

Is M&A Wealth Creation Vehicle for Business Houses in India? Case of the Tata Group of Companies

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The Indian researchers examined corporate performance using financial ratios to evaluate impact of M&A associated with an industry or a single company as a case study. This article deals with empirical study in the Indian context of M&A deals of a single Business House. It studies whether M&A have a positive impact on the corporate performance of the acquiring companies and on their shareholders wealth.

Introduction

The M&A activities in the world rose to unprecedented level. This reflects the powerful change force in the world economy. In fact this responded to the changes, which took place due to high level of technology changes, reduction in cost of communication and transportation that created international market, increased competition and emergence of new industries. Favorable economic, financial environment and deregulation of most of the economies also motivated mergers and takeovers. M&A was prevalent in India right from the post independence period, but due to Government regulations like Industrial Development and Regulation Act of 1951, MRTP Act, FERA Act only a very few M&A took place in India prior to 1990s. But policy of decontrol and liberalization coupled with globalization of the economy after 1980s, especially after liberalization in 1991 had exposed the corporate sector to severe domestic and global competition. In that context, Indian business houses started increasingly resorting to M&A as a means to growth. The business group companies namely the Tata, United Breweries, Reliance, Essar, Godrej, Bharti Enterprises, Aditya Birla, ITC, Wadia and Binani had resorted to M&A as a tool for corporate restructuring which included expansion, contractions, divestures, joint ventures and turnarounds.

The Tata Group had 126 M&A deals from April 1988 to March 2008 diverse in seven sectors like Information Systems and Communications, Engineering, Materials, Services, Energy, Consumer products and Chemicals. They were the first to go for cross border acquisition of Tetley in England, takeover of prestigious car brands of the world like Jaguar and Land Rover and highest valued deal by an Indian company of \$12 billion of Corus steel. The group's

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27 public listed enterprises have a combined market capitalization of around \$60 billion, which is the highest among Indian business houses, and a shareholder base of 3.2 million. The group's major companies are counted globally. Tata Chemicals is the world's second largest manufacturer of soda ash and Tata Communications is one of the world's largest wholesale voice carriers.

Literature Review

George Coontz (2004) found that merger or acquisitions in the 15 firm sample listed on the S&P 500 Index do not on average improve shareholder wealth of the acquiring firm rather it actually decreases it. Michail Pazarskis, Manthos Vogiatzoglou, Petros Christodoulou, and George Drogalas (2006) examined empirically the impact of M&A on the operating performance of M&A involved firms in Greece and found that there is strong evidence that the profitability of a firm decreased due to the M&A event. Pramod Mantravadi and A. Vidyadhar Reddy (2007) studied that type of industry, does seem to make a difference to the post-merger operating performance of acquiring firms. S. Vanitha and M. Selvam (2007) examined the financial performance of merged manufacturing companies and drew conclusion that the merging companies were taken over by companies with reputed and good management and therefore, it was possible for the merged firms to turn around successfully in due course. Carl B. McGowan and Zunaidah Sulong (2008) examined the effect of M&A completion announcements on the stock price behavior for two anchor banks in Malaysia and event study show that the M&A completion announcements are treated as positive information by the market.

Trends of Mergers and Acquisitions in India

Prior to 1991 there were only cases of Merging another companies and Being merged into another companies. Takeover cases started only in the year 1996 and then onwards this mode of M&A has gained importance. In the year 1997, Securities and Exchange Board of India (SEBI) introduced the "Substantial Acquisition of Shares and Takeovers, Regulations, 1997" with disclosure norms on takeovers. This made companies to disclose taking over ownership stake in the target company. The number of deals really picked up in the year 1999 with total of 1453 deals as compared to only 172 deals in 1998. There was a percentage change of almost 966% in 1999. The internet bubble had a negative impact which resulted in a decline of 22% in the number of deals in 2001. The years 2007 and 2008 saw decline in the deals by 2% and 24% respectively due to the global credit crises. The transactions of Being taken over recorded more than any other type of transactions with 736 deals in 2007. The acquiring and selling assets deals over the time has shown a decreasing trend from the year 2000 to 2008. The industry giants took over smaller companies in their operating industries. Few large companies took over smaller companies.

Starting with the year 1996, the sale of asset dominated the scene of M&A in India with value of Rs. 148030 million. Sale of asset generally is carried out to sell off businesses which becomes unprofitable for the company or if

the company wants cash for expansion of existing businesses. Mostly companies having more than one or many business operations running in different industries go for sale of asset. In the year 1997, transactions of companies being taken over were highest in comparison with other type of transactions, because of the revisions made in the takeover code by SEBI. The bidders preferred taking over the whole company rather than buying assets or part of the company. This pattern is observed throughout the period from 1997 to 2008. The deal values have increased at an unprecedented level from merely Rs. 206218 millions in the year 1996 to 9.41 billions at the end of year 2008. In 2006, the deal value of taking over ownership reached at its peak. A decline of 54% is noticed in the deal value similar to the decrease in the number of deals for 2007 and 2008. The global credit crisis was responsible for the decline in number and value of M&A deals in India for the year 2008.

Comparison of M&A Transactions of Business Groups in India

Tata is a rapidly growing Business Group based in India with significant international operations. Their international operations earn them around 61% of their total revenue. The group employs around 350,000 people worldwide. The Tata Group is the most diverse group in terms of its operations as compared to other business groups in India. They operate in seven major sectors with 102 companies in over 80 countries producing myriad type of products. There are 126 M&A deals recorded to their credit which is highest among all the business groups of India beginning from 1988 to 2008.

There are 25 companies in Automotive sector of Tata Group of Companies where Tata Motors is major acquirer. It can be seen that highest number of M&A deals are in the Consumer products sector which are 25 where Tata Tea and Tata Coffee are the major acquiring companies. The Automotive sector has 17 deals, followed by the Tata Power in the Energy sector with 16 deals. The Indian Hotel company also has been very aggressive with 15 deals which helped them expand geographical not only in India but also overseas. In the Communications sector the company Tata Communications is the major acquirer having majority of cross border acquisitions. This helped them expand globally and tap new emerging markets. On the other hand Tata Consultancy Services, an IT major in India has been the company with maximum number of acquisitions in the IT business sector area of the Tata group. The dominant player in the Chemical sector is Tata Chemical with 5 M&A deals, and Rallis India with 3 deals. Tata Steel is also helping the Tata Group to expand globally and create wealth which became the sixth largest steel maker in the world after it acquired Corus.

Methodology

The study examines the impact of M&A on Corporate performance and Shareholders wealth. Twelve acquiring companies of the Tata Group are taken as sample for the period 1996 to 2008 and source of data is CMIE Prowess. The 't-Test: Paired Two Sample for Means' and Cumulative Abnormal Returns (CAR) are used for analysis

Hypotheses

In order to test the validity of the null hypothesis framed for the objective of impact on Corporate performance, i.e.

H_1 : There is no improvement in Profitability, Operational Efficiency and Asset Utilization Capacity, Liquidity and Solvency of the companies from M&A

The Financial and Operating Performance of the 12 acquiring companies of Tata group Pre and Post of M&A event have been analyzed with the help of nine Financial Accounting ratios. They are classified into three categories, which are Profitability, Operational Efficiency and Asset Utilization, and Liquidity and Solvency. Under Profitability, the ratios are Operating profit Margin (OPM), Net profit Margin (NPM), Return on net worth (RONW) and Return on capital employed (ROCE). In Operational Efficiency and Asset Utilization the ratios are Asset Turnover Ratio (ATR) and Return on Total Assets (ROTA). For Liquidity and Solvency the ratios are Quick Ratio (QR), Current Ratio (CR) and Debt-equity ratio (DE).

In order to test the validity of the null hypothesis framed for the objective of impact on shareholders wealth, i.e.

H_2 : Cumulative Abnormal Return has not been positive Post M announcement.

The adjusted market model has been used to calculate the abnormal returns. Abnormal return (AR) is calculated as the difference between a certain stock's return ($R_{i,t}$) on day t , and the market return ($R_{m,t}$) on day t .

$$\begin{aligned} &\text{Adjusted Market Model} \\ &AR_{i,t} = R_{i,t} - R_{m,t} \end{aligned} \quad (1)$$

The Cumulative Abnormal Returns (CAR) is the sum of the abnormal returns, that is,

$$CAR_s = \sum_{t=K}^L AR_{i,t} \quad (2)$$

Where K to L are days surrounding the M&A announcement.

CAR is calculated for the distinct window periods for Pre announcement period and Post announcement period. Three Event Windows are selected in pre-announcement period viz. $t-5$ (5 days before announcement date), $t-10$ (10 days before announcement date) and $t-20$ (20 days before announcement date). Similarly, three Event Windows are selected for post-announcement period viz. $t+5$ (5 days after announcement date), $t+10$ (10 days after announcement date) and $t+20$ (20 days after announcement date). The CAR calculated for Pre announcement periods are compared to the respective Post announcements periods to examine the impact of M&A on shareholders wealth of respective acquiring companies.

Corporate Performance of Tata Group of Companies after M&A

The Table 1 discloses the Profitability ratios of sample acquiring companies during Pre and Post M&A period. In the test of Operating Profit Margin (OPM)

Table 1: Profitability ratios of The Tata Group Of Companies

Name of Company	Ratios	Mean		% Change	t statistics	p value
		Pre	Post			
TRF	ATR	107.6602	105.0005	-2.47	0.0724	0.9489
	OPM	9.3867 (3.92)	7.2933 (4.81)	-22.30	1.8303 (NS)	0.2085
	NPM	4.0167 (2.899)	2.9900 (3.611)	-25.56	0.8268 (NS)	0.4953
TRF	RONW	9.59 (5.0372)	7.7333 (12.7701)	-19.36	0.2913 (NS)	0.7983
	ROCE	34.2204 (7.6584)	27.9717 (20.8514)	-18.26	0.8193 (NS)	0.4987
	OPM	5.6767 (1.4814)	4.5533 (0.3113)	-19.79	1.4226 (NS)	0.2908
	NPM	0.8233 (0.318)	2.5233 (0.297)	206.48	-4.7848**	0.0410
Voltas India	RONW	-6.9733 (3.8123)	6.7767 (10.9582)	-197.18	-3.3123*	0.0803
	ROCE	16.7096 (5.4082)	18.5377 (2.7946)	10.94	-0.3913 (NS)	0.7334
	OPM	4.9667 (6.3751)	11.4133 (1.5237)	129.80	-1.4516 (NS)	0.2837
	NPM	-1.94 (6.375)	6.2833 (1.527)	-423.88	-1.9540 (NS)	0.1899
Rallis India	RONW	-60.1067 (30.1592)	11.51 (10.3215)	-119.15	-4.6935**	0.0425
	ROCE	7.2098 (32.5713)	21.26857 (0.3391)	195	-0.7399 (NS)	0.5364
	OPM	25.6567 (5.0849)	20.53 (2.8406)	-19.98	1.1325 (NS)	0.3749
	NPM	8.79 (1.1930)	10.86 (3.0067)	23.55	-0.9049 (NS)	0.4610
Tata Chemicals	RONW	8.34 (2.7442)	23.9433 (6.0351)	176.30	-4.1887*	0.0525
	ROCE	16.8508 (2.1368)	18.4594 (2.8044)	9.55	-0.7398 (NS)	0.5365
	OPM	21.7133 (3.78)	17.5133 (2.72)	-19.34	1.1269 (NS)	0.3768
	NPM	11.1433 (2.982)	7.8933 (3.670)	-29.17	0.8515 (NS)	0.4842
Tata Tea	RONW	25.3333 (5.9273)	7.67333 (2.4135)	-69.71	3.6714*	0.0668
	ROCE	29.2588 (4.9298)	13.30~7 (1.4014)	-54.53	4.6659**	0.0430
	OPM	33.7133 (1.0225)	29.5367 (1.4025)	-12.40	2.9843*	0.0963
	NPM	13.5933 (1.022)	11.0667 (1.402)	-18.59	2.5873 (NS)	0.1225
Tata Power	RONW	11.1133 (1.2375)	11.7333 (0.2122)	5.58	-0.8277 (NS)	0.4949

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	ROCE	12.8343 (1.0703)	14.5205 (0.9708).	13.14	-9.8484**	0.0102
Indian Hotels	OPM	29.2133 (4.085)	27:73 (3.111)	-5.08	0.3784 (NS)	0.7415
	NPM	(8.496)	(3.294)	-36.68	0.6068 (NS)	0.6057
	RONW	8.1633 (5.9809)	7 (5.4900)	-14.25	0.1780 (NS)	0.8751
	ROCE	11.7799 (2.8707)	10.1291 (2.8240)	-14.01	0.5070 (NS)	0.6625
Tata Communications	OPM	31.19 (1.9727)	20.7833 (9.7381)	-33.37	2.2580 (NS)	0.1525
	NPM	19.3033 (2.898)	6.4667 (9.953)	-66.50	2.8805 (NS)	0.1023
	RONW	21.5433 (5.9788)	3.7133 (7.99[8)	-82.76	5.3340**	0.0334
	ROCE	34.4007 (10.2516)	10.6837 (6.7302)	-68.94	3.7625*	0.0639
Tata Motors	OPM	8.23 (2.1215)	10.7767 (0.3512)	30.94'	-2.3447 (NS)	0.1437
	NPM	-1.3133 (4.463)	6.0333 (0.2122)	-559.39	-2.8315 (NS)	0.1054
	RONW	-2.98 (12.5351)	31.48 (0.6465),	-1156.38	-4.5371 **	0.0453
	ROCE	9.821242 (11.6664)	28.4764 (0.7942)	189.95	-2.9712*	0.0970
Tata Investment Corporation	OPM	93.1167 (2.8007)	95.8867 (0.5301)	2.97	-1.4527 (NS)	0.2835
	NPM	82.4933 (4.238)	90.8733 (3.7886)	10.16	-1.9054 (NS)	0.1970
	RONW	16.27 (4.4809)	27.2533 (3.0282)	67.51	-2.5961 (NS)	0.1218
	ROCE	16.1977 (3.2588)	26.01571 (2.0124)	60.61	-3.2303*	0.0839
Tata Coffee	OPM	17.03 (2.3177)	18.3633 (1.8794)	7.83	-0.5505 (NS)	0.6373
	NPM	8.4133 (3.182)	9.61 (9.398)	14.22	-0.1668 (NS)	0.8829
	RONW	7.2667 (3.8279)	10.9133 (1.8005)	50.18	-1.6786 (NS)	0.2352
	ROCE	15.2717 (2.2720)	11.21236 (2.3547)	-26.58	1.6938 (NS)	0.2324
Tata Steel	OPM	21.54 (6.7621)	24.8367 (6.2689)'	15.30	-0.4523 (NS)	0.6954
	NPM	8.6533 (5.9387)	13.2033 (4.0609)	52.58	-0.8069 (NS)	0.5044
	RONW	23.5267 (19.1236)	46.8367 (17.1250)	99.08	-2.8614 (NS)	0.1035
	ROCE	24.3366	29.9116	22.91 (14.6321)	1.0046 (13.8046)	0.4209 (NS)

- Note:** 1. Figures given in the parenthesis indicate standard deviation
 2. *** Significant at the 0.01 level, ** Significant at the 0.05 level, * Significant at the 0.1 level.
 3. NS-Not Significant

ratio, four out of the twelve companies were able to successfully achieve a growth in their OPM after M&A. They are Rallis India, Tata Coffee, Tata Motors, Tata Investment Corporation, and Tata Steel showing a percentage increase of 129.8%, 7.8%, 30.94%, 2.97%, and 15.3% respectively. TRF, Tata Power, Voltas India, Indian Hotels, Tata Communications and Tata Chemicals, showed a decline of 22.03%, 12.39%, 19.79%, 5.08%, 33.37% and 19.98% for its post period mean. Only one result was significant that of Tata Power with t-statistic value of 2.9843 at 1% level of significance. The Chemical Company Rallis India had a Pre merger mean of 4.9667 and Post merger mean of 11.4133 showing an increase of 129.8%. Major decrease came from Tata Communications of 33.37% in its mean OPM of Post M&A period. The t-test brought out the fact that Tata Power was the only one among the sample companies which showed a statistically significant decline in OPM after acquisitions. Indicating that the impact of M&A on other company's OPM was negligible which can be noticed from the 't statistics' values. Higher the 't statistics' value more is the impact of M&A.

In the test of Net Profit Margin (NPM), seven companies showed positive results for the post period. The companies being Rallis India, Voltas India, Tata Coffee, Tata Motors, Tata Investment Corporation, Tata Steel and Tata Chemicals which showed 423.89%, 206.48%, 14.22%, 559.39%, 10.16%, 52.58% and 23.55% increase in their post mean. Only one result of NPM was significant like that of OPM result. Voltas showed significant increase at 5% level of significance. Whereas again the least performer was Tata Communications with a 66% decrease in its NPM in the Post period over the Pre period. Largest variations in the ratio in the pre period was seen in case of Rallis India with 6.375 and in Post period Tata Communications recorded the highest variation of 9.953. The Rallis India was able to turn the NPM from negative (-1.94) to positive (6.28) by overcoming losses and earning profits. It recorded the second highest positive percentage change in the mean NPM among all the sample companies. Highest positive change came from Tata Motors. Voltas India improved its NPM significantly with an increase of 206.47% in the mean NPM(2.5233) in the post period compared to that of pre period mean(0.8233) with a t statistic value of -4.7848, and $p=0.008 < 0.05$ and hence significance at 5% level. Largest variations in the ratio in the Pre period was seen in case of Rallis India with 6.38 and in Post period Tata Communications recorded the highest variation of 9.95. The high variation in Post period of Tata Communications indicates that major changes in its NPM came after the acquisition as its Pre period standard deviation is only 2.9.

It can be noted that the eight companies showed an improvement in their Return on Net Worth ratio (RONW) in the Post period indicating more net worth was added through M&A. Tata Power, Rallis India, Voltas India, Tata Coffee, Tata Motors, Tata Investment Corporation, Tata Steel and Tata Chemicals showed improvement in the Post period over their Pre period performance recording a percentage change of 5.58%, 50.18%, 1156.38%, 67.51%, 99.08% and 176.3% respectively. Whereas TRF, Tata Tea, Indian Hotels and Tata Communications had recorded decline in their Post period mean RONW ratio by 19.36%, 69.71%, 14.25%, and 82.76%. There were five

statistical significant results of which Rallis India and Tata Motors showed significant increase at 5% level and Voltas India at 10% level of significance. Whereas Tata Tea and Tata Communications showed significant decrease at 10% and 5% level of significance respectively. The major decrease was noticed for Tata Communications. The mean RONW of Tata Tea declined from 25.33 % in the Pre period to 7.67 % in the Post period, which showed a decline by -82.76 % and the difference is significant at 10% level (t value=3.6714, $p < 0.10$). Highest percentage change was noticed in the RONW value of Tata Motors of 1156.38% from Pre mean of mere -2.98% to 31.48 % during the Post period. Highest variation in the ratio for the Pre period is seen in the Rallis India with standard deviation of 30.16 whereas highest standard deviation in the Post period has been being recorded by Tata Steel of 17.13.

In the test of Return on capital employed (ROCE), seven companies showed improvement for the post period. Tata Power, Rallis India, Voltas India, Tata Motors, Tata Investment Corporation, Tata Steel and Tata Chemicals showed increase in their mean ROCE ratio in the post period by 13%, 195%, 11%, 189%, 60%, 23% and 9.5% respectively. Whereas the remaining five companies TRF, Tata Tea, Indian Hotels, Tata Communications and Tata Coffee showed a decline of 18.26%, 54.53%, 14.01%, 68.94%, and 26.58% respectively. Tata Communications decreased its mean ROCE after acquisition by over 68% which is also statistically significant. Significant fall is also noticed in Tata Tea ROCE with over 54% decline in the post M&A period over the pre M&A period with t value of 4.6659 significant at 5 % level. It is noticed that Tata Power recorded increase in its ROCE by 13% which was significant at 5% level. The other significant increases are noticed in the ROCE of Tata Motors and Tata Investment Corporation whereas the t-values of other companies which were insignificant at the required probability levels indicates that the increase or decrease in the ROCE between pre and post M&A period is quite negligible. In other words, it can be said that the increase or decrease in ROCE is not related to M&A.

The Table 2 shows the impact of M&A on Operational Efficiency and Asset Utilization of the Sample Companies of Tata Group of Companies. In the test of Asset Turnover Ratio (ATR), six companies have shown a decline in the ratio indicating a decline in their Operating efficiency. TRF, Tata Tea, Rallis India, Indian Hotels, Tata Communications and Tata Coffee showed a decline in their mean ratio of Post period over the mean of Pre period by 2.47%, 24.67%, 0.72%, 4.21%, 29.68% and 25.77% respectively.

The highest decrease was noticed in Tata Communications of 29.67% but not statistically significant. Both the beverage companies of the Tata group, Tata Tea and Tata Coffee noticed a statistical significant fall in their mean ATR. The finance company of the Tata group, Tata Investment Corporation recorded the highest percentage increase of 51.92% in its ATR with pre mean of 16.4762 and post mean of 25.0314 showing significance at 10% level. Also least variations are seen in its ratio as compared to other sample companies. Six companies showed an increase in the mean ratio for the post period and they are Tata Power, Voltas India, Tata Motors, Tata

Table 2: Operational efficiency and asset utilization ratios

Name of Company	Ratios	Mean		% Change	t statistics	p value
		Pre	Post			
TRF	ATR	107.6602 (50.6431)	105.0005 (17.7277)	-2.47	0.0724 (NS)	0.9489
	ROTA	7.7453 (1.2523)	6.8521 (5.2876)	-11.53	0.3821 (NS)	0.7392
Voltas India	ATR	123.9803 (21.3638)	140.2306 (2.8079)	13.11	-1.4873 (NS)	0.2753
	ROTA	5.3467 (2.7114)	5.5529 (0.5331)	3.86	-0.1101 (NS)	0.9224
Rallis India	ATR	129.1878 (7.7858)	128.2569 (7.8826)	-0.72	0.2023 (NS)	0.8584
	ROTA	3.1416 (12.7097)	11.1035 (1.6510)	253.43	-0.9605 (NS)	0.4382
Tata Chemicals	ATR	16.4762 (2.7772)	25.0314 (1.7208)	51.92	-3.2948*	0.0811
	ROTA	15.7146 (2.6678)	24.0059 (1.7702)	52.76	-3.2413*	0.0834
Tata Tea	ATR	96.4422 (7.2119)	72.6507 (10.1171)	-24.67	6.7903**	0.0210
	ROTA	20.0932 (3.8294)	10.1038 (1.9147)	-49.72	3.0704*	0.0917
Tata Power	ATR	37.7053 (2.4533)	54.3092 (8.4047)	44.04	-2.9440*	0.0986
	ROTA	11.0971 (0.6962)	12.1275 (1.0511)	9.29	-3.2975*	0.0801
Indian Hotels	ATR	34.8452 (6.9820)	33.3794 (7.9429)	-4.21	0.17330 (NS)	0.8784
	ROTA	8.9500 (3.6716)	7.3239 (2.95~3)	-18.17	0.4335 (NS)	0.7069
Tata Communications	ATR	72.3659 (12.9052)	50.8890 (16.3517)	-29.68	1.2917(NS)	0.3256
	ROTA	23.1332 (5.8661)	6.5560 (5.9763)	-71.66	4.0566*	0.0557
Tata Motors	ATR	112.2797 (23.6152)	170.2773 (11.7374)	51.65	-7.4516**	0.0175
	ROTA	4.4167 (5.0217)	15.5818 (1.6475)	252.79	-5.7150**	0.0293
Tata Investment Corporation	ATR	68.5119 (5.3343)	50.8555 (8.1047)	-25.77	2.4655 (NS)	0.1326
	ROTA	9.9199 (1.4612)	8.0815 (1.4562)	-18.53	1.1389 (NS)	0.3728
Tata Coffee	ATR	53.5282 (15.2101)	67.4825 (17.4555)	26.07	-0.8070 (NS)	0.5044
	ROTA	10.7797 (1.3548)	11.2690 (0.9056)	4.54	-1.0255 (NS)	0.4130
Tata Steel	ATR	74.3517 (11.5783)	87.3604 (28.7468)	17.5	-0.7147 (NS)	0.5490
	ROTA	12.6793 (7.3796)	18.9041 (6.9170)	49.09	-0.7985 (NS)	0.5083

Note: 1. Figures given in the parenthesis indicate standard deviation

2. *** Significant at the 0.01 level, ** Significant at the 0.05 level, * Significant at the 0.1 level.

3. NS-Not Significant

Investment Corporation, Tata Steel, and Tata Chemicals showing a percentage change of 44.04%, 13.11%, 51.65%, 51.95%, 17.5% and 26.07% respectively.

The test of Return on Total Assets (ROTA), seven companies increased their mean ratio in the post period. Tata Power, Rallis India, Voltas India, Tata Motors, Tata Investment Corporation, Tata Steel, and Tata Chemicals showed an increase in the post mean ratio by 9.29%, 253.43%, 3.86%, 253.43%, 52.76%, 49.09% and 4.5% respectively. Whereas TRF, Tata Tea, Indian Hotels, Tata Communications and Tata Coffee showed decline by 11.53%, 49.72%, 18.17%, 71.66 % and 18.53% respectively. And five values were statistically significant which are Tata Tea, Tata Power, Tata Communications, Tata Investment Corporation showed significance at 10% level and Tata Motors Ltd at 5% level of significance. The five companies which showed a decline in their ROTA indicates under utilization of their assets. Tata Communications showed the highest decrease of 71.66% with the t statistic value of 4.0566 significant at 10% level. Tata Tea stood second in decrease with 49.71% showing statistical significance at 10% level.

The Table 3 shows impact of M&A on the Liquidity and Solvency Ratios of the acquiring Tata Group of Companies. The Quick Ratio (QR) test showed an increase for six companies in the post period and they are TRF, Voltas India, Indian Hotels, Tata Coffee, Tata Motors, Tata Steel, and Tata Chemicals

Table 3: Liquidity and solvency ratios

Name of Company	Ratios	Mean Pre	Mean Post	% Change	t statistics	p value
TRF	QR	0.4467 (0.1069)	0.6667 (0.0723)	49.25	-2.3677 (NS)	0.1415
	CR	1.1433 (0.0153)	1.2233 (0.0493)	7	-2.6186 (NS)	0.1201
	DE	1.3567 (0.2650)	0.5667 (0.4665)	-58.23	2.0962 (NS)	0.1710
Voltas India	QR	0.43 (0.1044)	0.6967 (0.0306)	62.02	-4.3579***	0.0488
	CR	1.033 (0.0802)	1.1733 (0.0451)	15.79	-2.4400 (NS)	0.1348
	DE	1.29 (0.0624)	0.5567 (0.0681)	-56.85	14.1715***	0.0049
Rallis India	QR	0.7 (0.0954)	0.5333 (0.0473)	~23.81	2.8537 (NS)	0.1040
	CR	1.33 (0.1587)	1.32 (0.1015)	-0.75	0.2847 (NS)	0.8026
	DE	4.9967 (3.1550)	0.6233 (0.~278)	-87.53	2.1486 (NS)	0.1647
Tata Chemicals	QR	0.3767 (0.0862)	0.4133 (0.0874)	9.73	-0.4308 (NS)	0.7086
	CR	1.34 (0.1609)	0.83 (0.1082)	-38.06	3.7362*	0.0648
	DE	0.5267 (0.1617)	0.9533 (0.3121)	81.01	-1.6820 (NS)	0.2346

Contd...

<i>Contd...</i>						
	QR	0.7633 (0.2318)	0.55 (0.0985)	-27.95	1.3806 (NS)	0.3014
Tata Tea	CR	1.4633 (0.2335)	1.2967 (0.1818)	-11.39	0.7271 (NS)	0.5428
	DE	0.7167 (0.1724)	.0.7133 (0.8116)	-0.47	0.0059 (NS)	0.9958
Tata Power	QR	0.7667 (0.2768)	0.5667 (0.0757)	-26.09	1.2901 (NS)	0.3261
	CR	1.35 (0.3251)	1.1733 (0.0404)	-13.09	1.0500 (NS)	0.4039
	DE	0.7133 (0.0379)	0.5767 (0.1210)	-19.16	2.7456 (NS)	0.1110
Indian Hotels	QR	0.5733 (0.1193)	1.2967 (0.3808)	126.16	-2.5070 (NS)	0.1290
	CR	1.1733 (0.2875)	1.52 (0.3005)	29.54	-1.5172 (NS)	0.2685
	DE	0.78 (0.4993)	1.4067 (0.5658)	80.34	-1.0258 (NS)	0.4129
Tata Communications	QR	1.63 (0.1706)	0.57 (0.4854)	-65.03	5.6154**	0.0303
	CR	2.1667 (0.2250)	0.95 (0.7454)	-56.15	2.6862 (NS)	0.1151
	DE	0.0567 (0.0551)	0.29 (0.2571)	411.76	-1.8596 (NS)	0.2040
Tata Motors	QR	0.34 (0.0557)	0.3533 (0.1012)	3.92	-0.2097 (NS)	0.8534
	CR	0.7733 (0.0231)	0.6633 (0.0681)	-14.22	4.1576*	0.0532
	DE	0.9267 (0.3502)	0.6967 (0.2230)	-24.82	0.7338 (NS)	0.5394
Tata Investment Corporation	QR	1.8167 (2.2902)	0.2267 (0.2250)	-87.53	1.3256 (NS)	0.3161
	CR	2.1267 (2.8253)	0.2433 (0.2194)	-88.56	1.2466 (NS)	0.3388
	DE	0.0767 (0.0404)	0.0033 (0.0058)	-95.65	3.3550*	0.0785
Tata Coffee	QR	0.33 (0.04)	0.5733 (0.2290)	73.73	-1.8918 (NS)	0.1991
	CR	1.22 (0.0458)	1.3833 (0.2627)	13.388	-1.2261 (NS)	0.3449
	DE	0.4833 (0.0814)	2.07 (1.1432)	328.28	-2.3005 (NS)	0.1481
Tata Steel	QR	0.2567 (0.0513)	0.85 (0.4952)	231.17	-1.9518 (NS)	0.1902
	CR	0.6033 (0.0929)	1.3667 (0.4751)	126.52	-2.4466 (NS)	0.1342
	DE	1.36 (0.6065)	0.9533 (0.7295)	-29.90	0.6391 (NS)	0.5882

Note: 1. Figures given in the parenthesis indicate standard deviation

2. *** Significant at the 0.01 level, ** Significant at the 0.05 level, * Significant at the 0.1 level.

3. NS-Not Significant

showing a percentage change of 49.25%, 62.02%, 126.16%, 73.74%, 3.92%, 231.17% and 9.73% respectively. Whereas Tata Power, Tata Tea, Rallis India, Tata Communications and Tata Investment Corporation showed a decline in their mean ratio of post period over the mean of pre period by 26.09%, 23.81%, 65.03% and 87.53% respectively. In all only two results were statistically significant, which are Voltas India and Tata Communications at 5% level of significance. The Indian Hotel improved its QR showing highest percentage change among other Tata Group of companies. The decline indicates that there is more debt incurred in post M&A period and the increase in the QR is attributed to the fact that acquired companies had a better quick ratio and being added to the acquiring sample companies.

For Current Ratio (CR) test, the five companies which improved their ratio in the post period are TRF, Voltas India, Indian Hotels, Tata Coffee and Tata Steel by 7%, 15.79%, 29.55%, 13.38% and 126.52% respectively. Whereas Tata Tea, Tata Power, Rallis India, Tata Communications, Tata Motors, Tata Investment Corporation and Tata Chemicals showed decrease in values in the post period as compared to the pre period by 11.39%, 13.09%, 56.15%, 14.22%, 88.565 and 38.06% respectively. Again like QR two significant values were obtained for Tata Motors and Tata Chemicals at 10% level of significance. The increase is attributed to the event of current assets of acquired companies being added to the acquiring sample companies. The other companies had negligible changes in their CR.

The Debt Equity ratio (DE) test revealed that eight companies reduced their debt in the post M&A period. TRF, Tata Tea, Tata Power, Rallis India, Voltas India, Tata Motors, Tata Investment Corporation and Tata Steel reduced their DE by 58.23%, 0.47%, 19.16%, 87.53%, 56.85%, 24.82%, 95.65% and 29.92% respectively. This indicates that the funds brought in from the acquired companies were able to meet the debt claims. Indian Hotels, Tata Communications, Tata Coffee, and Tata Chemicals increased their DE by 80.34%, 411.76%, 328.28% and 81.01% respectively as these companies added long term debt to their balance sheets. It indicates that the acquisitions were financed by debt and the acquiring companies already had debt in their balance sheets. Also it is inferred that the target companies had considerable debt in their balance sheets. The results for only two companies, Voltas India and Tata Investment Corporation were significant at 10% and 1% level of significance respectively. Implying, that M&A had a significant impact on their DE and thereby an impact on their overall solvency.

Table 4 summarizes the significant and non significant results. A total of 108 't statistics' values were obtained of which only 28 were significant and 80 were insignificant. Out of the 28 values, 13 were of profitability, 9 of operational efficiency and asset utilization and 6 of liquidity and solvency parameters.

TRF, Indian Hotels, Tata Coffee and Tata Steel did not obtained any significant variables in any of the parameter indicating that M&A did not have significant impact on their Corporate performance. Tata Communications and Tata Tea obtained significant values for their decrease in their respective variables indicating that the acquisitions made by them had a negative impact on

Table 4: Consolidated T-Statistics values of the ratios

Name of Company	Profitability			Operational Efficiency and Asset Utilization			Liquidity and Solvency		
	OPM	NPM	RONW	ROCE	AT	ROTA	OR	CR	DE
TRF	NS	NS	NS	NS	NS	NS	NS	NS	NS
Voltas India	NS	S**	S*	NS	NS	NS	S**	NS	S***
Rallis India	NS	NS	S**	NS	NS	NS	NS	NS	NS
Tata Chemicals	NS	NS	S*	NS	NS	NS	NS	S*	NS
Tata Tea	NS	NS	S*	S**	S**	S*	NS	NS	NS
Tata Power	S*	NS	NS	S**	S*	S*	NS	NS	NS
Indian Hotels	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tata Communications	NS	NS	S**	S*	NS	S*	S**	NS	NS
Tata Motors	NS	NS	S**	S*	S**	S**	NS	S*	NS
Tata Investment Corporation	NS	NS	NS	S*	S*	S*	NS	NS	S*
Tata Coffee	NS	NS	NS	NS	NS	NS	NS	NS	NS
Tata Steel	NS	NS	NS	NS	NS	NS	NS	NS	NS

Source: Compilation from Table 5, 6 and 7

Note: 1. *** Significant at the 0.01 level, ** Significant at the 0.05 level, * Significant at the 0.1 level.

2. NS-Not Significant

their corporate performance. Tata Tea recorded significant values for RONW, ROCE, ATR and ROTA. Ironically, the four variables were significant for the decrease in their value indicating that the acquisition negatively impacted its profitability, operating efficiency, asset utilization and liquidity. Indian Hotels which is a major part of the hotel and tourism sector of operations for Tata group achieved improvement only in its liquidity ratios. There was a negative impact seen on the variables of profitability, operating efficiency, asset utilization and solvency. Tata Power obtained significant values for improvement of ROCE, ATR, and ROTA, whereas significance obtained for OPM was for its decrease. Tata Chemicals Ltd achieved significant values for RONW and CR variable. The RONW showed an increase whereas CR showed a decrease.

It can be inferred that the M&A made by the company impacted its profitability and liquidity. Tata Investment Corporation achieved significant growth in its one profitability ratio and two asset ratios and obtained better solvency post acquisition. Only liquidity ratios showed a decline. Tata Communications was the worst performer as it showed decline in all the ratios and debt levels also increased in the post period. Tata Steel was the company which benefited the most from the acquisition as all its variables showed an improvement in their values. This indicates a positive impact of acquisition.

Impact of M&A on Shareholders Wealth

The results of Pre and Post period of CAR are analyzed in order to examine the impact of M&A on the Shareholders wealth of the twelve acquiring Tata group of companies. The Table 5 depicts that Tata Motors and Tata Steel were the only two companies which did not have any negative CAR values for all the post announcement window periods signifying that the companies were successful in adding value to their Shareholders wealth.

The 5 days window period is the shortest window period of the study. It shows the immediate reaction of the shareholders to the announcement of the M&A. Out of the twelve companies' nine companies had negative returns in the Post period. The acquisitions made by Tata Communication, Tata Motors and Tata Steel got a positive response and led to increase in the returns for their Shareholders in the Post period. It is observed with the aid of standard deviations calculated for the respective companies that the volatility is considerably less in the Post period as compared to the Pre period.

Table 5: CAR during Pre and Post announcement period for the window periods

Name of Company	Pre Announcement period			Post Announcement period		
TRF	15.02 (3.508)	20.38 (4.368)	9.85 (5.164)	-1.89 (2.643)	-9.52 (2.336)	-11.79 (2.059)
Tata Tea	-1.97 (5.063)	-11.61 (4.84)	-6.57 (5.209)	-17.60 (3.75)	-23.10 (3.67)	-19.07 (3.682)
Tata Power	-8.38 (1.92)	-2.20 (1.43)	3.38 (0.775)	-5.71 (2.039)	-10.42 (2.06)	4.04 (3.27)
Voltas India	19.09 (3.09)	21.83 (3.58)	9.09 (3.26)	-5.74 (2.49)	-2.07 (2.32)	-3.82 (1.92)
Indian Hotels	-7.22 (1.089)	-2.61 (1.03)	0.83 (1.02)	-1.17 (0.89)	2.02 (1.14)	3.03 (1.09)
Tata Communications	13.40 (2.49)	9.40 (3.03)	-1.42 (3.10)	2.34 (0.90)	2.07 (1.62)	-9.58 (2.60)
Rallis India	0.13 (4.61)	-0.66 (3.18)	-1.31 (3.80)	-3.26 (3.17)	-10.27 (3.08)	-26.30 (2.72)
Tata Motors	-5.08 (1.65)	-1.45 (1.97)	1.25 (2.61)	2.69 (1.38)	1.80 (1.11)	0.50 (1.60)
Tata Investment Corporation	2.19 (2.38)	-0.56 (2.27)	-4.71 (2.91)	-4.17 (2.23)	-6.19 (1.57)	-2.54 (2.23)
Tata Coffee	24.60 (4.16)	22.84 (4.95)	-0.22 (3.96)	-7.32 (1.64)	0.86 (6.09)	2.28 (4.68)
Tata Chemicals	6.68 (2.46)	11.07 (2.52)	1.66 (2.10)	-0.38 (1.36)	0.88 (2.15)	-7.99 (2.21)
Tata Steel	8.81 (1.63)	4.06 (1.45)	-0.34 (1.19)	0.56 (1.20)	3.30 (1.78)	2.58 (1.58)

Figures given In the parenthesis indicate standard deviation

For the second window period of 10 days for its Pre period Tata Coffee gave 22.84% which is the highest return to its shareholders but also the highest volatility of 4.95 was noticed in the stock. TRF which recorded a very high return of 20.38% during the Pre period ended up giving negative returns to its shareholders in the corresponding Post period. Six companies had negative value of CAR in the Post period.

For the window period of 20 days Pre and Post only four companies had negative CAR values in the Pre period and seven companies recorded negative CAR values in the post period. The returns of Tata Power, Indian Hotels and Tata Motors improved after merger. Rallis India showed a return of 0.13% and post merger the company recorded negative returns. Also Voltas India had positive CAR of 19.09% in the pre period but in post period it was -3.82% with a standard deviation of 3.09 in the pre period and 1.92 in the Post period. Indicating less volatility in the Post period compared to pre period. Returns of Tata Chemicals in the post period got highly eroded from 6.68% in the Pre period to -7.99% in that Post period. The companies which had positive values in the Pre period but later in the Post period it turned negative. This indicates that the Shareholders did not appreciate the M&A by the companies.

Consolidated Corporate Performance Impact of M&A on Tata Group

Table 6 presents the results of the Pre M&A and Post M&A Operating performance ratios for the entire sample set of M&A. This shows that there was a decline in the mean OPM (25.12% to 24.10%), but the decline was not statistically significant (t-statistic value of 0.765). However NPM (15.18% to 15.38%) ratios showed increase in the Post M&A period of only 1.37% (t-statistic value of 0.11). The mean RONW (5.09% to 16.31%) and ROCE (19.07% to 19.21%) showed an increase in the Post M&A period (t- values of -1.59517

Table 6: All Ratios of the Tata Group of Companies

Ratio	Mean	Percentage	t	p-value	
PRE	POST	Change	Statistic		
Profitability Ratios					
OPM	25.1194	24.1014	-4.05	0.7656(NS)	0.4601
NPM	15.1755	15.3839	1.37	-0.1138(NS)	0.9115
RONW	5.0906	16.3056	220.31	-1.5952(NS)	0.1390
ROCE	19.0743	19.2076	0.70	-0.0388(NS)	0.9697
Operational Efficiency and Asset Utilization					
ATR	77.2779	82.1436	6.30	-0.7604(NS)	0.4630
ROTA	11.0848	11.4552	3.34	-0.1636(NS)	0.8730
Liquidity and Solvency Ratios					
QR	0.7025	0.6081	-13.44	0.4998 (NS)	0.6271
CR	1.3086	1.0953	-16.30	1.0382(NS)	0.3215
DE	1.1069	0.7842	-29.16	0.7831(NS)	0.4501

Note: NS-Not Significant

and -0.03882 respectively). The comparison of the Pre M&A and Post M&A Operational Efficiency and Asset Utilization ratios for the entire sample showed that there was an increase in the ATR and ROTA by 6.30% and 3.34% respectively. This depicts that the companies did achieve improvement in the Operational Efficiency and Asset Utilizations. But again the results are insignificant at required probability levels. Decline is observed in the liquidity and solvency ratios. The mean DE decreased from 1.1069 to 0.7842 signifying a decrease in the long term debt of the companies. There was a marginal statistically insignificant decrease in leverage after the M&A (1.1069 vs. 0.7842), confirmed by the low t-value of 0.7831. All the ratios showed insignificant results. Hence it is concluded that the M&A event did not have any major significant positive impact on the operating and financial performance of the acquiring Tata Group of Companies. This implies that Corporate acquisitions by Tata Group of companies did not lead to significant improved performance for the sample companies for the period examined in this study. The results are uniform across the nine accounting ratios which show insignificant results.

The Table 7 shows the Consolidated CAR (in %) of the Tata Group of Companies. The returns during the Pre period were positive throughout but at the end of the Pre period the returns showed a considerable decline by recording only 0.96% CAR for the t-5 period. As evident from the results Post period recorded only negative CAR values. And the daily returns started to decrease more and more. Existing evidence has shown that the wealth of bidder shareholders significantly diminishes in the period after a merger or takeover.

Table 7: Consolidated Car of the Tata Group of Companies (in %)

t-20	t-10	t-5	t+5	t+10	t+20
5.61	5.87	0.96	-3.47	-4.22	-5.72

Conclusion

It is evident from the analysis that both hypotheses set for validation are not fully accepted. Overall the Metal industry giant Tata Steel was the company that benefited most from M&A in terms of Corporate performance and Shareholders wealth. Indicating that, their management and integration team were successfully able to obtain synergies from the acquisition. Worst hit was Tata Telecommunication, indicating that acquisition had a negative impact on corporate performance of the company. The 't-test' when done individually, have shown significant results as compared to the consolidated test which showed insignificant results on Corporate performance of the Tata Group of companies. Also the consolidated CAR values obtained were found to be decreasing and negative in the post announcement period but individually there is evidence of positive returns in the post announcement period.

The conclusion emerging from the point of view of Corporate performance evaluation is that the good management of the Tata Group helped carry out

the challenging task of integrating operations and leveraging the projected synergies appropriately. From the aspect of Shareholders wealth it can be concluded that the majority of the acquiring companies were not able to add value to the Shareholders wealth in Post M&A announcement period. The market reacted to the news of the M&A in a negative manner expecting that the M&A would not improve the performance of the company.

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