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Effect of Merger and acquisition on Financial Performance:Empirical Evidence from India

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ABSTRACT

The paper tries to explore is there any relationship between mergers and acquisitions andthe financial performance of acquiring companies by using the accounting-based measure. Mergers and acquisitions have been accepted as one of the important strategiesin corporate finance to create synergyfor the shareholder. A plethora of studies documented abroad relating to mergers and the financial performance of acquiring companies. The literature relating to the performance of acquiring companies by using accounting-based measure indicate there is a mixed view regarding wealth creation to shareholders. There has been a report observed inthe Indian context whether mergers create value to shareholders or not and the result recorded to have a contradictory finding. This motivates to explore whether there is any relationship of mergers with the financial performance of acquiring companies whether creating wealth for shareholders in long run based on accounting studies. The objective of this study to find out whether mergers generate value to the shareholders of acquiring firms by using accounting based as well as cash flow measures in the Indian context. The paper tries to examine whether any improvement in the post-merger performance of the acquiring firm in long run by using the cash flow model and financial ratio. The study has taken the domestic merger of the listed firms for the period from 2009-2011 to analyze the effect of the merger on shareholder wealth for the 3 years afterthe merger in the Indian context. The results

indicate there is an improvement in the post-merger performance of the acquiring firms in the long run of [-3, 3] years in the Indian context.

1. Introduction

Mergers and acquisitions are one of the important means to create value for the shareholder. It is one of theforms of corporate expansion by which the acquiring company able to increase the market share, tax consideration, synergies, and to tap the opportunities of the developed capital market like India. The decision to go for mergers and acquisitions has a profound impact on both shareholders, managers, customers, and the economy as a whole. It has a lot of long-term implications on the operational and financial structure of the acquiringfirm. There are extensive literature has emerged on the context of mergers and acquisitions whether acquiring firm create value to the shareholder or not in the long run by using both market-based measures as well as accounting-based measure. The present study uses a larger sample of 197 acquiring firms to analyze the three years post-merger performance of the acquiring companies. It tries to capture the post-performance of acquiring firms following mergers after the 2008 financial crisis of the Indian acquiring companies which are listed in the stock exchange. The post-merger financial performance of the acquiring firm has been tried to justify the synergy effect by using both profitability and cash flow measure. Hence two methodology has been adopted to judge the post-merger performance by using the financial ratio as well as cash flow measure. The rest of the paper is organized as follows:section 2 review the literature and hypotheses of the study, section 3 described sample data collection and methodology, variables of the study section 4 provides the empirical result and section 5 concludes the study.

2. REVIEW OF LITERATURE ON LONG RUN OPERATING PERFORMANCE

Previous research is mixed in terms of impact post acquiring firm performance. Previous studies have yielded incongruent results regarding long term operating performance of the acquiring firms. This can be conveniently categorized as one significant improvement in post-merger operating performance. Conflicting results have been reported in the studies with regards to the performance of the acquiring firms. The results are somewhat more mixed about long-term performance in the west. The long-run performance has been examined by using US drug generic industry by using accounting-based measure reported profit does not appear significantly following mergers (Trujillo, A. J., Garcia-Morales, E. E., Kabarriti, G., & Anderson, G., 2020)

Here we provide the results mergers and acquisitions field that focus on post-merger performance evaluation based on accounting ratio in the Indian context. The results of post-merger performance fromthe Indian perspective are also somewhat more mixed. Some authors are in support that post-merger performance (Kumar, B. R., & Rajib, P, 2007; Ramakrishnan, 2008; Azhagaiah, Ramachandran, 2007; Rani, N., Yadav, S. S., & Jain, P. K, 2012; Srinivasa Reddy, K., Nangia, V. K., & Agrawal, R, 2013; Kalra, 2013.Some studies have reported there is no improvement in post-merger performance (Pawaskar, 2001; Beena, 2004; Mantravadi, 2007; Singh, F., & Mogla, M., 2008; Kumar R., 2009.)As far as methodological issue in Indian perspectives is based on two types some authors are using financial ratio and others are using cash flow as a parameter for measuring the post-merger performance and comparing the pre-merger to post-merger matching as well as industry adjusted methods used for analyzing the post-merger performance.As far as the statistical test is concerned mostly used parametric test, Paired t-test to compare between pre-merger and post-merger performance.

2.1 hypotheses of the study

This is generally accepted in the literature from which we can conclude that synergy is the cause for mergers and acquisitions. if the synergy is created in the form of financial as well as operating, it must be reflected in the profitability or cash flow of the acquiring firms. Hence two hypotheses have been proposed based on this argument.

H_1 = There is a significant difference in the profitability of acquiring firms between the pre-merger and post-merger period

$H_{2=}$ There is a significant difference in cash flow to total assets between the pre-merger to post-merger period.

3. DATA AND METHODOLOGY

3.1 Sample selection

The relevant data for the study was derived from CMIE prowess. The sample period 2009-2011 was selected to focus on post-merger long-term performance with the current Indian economy after the financial crisis of 2008.The acquiring companies are selected where the data available for the acquiring firm for three years prior and post three years relative to merger year.The sample companies only consist of domestic mergers only. The final sample consists of 197 companies. Overlapping mergers has been excluded from the study.

3.2 Methodology of the Study

The present study has used accounting-based studies to deal with capturing the profitability of the acquiring company. The post-merger performance uses four important financial ratio parameters such as ROA, ROCE, RONW, and profit margin to examine the change in profitability in terms of performance. The pre-merger and post-merger performance has been judged

regarding matched firms.Matched firms are those who have not gone for acquisition during the sample period. To compare acquiring company pre-post-merger performance the study uses three years of data before and three years after the merger, is denoted as merger year, while pre-post-merger indicate (t-3,t-2,t-1) and (t+1,t+2,t+3,). that is the year of the merge is excluded from the study. The study used industry adjusted performance, to judge the performance of acquiring firms. For testing the hypothesis, a paired t-test statistic has been used to analyse for change in post-merger mean over pre-merger for each financial measure described below variables.

Table 1: *Variable Description*

Return on Assets	$ROA = \frac{PAT}{TA} * 100$
Return on Net worth	$RONW = \frac{PAT}{NET\ WORTH} * 100$
Return on Capital Employed	$ROCE = \frac{PAT}{ROCE} * 100$
Profit margin	$\frac{EBIT}{SALES} * 100$

3.3 Cash flow measure

The present study mainly defines the operating performance s pre-tax operating cash flow which is the sum of operating income, depreciation, interest expenses, and taxes which is unaffected by the accounting method. In this study, the measures of cash flow are used as employing EBITDA and to adjust the size across the companies the EBITDA is scaled by total assets. To measure the change in profitability the following cross-section regression model is used

Model 1 $POMDCF = \alpha + \beta PREMDCF + \epsilon$

Where

$POMDCF$= Post median industry adjusted cash flow to total assets

$PREMDCF$ =pre median industry adjusted cash flow to total assets

The slope coefficient takes any correlation in cash flow returns between pre to post-merger years. The y-intercept ‘α’ represents the change in annual control- adjusted performance due to the merger which is independent of the pre-merger performance. It depicts how much each unit change of changes the value $POMDCF$. ‘ε’ is the error term, i.e., the random disturbances from the regression line.

4. EMPIRICAL RESULTS

Table 2: Comparison of Premerger to Post-merger performance of selected Variables

Variables	N	Pre- Mean	Post -Mean	Mean Difference	t-Value	P-Value
ROA	197	4.9260	3.5191	-1.40689	2.110	.036*
ROCE	197	8.3943	6.0866	-2.30770	2.382	.018*
RONW	197	10.9816	5.5771	-5.40450	2.461	.015*
Profit Margin	197	-21.6206	1.8251	23.44570	-1.288	.199

Table 2 presents the results of four profitability measures of 197 acquiring firms used in the study. Return on assets is concerned pre mean is 4.92 whereas post mean is 3.51, mean difference between post-merger to pre-merger period is -1.40 and t-value 2.110 (p-value .036) which is statistically significant at 5% level. In the case of Return on capital employed the pre-merger mean is 8.3943 whereas the post-merger mean is 6.0866 with a mean difference of -2.30770 and t-value is 2.382 (p value.018) which is also statistically significant showed a decrease in performance on of post-merger return on capital employed. Return on net worth is concerned pre-merger mean is 10.981 whereas post-merger mean is 5.577 with a mean difference of -5.5771 and t-value 2.461(p value.015) which is also statistically significant at 5% level. Out of four profitability measures, three reported negative in terms of post-merger performance as compared to the pre-merger period. This signal there is a decline of profitability for the acquiring firm in the post-merger period

***Table 3:** Pre-post-performance comparison of cash flow to total assets*

Paired Variables	Pre- Mean	Post - Mean	Mean Difference	t-Value	P-Value
Average of [t-3, t-2, t-1], [t+1, t+2, t+3]	2.22	1.33	-0.89	1.35	0.178
[t-3, t+1]	12.35	11.19	-1.16	1.55	.124
[t-3, t+2]	12.35	10.73	-1.62	2.15	.033*

[t-3, t+3]	12.35	10.50	-1.85	2.31	.022*
[t-2, t+1]	12.22	11.19	-1.03	1.47	.143
[t-2, t+2]	12.22	10.73	-1.49	2.01	.046*
[t-2, t+3]	12.22	10.50	-1.72	2.28	.024*
[t-1, t+1]	12.10	11.19	-0.92	1.08	.282
[t-1, t+2]	12.10	10.73	-1.38	1.49	.137
[t-3, t+3]	12.10	10.50	-1.60	1.67	.096

Table 2 stated the different paired period comparison performance of cash flow to total assets of different period combination. The average of (t-3,t-2,t-1],[t+1,t+2,t+3] period reported a mean difference of -0.89 means there is decrease cash flow to total assets during that period as compared to pre-merger period. As far as all the paired variable is concerned for the different period stated a negative mean difference signifies that the post-merger cash flow to total assets means has been reduced from pre-merger period hence there is the decrease of post-merger performance during that period. This signals that the acquiring firm cash flow also decreases in comparison to pre- and post-merger performance.

Table 4: *Regression Results*

	B	t	Sig.
A	0.48	0.935	0.3510
MDIACFTA	0.38*	7.435	0.0000
R Square	0.221		
F	55.27*		0.0000

$MDIACFA_{POST=}$ 0.48+ 0.385$MDIACFA_{PRE} + \varepsilon$

Table 4 presents the reported regression results of model 1. The F-ratio in the model is 55.27(p-value 0.0000) is statistically significant in the regression model. The beta of the postmedian industry adjusted cash flow is 0.385 and statistically significant it indicates that for every unit change in the independent variable, the dependent variable that is postmedian adjusted industry cash flow increases by .38 units. The intercept value is 0.48 however it statically insignificant thus it can be said that post-merger

industry adjusted cash flow is not significantly different from pre-merger median industry adjusted cash flow. From this, it can be concluded that the post-merger performance has not increased based on cash flow measures.

***Table 5**: Determinants of Acquiring firms*

VARIABLES	Stock return	ROE
RD	1.344	0.0343
	(2.834)	(0.133)
Leverage	0.434	-0.294**
	(0.917)	(0.131)
Size	-0.242**	0.0270**
	(0.115)	(0.0114)
Sales growth	9.62e-06	-4.67e-06***
	(1.49e-05)	(1.19e-06)
Cash reserve	-0.755	-0.0181
	(0.962)	(0.0971)
Constant	3.704***	0.0744
	(1.083)	(0.0865)
Observations	116	116
R-squared	0.044	0.092

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5 presents the regression model to explains the factors that influence the performance of acquiring firms. Two performance measure such as return on equity and stock return has been used as a dependent variable in the model. The leverage, size, cash reserve, sales growth, research, and development expenses of the acquiring firm used as independent variables in the model. From the model both size and sales growth were found to be statistically significant. Thus, it can be concluded the size and sales growth are important determinants that influence the performance of the acquiring firm.

5. CONCLUSION

The objective of this paper is to analyse the long-term performance of acquiring firms engaged in mergers and acquisitions in India. The empirical evidence shows Indian acquiring firm performance deteriorates following the merger as compared to the pre-merger period. This deterioration happens in both profitability and cash flow measure. Furthermore, the paper tries to see the factors that influence the effect of acquiring a firm. The size and sales growth seem too significant factors explaining the influence of the

acquiring firm. The implication can be drawn from the above finding. The study can be taken more samples to analyse the effect of the performance of the acquiring companies.

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