Ratio (RONW) of the Manufacturing Companies

The current ratio is considered in various studies as a financial ratio to measure the firm's ability to meet its expenses or financial commitments in the short run. The

Table 2: Paired-Sample *t*-test on Current Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) and (T+2)	Average of (T+1), (T+2) and (T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	0.241	0.042	0.260	0.298	0.175	0.237	–6.443***	0.227	0.259
T–2	0.379	0.302	0.635	0.581	0.470	0.530	–3.862***	0.457	0.501
T–3	0.992	0.984	1.045	1.034	1.014	1.021	0.385	0.385	1.014
Average of (T–1) and (T–2)	0.39	0.242	0.59	0.543	0.463	0.533	–5.338***	0.503	0.540
Average of (T–1), (T–2) and (T–3)	0.937	0.914	1.079	1.042	0.995	1.014	–0.644	0.979	0.996

Source: Processed Data

current ratio has improved significantly in the post-acquisition period (Average of T0, (T+1)) compared to a year (T–1), (T–2), Average of (T–1) and (T–2).

Table 2 shows the paired *t*-test results on current ratio of manufacturing companies.

Table 3 shows the paired *t*-test results on Quick Ratio (QR) of manufacturing companies.

It has declined compared to pre-acquisition third year but the result is insignificant. In the average year of T_0, (T+1) the sample companies have current ratio more than 2:1 which indicates that due to M&A the liquidity of the company has improved.

Around 14 companies in the event year, 11 companies in the first year, 13 companies in the second year, 16 companies in the third year have a current ratio greater than 2:1 which is considered as acceptable limit. In the year following the acquisition, even if some companies faced problem inefficiently utilizing the current assets, as the time passed, those companies improved their capability to meet their current liabilities.

Some acquirers like Alchemist Ltd., Indoco Remedies Ltd., G T N Industries Ltd., Andhra Petrochemicals Ltd., R S W M Ltd. had a current ratio more than three in T+1 year which means their they

Table 3: Paired-Sample *t* Test on Quick Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) and (T+2)	Average of (T+1), (T+2) and (T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	–0.134	–0.814	0.085	0.960	–0.738	–0.606	–5.428***	–0.651	–0.562
T–2	0.354	–0.091	0.085	0.275	–0.020	0.077	–2.776**	0.129	0.165
T–3	0.949	0.899	0.953	0.960	0.926	0.937	0.546	0.934	0.941
Average of (T–1) and (T–2)	0.271	–0.44	–0.293	0.025	–0.434	–0.297	–4.221***	–0.194	–0.146
Average of (T–1), (T–2) and (T–3)	0.882	0.746	0.882	0.903	0.812	0.843	–0.184	0.839	0.855

Source: Processed Data

have so much cash on hand and management is not properly investing cash and thus actions must be taken regarding this.

Alchemist Ltd., Golden Tobacco Ltd., Tata Global Beverages Ltd., Tata Motors Ltd. had a current ratio of less than two before the acquisition event. After the acquisition liquidity has improved.

QR is a suitable measure of performance to access liquidity for industries that engage in long product production cycles, just as in manufacturing. The QR has improved significantly in the post-acquisition period (Average of T_0, (T+1)) compared to a year (T–1), (T–2), Average of (T–1) and (T–2). It has declined compared to third year prior to acquisition but the result is insignificant. The average QR in event year was 1.66 comparatively better than one year prior to the acquisition that was a QR of 1.64, which increased to 1.90 in the first year after acquisition year and gradually decreased to 1.84 and 1.79 in second and third year, respectively.

Some of the companies in the first year after acquisition have a quick ratio around 5:1 which may not be also a good sign as the liquid assets are kept idle, but most of the companies approximately 15 companies in the first year have a QR of 1:1. If compared with average of pre-three years with an average of the past three years, the QR has declined even though insignificant. It shows the liquidity

Table 4: Paired-Sample t Test on Net Working Capital/Sales Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) and (T+2)	Average of (T+1), (T+2) and (T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	–0.180	–0.666	1.070	–1.757*	–1.298	–1.562	–5.225***	–1.528	–1.708
T–2	0.945	0.924	0.950	0.822	0.936	0.900	0.605	0.938	0.911
T–3	0.929	0.891	0.929	0.671	0.908	0.836	0.328	0.328	0.862
Average of (T–1) and (T–2)	0.912	0.868	0.895	0.606	0.882	0.799	0.249	0.891	0.831
Average of (T–1), (T–2) and (T–3)	0.919	0.877	0.91	0.631	0.893	0.814	0.278	0.900	0.844

Source: Processed Data

positions of the companies have been improved immediately after acquisition but in the long run it has reduced. The significant results of the QR came when compared with one year prior acquisition with one year after acquisition. It means the liquidity position of the companies (QR) is influenced by acquisition event which is immediately seen in the post-acquisition year. The liquidity performance improves just after the event year.

Table 4 shows the paired t test results on Net working capital by sales ratio of manufacturing companies.

The liquidity performance of United Breweries Ltd. is poor. The QR in the two years before acquisition is below, one while the QR above two after two years of acquisition. The liquidity performance has continuously declined three years before the merger of companies like EI-Parry (India) Ltd., Golden Tobacco Ltd., Tata Global Beverages Ltd. which means that these companies must be finding difficulty in taking care of short term commitments. But after the acquisition these companies have improved the quick ratio which means acquisition has helped the companies in speeding the process of conversion of receivables into cash, and helping in covering the financial obligations. EID-Parry (India) Ltd. and Ranbaxy Laboratories Ltd. performed well in terms of QR in pre-three years. But in the acquisition

Table 5: Paired-Sample t Test on Total Debt Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) & (T+2)	Average of (T+1), (T+2) &(T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	–0.866	–1.761*	–2.688	–3.086	–2.296**	–2.749**	–144.014***	–2.600**	–2.494**
T–2	–0.722	–1.478**	–2.434	–2.830	–1.958*	–2.428**	–125.227***	–2.179**	–2.098**
T–3	0.679	–0.173	–0.90	–1.317	–0.475	–0.844	–95.188***	–0.327	–0.382
Average of (T–1)and (T–2)	–1.064	–1.731	–2.631	–3.002	–2.209**	–2.647**	–140.4***	–2.531**	–2.421**
Average of (T–1), (T–2) and (T–3)	0.125	–0.979	–1.971	–2.499	–1.456	-1.973*	–121.97***	–1.481	–1.488

Source: Processed Data

year when they combined with Coromandel International Ltd. and Zenotech Laboratories Ltd., respectively their performance deteriorated, but again in the event year in the post-acquisition three years the combined firm did well.

In the average of acquisition year and the subsequent first year the networking capital/sales ratio has improved significantly compared to one year prior to the acquisition. In the third year also the ratio has improved compared to one year prior to the acquisition.

Table 5 shows the paired t test results on debt ratio of manufacturing companies.

The debt ratio is a measuring tool to know the percentage of total assets funded by the creditors of the company. Superior debt ratio indicates that creditors have the largest share of money which is being utilized to make more profits. Acquisition has significant influence on total debt ratio which is reflected from the most of the significant results that came for this ratio compared to other ratios. The long term solvency is influenced by this ratio specifically after acquisition which can show whether the company will be solvent or bankrupt after the acquisition event. The debt burden has increased significantly in the acquisition year and all the three years after acquisition when compared to the three years before acquisition period. The companies might have borrowed more to finance the growth. It is

Table 6: Paired-Sample t Test on Interest Coverage Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) and (T+2)	Average of (T+1), (T+2) and (T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	–0.522	–1.361	–0.674	–1.024	–0.950	–1.331	–1.816**	–1.027	–1.377
T–2	–1.828**	–1.660	–0.858	–1.112	–1.250	–1.477	–1.873**	–1.454	–1.553
T–3	–1.790**	–1.673	–1.097	–1.175	–1.560	–1.579	–1.834**	–1.787**	–1.647
Average of (T–1)and (T–2)	–1.44	–1.555	–0.768	–1.07	–1.111	–1.414	–1.852**	–1.268	–1.482
Average of (T–1), (T–2) and (T–3)	–1.722	–1.619	–0.882	–1.109	–1.288	–1.485	–1.846**	–1.504	–1.559

Source: Processed Data

observed that acquisitions increase the debt/equity ratio specifically for the first two years. This implies that the company's margins could be affected due to irregularity in certain supply contracts of the target firms. The increase of debt by acquirers to finance the acquisition may put pressure on the target firm performance in post-M&A first and second year. But gradually when the company pays off its debt the acquisition can contribute positively to long-term.

In comparison of pre- and post-two years average, the debt burden of the combined firms decreased for the deals done by Indoco Remedies Ltd., Seshasayee Paper & Boards Ltd., Ranbaxy Laboratories Ltd. Around 11 companies have shown increased debt burden after the acquisition. Nine companies have shown no change in debt burden after the acquisition. When compared with one year before and after the acquisition the debt burden of the combined firm has increased in the acquisition year as well as in the post-acquisition year for deals done with EID-Parry (India) Ltd., English Indian Clays Ltd., Bajaj Hindustan Ltd.

Table 6 shows the paired t test results on interest coverage ratio of manufacturing companies.

The interest coverage ratio has improved significantly in the post-acquisition period. When the average of interest coverage ratio of acquisition year and first year after

Table 7: Paired-Sample t Test on Return on Capital Employed Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) and (T+2)	Average of (T+1), (T+2) and (T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	0.984	1.017	1.028	1.040	1.023	1.028	0.905	1.007	1.015
T–2	–0.170	–0.540	–0.483	–0.452	–0.512	–0.223	–0.613	–0.445	–0.446
T–3	0.843	–0.826	0.057	0.743	–0.535	1.415	0.286	0.864	0.991
Average of (T–1) and (T–2)	1.126	1.343	1.356	1.392	1.351	1.365	0.939	1.247	1.279
Average of (T–1), (T–2) and (T–3)	1.084	1.385	1.399	1.452	1.395	1.280	0.843	1.233	1.280

Source: Processed Data

acquisition is compared to first, second, third year prior to acquisitions the results show significant change. It has also increased in acquisition year and first and second year after acquisition compared to third year before acquisition. The ratio also shows improvement in acquisition year compared to first and second year after acquisition. The firm's ability to meet its payment of interest for debt previously borrowed has increased on average in the post-acquisition second and third years compared to pre-acquisition second and third years, respectively. The interest coverage ratio has substantially increased for the deal between Cadila Healthcare Ltd. and Zydus Wellness Ltd. in post-acquisition first year then declined and then again increased exceptionally in the post acquisition third year . The median interest coverage ratio in the three years before acquisition along with acquisition year and three years after the acquisition is 3.17, 4.64, 5.02 which indicates that the companies have improved their debt paying capacity by generating sufficient revenues to meet its fixed obligation or interest expenses.

The interest coverage ratio is significantly higher for the acquirers like Alchemist Ltd., Ranbaxy Laboratories Ltd., IPCA Laboratories Ltd. over the years compared to other companies but after the acquisition their debt paying capacity has reduced which is reflected from the decrease in the interest coverage ratio in the post-acquisition years.

Table 8: Paired-Sample *t*-Test on Return on Net worth Ratio of the Manufacturing Companies

Paired Variables	T_0	(T+1)	(T+2)	(T+3)	Average of (T+1) and (T+2)	Average of (T+1), (T+2) and (T+3)	Average of T_0, (T+1)	Average of T_0, (T+1), (T+2)	Average of T_0, (T+1), (T+2), (T+3)
T–1	–0.095	0.686	1.116	1.074	0.910	1.164	–0.737	0.537	1.146
T–2	–0.900	0.699	1.709	1.043	1.407	1.081	–2.010*	0.121	1.043
T–3	–1.319	–0.653	0.689	1.027	0.163	1.032	–2.379**	–0.752	0.977
Average of (T–1) and (T–2)	–0.404	0.736	1.392	1.059	1.100	1.127	–1.243	0.473	1.101
Average of (T–1), (T–2) and (T–3)	–1.194	–1.06	–0.981	1.023	0.985	1.097	–1.599	0.210	1.062

Source: Processed Data

In one-year prior to acquisition 11 acquirers have a higher interest coverage ratio than the target and eight targets have a better ratio than acquirer. Among them the interest coverage ratio of five deals or the combined firm has increased in the acquisition year for those acquirer who had better performance than target and six deals where the target had a better interest coverage ratio than the acquirer. Two target firms who had done well as standalone firms compared to acquirer when their combined performance decreased while six acquirers who performed well when the performance of standalone firms decreased as they combined with the target.

Table 7 shows the paired t test results on the return on capital employed ratio of manufacturing companies.

There is no considerable change in return on capital employed of the companies in the post-acquisition period. The acquirer companies do not earn positive significant returns after acquisitions may be because the company's performance may be affected by the target company profit earning capacity, the geographic location of the target company, payment methods which would have increased the cost compared to revenue earned. The poor-ROCE may be due to poor profit margin.

Table 8 shows the paired t-test results on Return on Net Worth Ratio of the manufacturing companies.

The profitability of the companies has improved in the acquisition year and one year after the acquisition when compared to the pre-acquisition period. However, there is significant improvement in the ratio when the post-acquisition period, i.e., Average of T_0, (T+1) as compared to (T–2), (T–3) years before acquisition. The results suggest that the impact of M&A on companies are reflected in the immediate years specifically the event year and the post M&A one year.

RECOMMENDATIONS FROM THE FINDINGS

For the acquirer which have poor current and quick ratio need to look into their assets or any equipments that are not frequently used by the firm. It would be better to sell them and bring cash to invest in some profitable opportunities. There may be such assets held by target firm, so it needs to be looked into. For improving the profitability the acquirer should update its customers by reaching its customers of the target firm or selecting a target that have a different location which would extend its market and give them a new source of revenue. If the post M&A solvency is poor, then the acquirer should utilize the source of cheap suppliers of the target company to meet long-term obligations. The main thing that to be noted is that the acquiring firm should be alert in the initial years, since the poor performance is in the initial years and then it improves. It is recommended therefore to make M&A efforts to fully integrate the activities of both acquirer and target as soon as possible to reap the M&A benefits.

LIMITATION OF STUDY

Like no other studies, this study has some inherent limitations. To begin with, the study is limited to the period of study that has taken only three years pre- and post-acquisition. Future studies can extend the number of years to five years to know the impact on long-term period and M&A effects on a longer time frame. The study is confined to the manufacturing sector. There is ample scope for performance evaluation in other sectors like service or financial sector. Since the study is conduced taking into account M&A deals from different years and from different companies from different industries, there might be variation in results if M&A from different industries are studied separately.

SUMMARY OF CONCLUSION; ACADEMIC AND MANAGERIAL IMPLICATIONS

A number of studies have been made to find out the impact of M&A on the company's performance. Different studies found different results, while some authors found the negative return after M&A event; other studies found positive gains after going for M&A deal. But limited studies, as far as a review of literature has been made, have worked for the duration during which the impact of the M&A is reflected based on different financial ratios. Empirical evidence from the literature suggest that in the long run the real impact of M&A on the company's performance cannot be reflected because there may be some external factors that have influenced the performance of companies. The present study made an attempt to find out up to which year after M&A the results are significant and found that the impact of M&A is mostly reflected in year of M&A event and one year post-M&A. Each and every acquisition is done with different motives. Some deals may be done for short run benefits while some are done for long run benefits. Generally companies acquire another firm for the long run benefits like economies of scale keeping costs low. This indicates that even if the companies do not gain in a short period of time, the acquisition will benefit in the long run. This may not be reflected in acquisition year or first year after acquisition. The results of the present study confirm with Andre *et al.* (2004) which found that mergers perform poorly in the long run (three years).

The finding of the study has various implications for different users which are discussed below:

MANAGERIAL IMPLICATIONS

As far as knowledge of literature is concerned, most of the studies have taken the pre- and post-M&A period into consideration ignoring the M&A event year. But this year would also have some effect since M&A would be perceived by investors as a chance of increasing future values. In this study of effect of M&A event year is therefore considered in apart from post M&A years. Another contribution of the study is that, mobile average returns in M&A performance studies are studied by Xiao and Tan (2007) and this paper deal with this matter and make a contribution to the academic literature on an area of the M&A methodology of the comparative small number of studies that have examined the M&A in a rising market like India.

ACADEMIC IMPLICATIONS

Competition from foreign firms, arrival of new technology, demanding attitude of customers create an uncertain environment at the market place. Managers look for strategies like M&A to cope with changing environments for survival and growth. In such situation, the managers must be aware of the period in which they would gain from strategies like M&A so that they would revise their strategies accordingly. Hence, in this direction this research has greater managerial implication and contributes to managerial practise in choosing between enhancing core competencies through internal growth or through inorganic growth.

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