

Method of Payment and Operating Performance of Acquiring Companies: A Study of Indian Mergers

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Abstract

The present paper aims at analyzing the operating performance of 84 acquiring companies involved in M&As in India between 2000-2010. The study examines the relation between the change in operating performance of acquiring firms and cash and stock methods of payment. The results of the study indicate that the operating performance of sample acquiring companies deteriorates after the merger in the long run. Out of 5 measures of performance 3 measures shows that the control firms outperform sample firms. The study also concludes that Cash flows increase significantly following mergers in case of stock financed mergers but decline for cash financed mergers.

Keywords: Acquisitions, Cash adjusted assets, Cash Mergers, Mergers, Operating income

1. Introduction

This paper focuses on acquiring firms operating performance following corporate mergers in India. Do mergers affect post-merger operating performance? This question has occupied the attention of several researchers. The mergers carried out with the grandiose objective of synergy values, cost savings, revenue growth, etc. on the combined entities of the mergers. The net result of these objectives indicates that mergers show post-merger synergy value. The value of the combined entity is higher than the values of two or more independent entities. An analysis based on these lines on the operating performance becomes necessary. This analysis would help to know the operational improvement in the post-merger period on account of mergers. The analysis may cover areas of profitability, liquidity, solvency and efficiency levels. The analysis may be carried out using traditional accounting tools or cash flow measures. A study by Loughran and Vijh (1997) presents a comprehensive analysis of the post- merger stock returns of the merged firms over the five years following the effective date of the acquisition. Loughran and Vijh (1997)

conclude that combinations resulting from cash offers earn excess returns that are significantly larger than those associated with stock offers. This issue has not yet been directly addressed in the literature for a large sample of corporate combinations. The present study is designed to examine whether improvements in the post-merger operating performance of combinations in which cash financed mergers are significantly different from the improvements associated with stock financed mergers.

2. Review of Literature

Profitability of M&As can be analyzed by using two major approaches, namely share price analysis and accounting measure. Studies based on the share price analysis used to investigate the short-term returns and long-term economic gains to shareholders during the period surrounding the announcement of merger deals. Studies analyzing accounting measures, examine the financial results reported by firms to assess post-merger performance. These studies had focused on the comparative analysis of accounting statements of the acquirers before and after M&A to observe how they affect the financial performance. Several studies were done all over the world to evaluate the operating performance and determine the impact on profitability and efficiency after mergers and acquisitions. The present section briefly describes the survey of relevant studies in this context.

Healy, Palepu and Ruback (1992) examined post-merger performance using the “median operating cash flow return on actual market value for 50 combined target and acquirer firms during 1979-1984 and found that “the merged firms have significant improvements in post-merger asset productivity relative to their industries leading to higher operating cash flow returns. Manson et al. (1994) further investigated a sample of 44 takeovers in the UK during 1985-1987 by using the similar cash flow variables and methodology used by Healy et al. (1992). They have observed significant operating as well as non-operating gains resulting from takeovers in the UK. Saple V. (2000) finds that the target firms were better than industry averages while the acquiring firms had lower than industry average profitability. A study by Linn and Switzer (2001) indicate that the change in performance of the merged firms is significantly larger for cases in which the acquiring company offered cash as compared to stock offers. Ghosh (2001) using firms matched for performance and size as a benchmark, finds that cash flows increase significantly following acquisitions that are made with cash, but decline for stock acquisitions Pawaskar (2001) has identified the sources of merger induced changes by using a sample of 36 mergers during 1992-1995 and observed that corporate performance has not improved significantly post-merger.

Ramaswamy and Waegelein (2003) concluded that there is a positive significant improvement in the post-merger performance. Findings by Rahman and Limmack (2004) reveal that post-merger operating performance improved to the extent of 3.75% per year. Beena (2004) analyzes the pre and post-merger performance of a sample of 115 acquiring firms in the manufacturing sector in India, between 1995-2000, using a set of financial ratios and t-test. The study could find any evidence of improvement in the financial ratios during the post-merger period as compared to the pre-merger period for the acquiring firms. A study by Martynova, Oosting and Renneboog (2006) found that the acquiring and target firms significantly outperformed the median peers in the industry prior to the takeovers event, but the profitability of the combined firm decreased significantly following the takeover. Vanitha and Selvam (2007) find no change in the overall financial performance of merged companies in respect of 13 variables taken for the study. On the

other hand, Mantravadi and Reddy (2008a) find a fall in the six financial variables selected by the study for evaluating post-merger performance of acquiring firms. In another study, Mantravadi and Reddy (2008b) finds a fall in operating profit margin, gross profit margin, net profit margin, ROE and ROCE for all the three types of mergers in post-merger period.

In an empirical survey of 152 companies, Rani et al. (2010) have observed that the primary motive of mergers in India during 2003-2008 has been to take advantage of synergies. Operating economies, increased market share and financial economies have been indicated in order of importance as the desired synergies to be gained through corporate merger in India.

Kumara and Satyanarayana (2013) compared the pre and post M&A performance of 10 major merger deals in India and finds decline in Return on capital employed (ROCE), return on long term funds, and return on assets (ROA) increased positively but return on net worth (RONW). A study by Ramachandran and Sathishkumar (2011) concludes that operating performance in terms of return on net worth and return on capital employed is improved in the case of Information Technology Industry, Real Estate and Infrastructure Management Industry and Pharmaceuticals and Healthcare Industry after the M&A with exception on Banking and Finance Industry in India. Another study by Ramachandran and Sathishkumar (2014) examined the operating performance 39 of acquiring manufacturing firms in India during 2006-07 reveals that the M&As process has significant (positive improvement) effect on operating performance of the acquiring manufacturing firms after M&As over the study period. Khurana and Warne (2014) studied the impact of cross border M&As of five Tata group companies on shareholders' wealth and profitability of the acquirer corporations during 2007-08. The effect on shareholders' wealth was found to improve in case of Tata-Teleservices and Tata Power.

3. Data and Methodology

The study considers 84 merger announcements of companies listed on Bombay Stock Exchange for the period 2000 to 2010. The total sample consists of 62 stock financed mergers and 22 cash financed mergers. Almost 74% of the total sample size consists of stock financed mergers and the rest comprises cash mergers. The financial data of the sample target and control firms are accessed from the CMIE Prowess Database. A post-merger period of 3 years is selected for the purpose of analyzing the post-merger operating performance of the acquiring firms.

4. Operating performance measures

Several accounting-based performance measures have been used in existing literature. Most studies on post –merger operating performance use EBITDA, pre-tax operating cash flow, as measure of operating performance (e.g. Healy et.al, 1992, Heron and Lie 2002, Barber and Lyon 1996). For the analysis of operating performance the present study follows the methodology prescribed by Barber and Lyon (1996) that accounts for the pre-event performance of merging firms to determine whether operating cash flow performance improves following mergers. Specifically, a comparison of the post and pre-merger performance of acquiring firms relative to control firms is done to determine whether operating cash flow performance improves following merges.

According to Barber and Lyon, operating income (EBITDA) is defined as sales less cost of goods sold, and selling, general and administrative expenses and the other studies define it as the sum of operating income depreciation, interest expense and taxes. To establish a measure of operating performance that is comparable across firms, Healy et.al (1992) divided operating income (EBITDA) by the market value of total assets. Clark and Oftek (1994) scale their performance measure EBITDA by sales. Martynova et.al (2006) state that the often-used EBITDA (Earnings before Interest, tax, depreciation and amortization) is not a pure cash flow performance measure, since it does not consider changes in receivables, inventories and payables. Therefore, their study includes two different cash flow measures, namely EBITDA-only and EBITDA minus changes in working capital. They scale these measures by the book value of total assets and sales to create four performance measures that are comparable across firms. The study uses these performance measures also. Overall, we consider the following five measures of operating performances, namely

1. Return on Book value of assets.
2. Return on Cash adjusted Assets (ROCAs)
3. Cashflow based measure of return on assets.
4. Return on sales
5. Cash Flow Return on Sales

4.1 Return on Book value of assets (ROAs)

To arrive at the Return on the book value of total assets the operating income (EBITDA) is scaled by average of beginning and ending period book value of total assets. This measure of operating performance is most commonly used by the several researchers. Table No 1 gives details;

Table No 1: Return on Book Value of Total Assets

Years Around Merger	Return on Assets (%)		
	Sample Firms	Control Firms	Difference
-3	16.39	15.28	1.11
-2	17.96	16.01	1.95
-1	18.86	15.68	3.19
1	17.11	15.20	1.91
2	16.74	15.68	1.06
3	15.52	14.92	0.60
Average	17.10	15.46	1.64
Median	16.93	15.48	1.51
S. D	1.18	0.40	0.92
t-test	35.46	95.54	4.34

Source: Computed from CMIE Prowess Database.

The ratio of EBITDA to Book value of Total Assets has shown a positive difference in pre and post-acquisition period, indicating that merging firms perform better than non-merging firms. However, the difference has shown a declining trend in post-merger period. For the sample firms, the ratio has fallen from a high of 18.86% in the -1 period to 15.52% in the +3 period.

The results of the study are consistent with studies of Nick de (2012) who finds declining significant ROAs ratio in post-acquisition performance for both public and private acquirers.

Barber and Lyon (1996) also find considerable declining ROAs in the sample period. Over the sample period the mean ROA declines from 16.7% during 1977 to 12% at the end of 1992. Martynova and Renneboog find 12.48% ROA for the year -3 and 9.82% for the year +3, while the industry adjusted median difference is 2.73% for the year -3 and 1.38% for the year +3. Grigorieva and Petrunina (2013) finds a declining ROAs, 14% of ROAs for the year -2 and 10.9% for the year +2.

An attempt is made to analyze the operating performance of sample acquiring firms based on method of payment using ROAs as a performance measure. Table 2 depicts the summary of ROAs based on the method of payment for the 6 years.

Table No 2: payment method wise Return on Book Value of Total Assets

Period	Return on Assets					
	Sample Firms		Control Firms		Difference	
	Cash	Stock	Cash	Stock	Cash	Stock
-3	14.79	16.94	14.65	15.49	0.14	1.44
-2	14.85	19.02	15.65	16.14	-0.80	2.88
-1	17.14	19.44	14.38	16.11	2.76	3.33
1	15.50	17.66	16.13	14.89	-0.63	2.77
2	15.43	17.18	14.22	16.18	1.21	1.01
3	13.22	16.30	14.02	15.23	-0.80	1.07
Average	15.16	17.76	14.84	15.67	0.31	2.08
Median	15.14	17.42	14.52	15.80	-0.24	2.11
S.D	1.28	1.23	0.85	0.55	1.43	1.03
t-test	29.11	35.34	42.82	70.12	0.54	4.98

Source: Computed from CMIE Prowess Database.

The ratio has fallen in the post-acquisition period for both cash and stock mergers control firms depict similar results. As a result, the difference has fallen in the post-merger period.

Figure 1 shows the graphical representation of movement payment wise of Return on assets (Excess ratio)

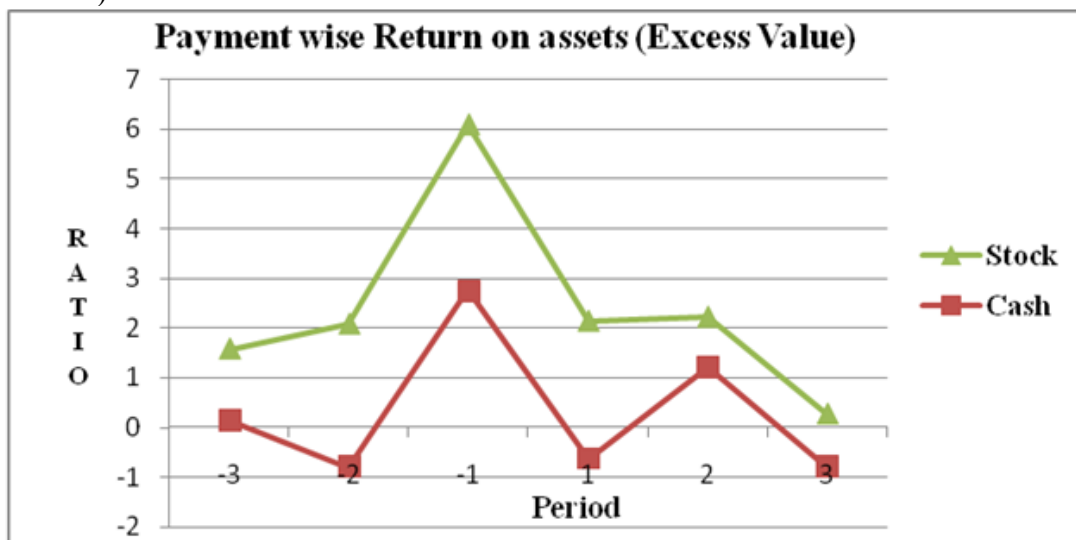


Fig 1

4.2 Return on Cash adjusted Assets (ROCAs)

The return on assets measure scales operating income (EBITDA) by the book value of total assets, which reflects all assets of the firm; both operating and non-operating. Operating income reflects income generated by only the operating assets of the firm. To obtain a more accurate measure of productivity of a firm’s operating assets; operating income should be scaled only by the value of the operating assets [Barber & Lyon (1996)].

Return on the book value of assets adjusted for cash balances is arrived at by dividing operating income (EBITDA) by cash adjusted assets. Cash adjusted assets is calculated by deducting cash and marketable securities from the book value of total assets. Table No 3 depicts the details of the Return on cash adjusted assets for sample acquiring firms and control firms for 3 years before and after the merger.

Table No 3: Return on Cash adjusted assets

Years Around Merger	Return on Cash Adjusted Assets (%)		
	Sample Firms	Control Firms	Difference
-3	18.74	17.26	1.48
-2	21.05	19.25	1.81
-1	22.20	18.47	3.73
1	21.56	18.01	3.55
2	20.39	18.63	1.77
3	19.01	17.80	1.21
Average	20.49	18.24	2.26
Median	20.72	18.24	1.79
S.D	1.39	0.70	1.09
t-test	36.11	64.13	5.06

Source: Computed from CMIE Prowess Database.

The ratio, after showing an increasing trend in pre-acquisition period, has fallen from 22.20% in -1-year period to 19.01% in +3-year period. The ratio has been inconsistent for control firms. The difference is showing a decline in the post-merger period, indicating that merges are not benefitting the acquiring firms.

Table 4 presents the details of return on cash adjusted assets based on method of payment.

Table No.4 payment method wise return on cash adjusted assets

Period	Return on Cash Adjusted Assets					
	Sample Firms		Control Firms		Difference	
	Cash	Stock	Cash	Stock	Cash	Stock
-3	17.67	19.10	17.12	17.30	0.54	1.80
-2	17.41	22.29	21.22	18.58	-3.81	3.71
-1	20.93	22.64	18.48	18.47	2.44	4.17
1	23.28	20.98	21.61	16.80	1.68	4.19
2	20.31	20.42	19.06	18.48	1.26	1.94

3	17.78	19.43	16.97	18.08	0.80	1.35
Average	19.56	20.81	19.08	17.95	0.49	2.86
Median	19.04	20.70	18.77	18.27	1.03	2.82
S. D	2.35	1.45	1.98	0.74	2.21	1.30
t-test	20.37	35.16	23.59	59.72	0.54	5.39

Source: Computed from CMIE Prowess Database.

The results of Table No 4 are like Table 3 and are also similar to previous Table. The ratio has fallen for both cash and stock mergers while the fall is steeper for cash than stock mergers and control firms too depict a similar trend. As a result of this, the difference has fallen.

The ratio of return on cash adjusted assets in case of stock financed mergers for sample acquiring firms in the year -3 is 19.10% and in the year +3 is 19.43%. The control firm’s ratio in case of stock financed merges also increases from 17.30% in year -3 to 18.80% in the year +3. While the average difference decreases from 1.80% in the year -3 to 1.35% in the year +3. This indicates better performance of sample acquiring firms than the control firms.

Overall analyses of the above table indicate that stock financed mergers perform better than cash financed mergers. Stock financed mergers earn 0.55% more returns than cash financed mergers at the end of year 3 after the merger.

Figure 2 shows the graphical representation of movement payment wise of Return on cash adjusted assets (Excess ratio)

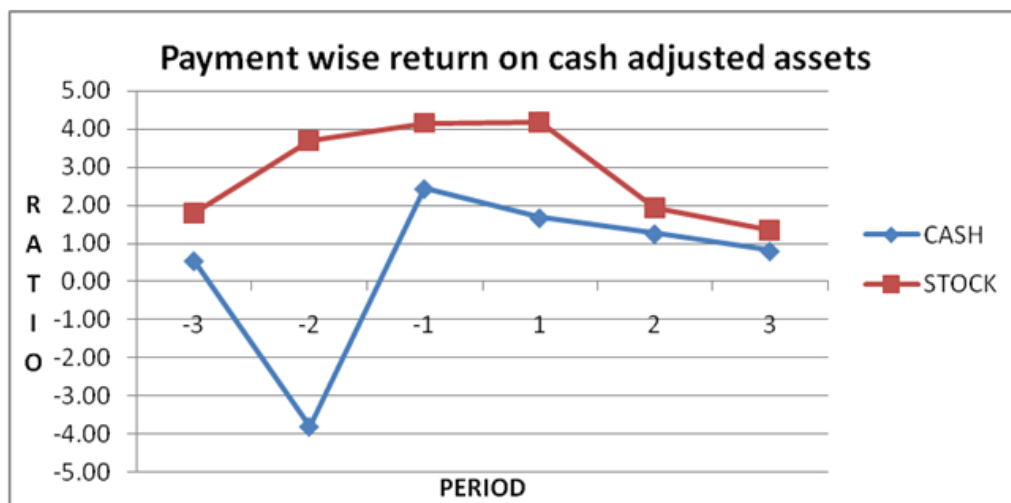


Fig 2

4.3 Cashflow based measure of return on assets.

Using a cash flow measure of operating income can overcome the potential earnings manipulation problem associated with as accrual –based measure of operating income. If managers manipulate the recognitions of revenue or expense items for personal benefit, operating income can be a biased measure of performance. For the sample of firms whose managers might have unusually strong incentives to manipulate earnings, a cash-based measure of performance could be more appropriate than the accrual-based measures. Teoh, Wong, and Rao (1994) and Teoh, Welch and

Wong (1995) present evidence indicating that prior to the issue of initial public offerings or seasoned equity offerings use accruals to overstate earnings.

The Cash flow return on assets is computed by dividing operating cash flow by book value of total assets. The details of cash flow return on assets are depicted in Table No 5.

Table No 5 Cash Flow Return on Assets

Years Around Merger	Cash Flow Return on Assets		
	Sample Firms	Control Firms	Difference
-3	9.46	9.72	-0.27
-2	10.31	9.69	0.62
-1	11.13	9.38	1.76
1	11.05	8.87	2.18
2	10.83	10.63	0.20
3	8.22	8.72	-0.50
Average	10.17	9.50	0.67
Median	10.57	9.53	0.41
S.D	1.14	0.69	1.09
t-test	21.86	33.77	1.50

Source: Computed from CMIE Prowess Database.

For the sample firms this increases in the pre-merger period and declines in the post-merger period. The ratio is fluctuating for all the years for control firms. The difference in ratio of sample firms and control firms also shows fluctuating trend. The ratio is -0.27% in the year -1 and it reaches to -0.50% in the year +3. Ghosh (2001) finds that that the median of the ratio declines from 15.80% in year -3 to 13.13% in the year 3. There is a concurrent decline in industry cash flows from 11.94% to 10.66%. The median of the difference between merging firm’s cash flows and industry-median cash flows is 3.86% in year -3 and the number declines to 2.47% in the year +3.

Table 6 presents the detail of cash flow return on assets based on payment method.

Table 6: Payment method wise Cash flow return on assets

Period	Cash Flow Return on Assets					
	Sample Firms		Control Firms		Difference	
	Cash	Stock	Cash	Stock	Cash	Stock
-3	7.56	10.10	9.50	9.80	-1.94	0.30
-2	6.32	11.66	9.57	9.73	-3.25	1.93
-1	9.53	11.68	8.20	9.78	1.33	1.90
1	11.21	11.00	5.89	9.88	5.32	1.12
2	9.87	11.15	7.98	11.52	1.89	-0.37
3	7.75	8.37	6.31	9.53	1.44	-1.16
Average	8.71	10.66	7.91	10.04	0.80	0.62

Median	8.64	11.08	8.09	9.79	1.39	0.71
S. D	1.80	1.26	1.55	0.74	3.04	1.25
t-test	11.83	20.74	12.50	33.45	0.64	1.22

Source: Computed from CMIE Prowess Database.

Stock financed mergers are showing a higher cash flow return on assets compared to Cash financed mergers. Further, the merging firms have a higher ratio than the Control firms in Stock financed than in Cash financed mergers. However, for both Sample and Control firms the ratio declines in the post-merger period, compared to the pre-merger period.

Figure 3 shows the pictorial representation of Payment wise movement of Cash Flow Return on assets (Excess Ratio).

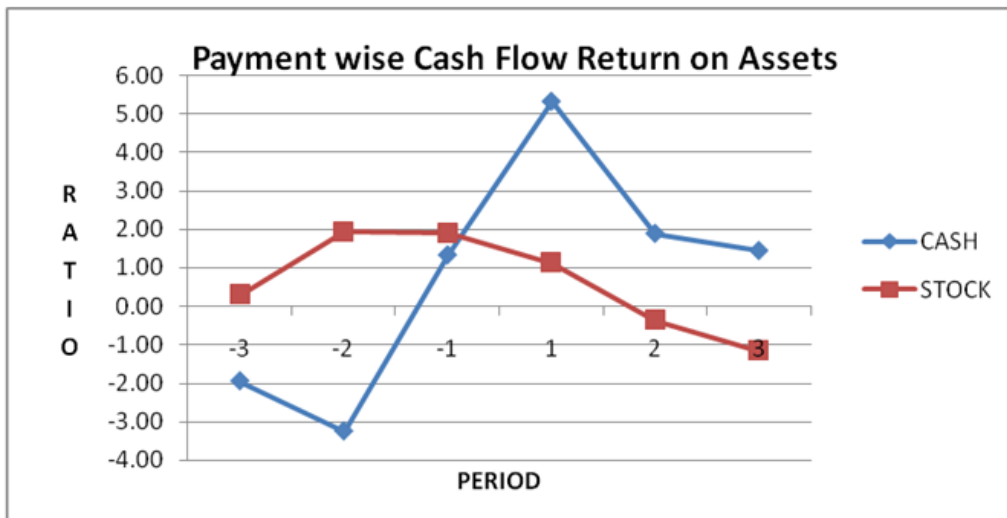


Fig 3

4.4 Return on sales

The return on sales is used to assess the operating performance of sample acquiring firms in the long term. Return on sales can be computed by dividing operating income (EBITDA) by sales. The advantage of this performance measure is that the numerator and denominator are from a firm’s income statement. Consequently, they may be more appropriately matched [Barber & Lyon (1996)]. Table 6.5 depicts the details relating to return on sales for 3 years before merger and 3 years after the merger.

Table No 7 Return on Sales

Years Around Merger	Return on Sales (%)		
	Sample Firms	Control Firms	difference
-3	17.38	78.25	-60.87
-2	18.30	24.43	-6.13
-1	19.89	34.98	-15.10
1	19.26	20.49	-1.23
2	19.09	23.18	-4.08
3	17.59	20.42	-2.83

Average	18.59	33.62	-15.04
Median	18.70	23.80	-5.10
S. D	0.99	22.51	22.97
t-test	0.41	9.19	9.38

Source: Computed from CMIE Prowess Database.

Like all previous calculations, the Return on Sales for both control and merging firms decline in the post-acquisition period after showing an improvement in the pre-acquisition period. However, the difference is negative, indicating that control-firms perform better than sample firms.

The results are consistent with the study by Grigerieva and Petrumina (2013) who finds a declining Return on sales from 19.6% for the year -2 to 17.2% for the year +2. Martynova and Renneboog (2006) also find the same declining results. Return on sales decreases from 11.02% in the third year before merger to 10.48% in the third year before the merger.

Table No 8 shows the details relating to return on sales based on payment method.

Table No 8: Payment method wise Return on sales

Period	Return on Sales					
	Sample Firms		Control Firms		Difference	
	Cash	Stock	Cash	Stock	Cash	Stock
-3	19.02	16.83	20.35	31.82	-1.33	-15.00
-2	17.45	18.59	22.14	25.20	-4.69	-6.61
-1	19.83	19.91	22.70	39.14	-2.87	-19.24
1	20.31	18.90	18.99	21.00	1.33	-2.10
2	18.76	19.21	22.71	23.33	-3.94	-4.13
3	14.22	18.73	20.79	20.30	-6.57	-1.57
Average	18.26	18.69	21.28	26.80	-3.01	-8.11
Median	18.89	18.82	21.46	24.27	-3.41	-5.37
S. D	2.21	1.03	1.49	7.32	2.76	7.32
t-test	20.22	44.60	34.91	8.97	-2.68	-2.71

Source: Computed from CMIE Prowess Database.

The ratio has fallen for both cash and stock financed mergers in the post-merger period. The difference too has seen negative, indicating that control firms perform better than target firms.

The results are like the studies by Grigerieva and Petrumina (2013) who finds the Industry adjusted EBITDA/SALES of -3% for stock financed transactions and -4.2% for cash financed transactions for the third year after the merger announcement. Ghosh (2001) finds the medians of the difference in cash flow margins between merging and matched firms to be 1.73%, 1% and 0.84% for the tears -3, -2, -1 respectively. He also finds a typical acquisition that uses cash to merge can increase post acquisition cash flow margin by 2.89% per year, while cash flow margin for stock acquisitions decline by 1.27% per year.

Figure 4 shows the graphical representation of movement payment wise of Return on sales (Excess ratio)

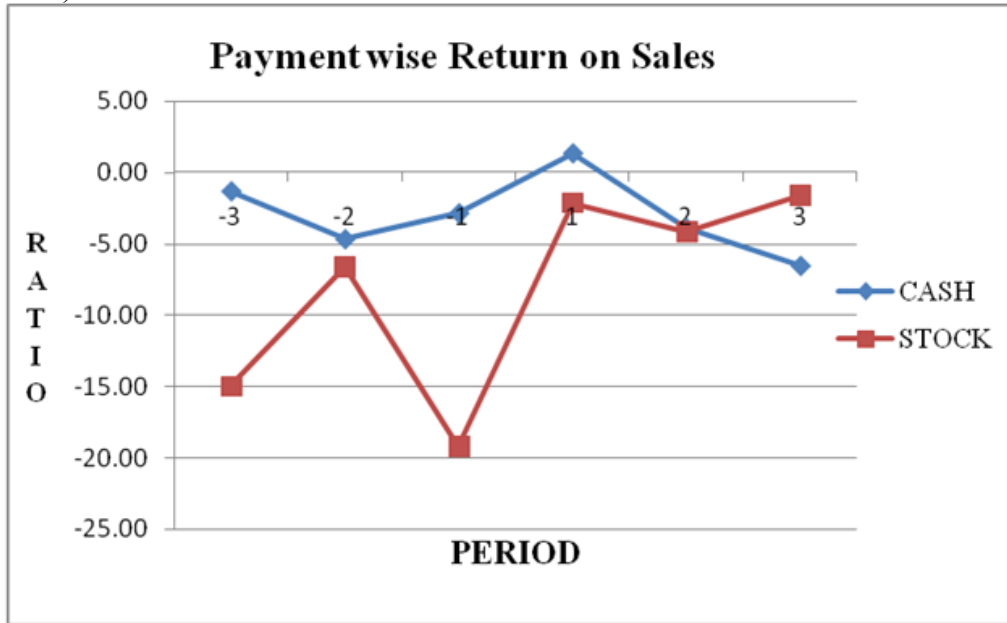


Fig 4

4.5 Cash Flow Return on Sales

Cash flow return on sales is computed by dividing operating cash flow by value of total sales. Whereas operating cash flow is estimated as operating income before depreciation (EBITDA) plus the decrease in receivables, the decrease in inventory, the increase in accounts payable, the increase in current liabilities and the decrease in other current assets. This measure of operating performance shows how much cash is generated for every rupee of sales. The measure is used by Martynova and Renneboog. The details of cash flow return on sales are depicted in Table No 9.

Table No 9: Cash Flow Return on Sales

Years Around Merger	Cash Flow Return on Sales		
	Sample Firms	Control Firms	Difference
-3	10.18	30.13	-19.95
-2	11.50	24.86	-13.36
-1	9.64	15.32	-5.68
1	12.73	22.32	-9.60
2	12.56	29.63	-17.07
3	9.64	12.14	-2.50
Average	11.04	22.40	-11.36
Median	10.84	23.59	-11.48
S. D	1.42	7.39	6.70
t-test	0.58	3.02	2.73

Source: Computed from CMIE Prowess Database.

The cash flow returns on sales, too, like other previous measures declined in the post-merger period for sample firms from 12.73% in +1-year period to 9.64% in +3 periods. The fall is too

severe for merging firms than for control firms. The results are similar to the study by Grigerieva and Petrumina (2013) who find median industry-adjusted Cash Flow Return on Sales of -1.2% after the 2 years of merger. Mantravadi and Reddy (2008) also found a negative impact of M&A on company performance in some Indian industries

Table 10 shows the details of cash flow return on sales based on method of payment.

Table No10: Payment Method wise Cash Flow Return on Sales

Period	Cash Flow Return on Sales					
	Sample Firms		Control Firms		Difference	
	Cash	Stock	Cash	Stock	Cash	Stock
-3	10.53	10.06	27.53	31.01	-17.00	-20.95
-2	6.94	13.04	27.79	23.87	-20.85	-10.83
-1	11.07	9.16	0.24	20.43	10.83	-11.26
1	15.99	11.62	4.50	28.36	11.49	-16.74
2	15.78	11.47	15.72	34.34	0.07	-22.87
3	7.20	10.47	-30.43	26.56	37.62	-16.09
Average	11.25	10.97	7.56	27.43	3.69	-16.46
Median	10.80	10.97	10.11	27.46	5.45	-16.41
S. D	3.96	1.37	21.82	4.98	21.48	4.90
t-test	1.62	0.56	8.91	2.03	8.77	2.00

Source: Computed from CMIE Prowess Database.

Though the ratio has fallen for both cash and stock merger, the fall has been steeper for cash than for stock financed mergers. The difference is negative for all the years, indicating that control firms performing better than sample firms.

Figure 5 shows the graphical representation of movement payment wise of Cash Flow Return on sales (Excess ratio)

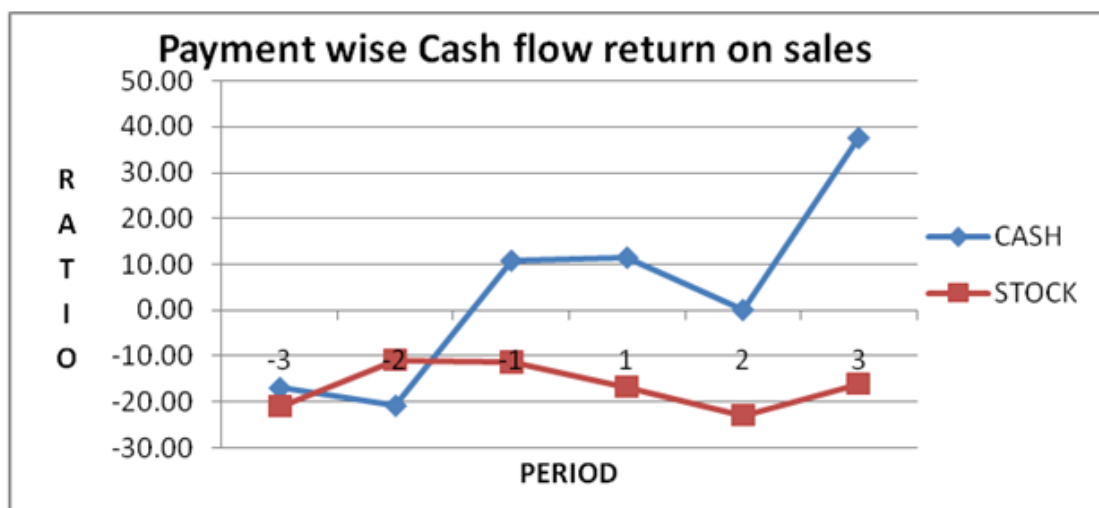


Fig 5

5. Conclusion

The present chapter analyses the operating performance of 84 acquiring companies involved in M&A in India between 2000-2010. The study examines the relation between the change in operating performance of acquiring firms and cash and stock methods of payment. For testing the operating performance five performance measures, viz Return on Book value of assets, Return on Cash adjusted Assets (ROCAs), Cashflow based measure of return on assets, return on sales and Cash Flow Return on Sales have been used. The results for 84 sample firms indicate that the mergers in India really affect the operating performance of acquiring firms in the long run. The results of the study indicate that the operating performance of sample acquiring companies deteriorates after merger. In all, five measures of performance Sample firms outperform Control firms. As far as method of payment is considered, the study finds that all the five measures of performance show that in the long run stock financed mergers perform better than cash financed mergers. The deteriorating performance is not conclusive evidence that mergers affect post-merger performance because the ratios are declining even for control firms. There must be some other factors affecting performance. It can also be said that the firms merge to arrest the deteriorating trend in performance. The superior performance of merging firms is also inexplicable. It cannot be concluded that mergers improve performance. The better performance of stock financed mergers may be attributed to decline in cash balances affecting firms' investment in the post-merger period. A further analysis to know exact reasons is necessary.

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