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Competitive Advantage through Globalization

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The Effect of Mergers on Corporate Performance of Acquirer and Target Companies in India

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ABSTRACT

Mergers and acquisition becomes the major force in the changing environment. The policy of liberalization, decontrol and globalization of the economy has exposed the corporate sector to domestic and global competition. It is true that there is little scope for companies to learn from their past experience. Therefore, to determine the success of a merger, it is to be ascertained if there is financial gain from mergers. The present study is limited to a sample of companies which underwent merger during the period of 2002–05. It is proposed to compare the performance of the acquirer and target companies before and after the period of mergers by using ratio analysis and t-test during the study period of three years. The study found that the shareholders of the acquirer companies increased their financial performance after the merger event.

Keywords: Merger, Acquirer, Target, Financial Performance

INTRODUCTION

Mergers, acquisitions and corporate control have emerged as major forces in the modern financial and economic environment. Mergers, a source for corporate growth have been the subject of careful examination in the literature. The general rubric of corporate synergy signifies that the value created by the combination of firms may result in more efficient management, economies of scale, improved production techniques, a combination of complimentary resources, the redeployment of profitable uses, and the exploitation of market power or any number of values creating mechanisms. One of the significant objectives of any corporate sector is to achieve a high rate of economic growth. For achieving this, it keeps reviewing and improving its policies from time to time and introduces various measures, both at micro and macro-levels. It also requires various regulatory measures to channelize all economic efforts to achieve its social and economic objectives and to prevent unhealthy practices from entering into its economic system which is detrimental to public welfare. The mergers and acquisitions in India have changed dramatically after the liberalization of Indian economy. The policy of liberalization, decontrol and the globalization of the economy have exposed the corporate sector to manage domestic and global competition. The factors like low interest rates, cheap labour, and liberal government policy have helped the Indian corporate sector to reduce their cost. However, the corporate sectors view mergers for further cost reduction through technology advancement or to make their presence felt in the market.

REVIEW OF LITERATURE

An extensive review of literature has been carried out in order to enhance the level of understanding in the area of mergers, gain insight into the impact of mergers on the financial performance of acquirer and target companies, and formulate research problem for further investigation in this area. For the purpose of this study, review has been done on empirical studies in books, journals, published papers, etc.

Prasanna Chandra (1995) in his article, "*Shareholder Wealth Maximization*", discussed the various issues connected with the goal of shareholders' wealth maximization, rationale for the goal of maximizing shareholder wealth, criticisms for and against the shareholders' wealth maximization, conflicts between managers and shareholders regarding wealth and shareholder orientation in India.

The study entitled, "*Effect of Mergers on Corporate Performance in India*", written by Vardhana Pawaskar (2001), studied the impact of mergers on corporate performance. It compared the pre and post merger operating performance of the corporations involved in merger between 1992 and 1995 to identify their financial characteristics. The study identified the profile of the profits. The regression analysis explained that there was no increase in the post merger profits. The study of a sample of firms, restructured through mergers, showed that the merging firms were at the lower end in terms of growth, tax and liquidity of the industry. The merged firms performed better than industry in terms of profitability.

Mansur, A. Mulla (2003) in his case study, "*Forecasting the Viability and Operational Efficiency by use of Ratio Analysis—A Case Study*", assessed the financial performance of a textile unit by using ratio analysis. The study found that the financial health was never in the healthy zone during the entire study period and ratio analysis highlighted that managerial incompetence accounted for most of the problems. It also suggested toning up efficiency and effectiveness of all the facets of management and putting the company on a profitable footing.

Pramod Mantravadi and Vidyadhar Reddy (2007) in their research study, "*Mergers and Operating Performance: Indian Experience*", attempted to study the impact of mergers on the operating performance of acquiring corporate in different periods in India, after the announcement of industrial reforms, by examining some pre and post merger financial ratios, with chosen sample firms, and all mergers involving public limited and traded companies of nation between 1991 and 2003. The study results suggested that there are minor variations in terms of impact on operating performance following mergers in different intervals of time in India. It also indicated that for mergers between the same groups of companies in India, there has been deterioration in performance and returns on investment.

A book entitled, "*Mergers and Acquisitions in the Banking Sector—The Indian Scenario*", written by Selvam M. (2007) has analyzed the implications of stock price reactions on mergers and acquisitions activities taken place in the banking industry with special reference to private and public sector banks. The author has found from the analysis that the share prices are market sensitive. From the financial analysis it was observed that majority of the banks went for branch expansion and this has affected profitability to some extent and has resulted in unhealthy competition among the players.

Vanitha S. (2007), in her dissertation (unpublished) entitled, "Mergers and Acquisition *in Manufacturing Industry*", analyzed the financial performance of the merged companies, share price reaction to the announcement of merger and acquisition and the impact of financial variables on the share price of merged companies. The author found that the merged company reacted positively to the merger announcement and also, few financial variables only influenced the share price of the merged companies.

Vanitha S. and Selvam M. (2007) in their study, "*Financial Performance of Indian Manufacturing Companies during Pre and Post Merger*", analyzed the pre and post merger performance of Indian manufacturing sector during 2000–02 by using a sample of 17 companies out of 58 (thirty per cent of the total population). For financial performance analysis, they used ratio analysis, mean, standard deviation and 't' test. They found that the overall financial performance of merged companies in respect of 13 variables were not significantly different from the expectations.

To sum up the review of literature, many contributions have offered different perspectives of merger in different industries worldwide and explained the history of merger, valuation techniques followed by merging companies, and shareholders wealth effect due to merger. From the review of many excellent research papers and articles analyzing the pre and post merger performance of merged companies, it is inferred that majority of the studies strongly support the concept of enhanced post merger performance due to merger, and that it is beneficial to the acquirer companies.

STATEMENT OF THE PROBLEM

Many studies have been conducted to analyze corporate events like mergers, takeovers, restructuring and corporate controls. The researchers have generally focused on public and corporate policy issues, financial implications and method of valuation. However, most of the studies have deeply concentrated only on the analysis of financial performance of both acquirer and target companies in the pre merger period and specifically compared the performance of acquirer companies during pre and post merger period. No comprehensive analysis has been attempted from the viewpoint of the acquirer and target companies in the pre and post merger periods. Hence, in order to fill this gap in research, the present study attempts to analyze the financial performance of both the acquirer and target companies in the pre and post merger period.

NEED FOR THE STUDY

Merger is a routine event in the changed economic environment. Post merger financial gain will be generated only when the two companies are worth more together than apart. Therefore, there is a need to study the wealth enhancement with respect to mergers, which can be helpful in assessing the success of merger. Many studies have been conducted to analyze both the acquiring and target companies in the pre merger period and more specifically, acquirer companies in the pre and post merger periods. It is equally important to analyze from the viewpoint of the acquirer and target companies in the pre and post merger periods also. Hence, an attempt has been made to study the financial performance of both acquirer and target companies in the pre and post merger period.

OBJECTIVES OF THE STUDY

The following are the objectives of the study.

- To evaluate the pre and post merger financial performance of the acquirer and target companies.
- To offer the findings, suggestions and conclusions.

HYPOTHESIS OF THE STUDY

The following null hypothesis has been developed for testing the objective of the study.

H0: The post merger financial performance of the combined firm is not significantly different from the aggregate performance of the acquirer and target companies prior to the merger.

METHODOLOGY OF THE STUDY

Sample Selection

There are 93 companies which underwent mergers within and across industry during the study period from 01.04.2002 to 31.03.2005. For the purpose of corporate analysis, it was decided to select all the companies which merged with other companies in the same industry during the study period. Eighteen companies merged in the same industry during the study period. But for only thirteen companies, all the required data for analysis were available in the PROWESS (Corporate Data Base). Hence, the sample size of this study is confined to thirteen. Besides, while selecting the sample, following points were taken into account:

- Acquirer and target companies should belong to the same industry.
- Availability of merger date and industry information.
- The companies should be listed in BSE.

The details of sample companies (Acquirer and Target), along with the date of merger and name of the Industry concerned are given in Table 1.

Period of the Study

For the purpose of selecting sample companies, the present study covers a period of three years from 1 April 2002 to 31 March 2005. But in order to evaluate the financial performance of sample companies on a comparative basis, three years before merger and three years after merger were considered.

Sources of Data

The present study basically depends on secondary data. The required data on financial performance before and after merger were collected for the three year period. The data for each of the sample company were obtained from CMIE-PROWESS and www.bse-india.com. The additional data were also collected from books, articles in various journals, magazines and newspapers.

Table 1: List of Sample Companies

Sl. No.	Acquirer	Merger Date	Target
I. MANUFACTURING			
A.	Chemicals		
1.	JK Tyre and Inds. Ltd.	2002.10.07	Vikrant Tyres
2.	Tata Chemicals Ltd.	2003.01.22	Hind Lever Chemicals
3.	Supreme Industries Ltd.	2003.02.05	Siltap Chemicals
4.	Glaxosmithkline Pharmaceuticals Ltd.	2004.03.10	Burroughs Wellcome (India)
5.	Matrix Laboratories Ltd.	2004.03.29	Fine Drugs and Chemicals
B.	Transport equipment		
6.	TVS Motor Co. Ltd.	2003.10.03	Lakshmi Auto Components
7.	Sundram Fasteners Ltd.	2003.10.29	TVS Autolec
C.	Non-metallic mineral products		
8.	Asahi India Glass Ltd.	2003.01.21	Floatglass India
D.	Food and Beverage		
9.	Gujarat Ambuja Exports Ltd.	2003.07.25	Jupiter Biotech
E.	Textiles		
10.	Eastern Silk Inds. Ltd.	2004.07.19	Sstella Silks
II. SERVICE			
A.	Banking services		
11.	Oriental Bank Of Commerce	2004.07.26	Global Trust Bank
B.	Trading		
12.	Ricoh India Ltd.	2004.07.29	Gestetner (India)
C.	Information technology		
13.	Silicon Valley Infotech Ltd.	2005.01.17	Pentasoft Technologies Ltd.

Source: Prowess Data Base.

Tools Used

The present study attempts to measure and analyze the pre and post merger performance of acquirer and target companies by using liquidity ratios, namely, Current Ratio, Quick Ratio and Net Working Capital; leverage Ratios like, Solvency Ratio, Debt- Equity Ratio

and Interest Coverage Ratio; activity ratios like Fixed Asset Turnover Ratio and Total Asset Turnover Ratio and profitability ratios like Return on Networth, Return on Capital Employed, PB Ratio, PE Ratio, EBIT to Sales and EBIT to Fixed Assets in order to ascertain whether mergers resulted in increasing financial performance or not.

ANALYSIS OF FINANCIAL PERFORMANCE

Empirical tests were carried out on the collected financial data with the help of ratio analysis, t-test and standard deviation. The pre merger average performance of the acquirer and target companies were compared with the post merger performance of the combined firm. In order to study the financial performance of acquirer and target companies, ratios like Liquidity Ratio, Leverage Ratio, Activity Ratio, Profitability Ratio and t-test were used.

Liquidity Ratios

Liquidity ratios measure the ability of the firm to meet its current obligations (liabilities). A combined firm should ensure that it does not suffer from lack of liquidity, and also that it does not have excess liquidity.

Current Ratio

Current ratio is calculated by dividing current assets by current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets include cash and those assets that can be converted into cash within a year, such as marketable securities, debtors and inventories. All obligations maturing within a year are included in current liabilities. It is a measure of the firm's short-term solvency. It indicates the availability of current assets in rupees for every one rupee of current liability. A ratio of greater than one means that the firm has more current assets than current claims against them.

Table 2 shows the current ratio of sample acquirer and target companies' pre merger average performance and post merger combined performance. The standard current ratio is 2:1, i.e. 2/3 of current assets and 1/3 of current liabilities. It is understood from the Table that the calculated current ratio (average of three years) of acquirer and target companies like Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Sundram Fasteners Ltd-TVS Autolec, Matrix Laboratories Ltd-Fine Drugs and

Chemicals, Eastern Silk Inds Ltd-Sstella Silks, Ricoh India Ltd-Gestetner (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd. were high during the post merger period when compared to the pre merger period. Further, it is evident that the above eight companies improved their current ratio after merger and the other sample companies failed to perform well. The calculated current ratio of combined average performance of the acquirer and target companies, namely, Oriental Bank of Commerce-Global Trust Bank (4.65833), Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) (2.94833) in pre merger period and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd (32.25000) in post merger, was higher than the standard ratio of 2:1. This clearly brings out the fact that all the sample merged companies, except Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) (2.94833), was much higher than the standard ratio before merger. The result of standard deviation clearly shows the fact that the variation in current ratio of all merged companies, except Asahi India Glass Ltd-Floatglass India, Supreme Industries Ltd-Siltap Chemicals, Oriental Bank of Commerce-Global Trust Bank and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd, were higher than that of pre merger period. As revealed by the Table, few sample merged companies were significantly different in the pre and post merger period at 5 per cent level of significance. The t-values of sample merged companies, namely, Asahi India Glass Ltd-Floatglass India and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), showed significant difference between pre merger and post merger performance at 5 per cent level of significance. Only Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd has registered a significant difference in its pre and post merger values at 10 per cent level of significance. Hence, the average pre merger current ratio of companies like Asahi India Glass Ltd-Floatglass India, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd increased significantly after merger.

Quick Ratio

Quick ratio, also called acid-test ratio, establishes a relationship between quick or liquid assets and current liabilities. If an asset is liquid, it can be converted into cash immediately or reasonably soon without a loss of value. Other assets that are considered to be relatively liquid and included in quick assets are debtors and bills receivables and marketable securities. The quick ratio is found out by dividing quick assets by current liabilities.

$$\text{Quick Ratio} = \frac{\text{Current Assets} \quad \text{Inventories}}{\text{Current Liabilities}}$$

Table 2: Current Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Current Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre and Inds. Ltd.	Vikrant Tyres	1.01667 (0.65108)	0.93333 (0.01155)	0.30584
2	Asahi India Glass Ltd.	Floatglass India	0.53167 (0.25701)	1.15667 (0.37501)	1.94438**
3	Tata Chemicals Ltd.	Hind Lever Chemicals	1.68667 (0.29098)	1.73333 (0.24194)	0.18055
4	Supreme Industries Ltd.	Siltap Chemicals	1.30000 (0.33853)	1.11333 (0.35346)	0.54537
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	1.55667 (0.30526)	1.42000 (0.07937)	0.80180
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	0.92333 (0.21741)	1.08000 (0.10536)	1.04735
7	Sundram Fasteners Ltd.	TVS Autolec	1.12333 (0.17851)	1.26667 (0.15822)	0.87278
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	2.94833 (1.76241)	1.36000 (0.05196)	2.11919**
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	0.83667 (0.70554)	1.39000 (0.39837)	1.06814
10	Eastern Silk Inds. Ltd.	Sstella Silks	1.50833 (0.44960)	1.75333 (0.16289)	0.88259
11	Oriental Bank of Commerce	Global Trust Bank	4.65833 (1.25118)	3.84333 (1.56721)	0.57572
12	Ricoh India Ltd.	Gestetner (India)	1.33000 (0.49457)	1.66000 (0.39850)	0.76392
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	10.87167 (9.35350)	32.25000 (14.58908)	1.74637***

Source: Computed from PROWESS

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

The quick ratio of sample acquirer and target companies during pre merger and post merger period is given in Table 3. The calculated quick ratio (average of three years) of merged sample companies like JK Tyre and Inds Ltd-Vikrant Tyres, Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds Ltd-Sstella Silks and Ricoh India Ltd-Gestetner (India) was better during the post merger period when compared to the pre merger period. Further, it is evident that the pre merger average performance of seven acquirer and target companies (JK Tyre and Inds. Ltd-Vikrant Tyres, Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds. Ltd-Sstella Silks and Ricoh India Ltd-Gestetner (India)) was higher than the combined performance of the same acquirer and target companies during the post merger period and the other companies (Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Sundram Fasteners Ltd-TVS Autolec, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Oriental Bank of Commerce-Global Trust Bank and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd) failed to perform better. The calculated quick ratio of Oriental Bank of Commerce-Global Trust Bank (3.53833), Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) (1.53500), Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd (1.52500) in the pre merger period, was higher than the standard ratio (1:1). This clearly brings out the fact that all sample companies after merger was lower than the standard ratio. Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd alone earned the negative ratio of –1.37333 in the post merger period and it depicts that the company failed to maintain sufficient cash to meet its current requirements. The result of standard deviation of merged companies clearly shows that the variation in the quick ratio during the post merger period was higher than the pre merger period in the case of Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, Matrix Laboratories Ltd-Fine Drugs and Chemicals, Oriental Bank of Commerce-Global Trust Bank, Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd. The application of t-test revealed that few sample merged companies like Asahi India Glass Ltd-Floatglass India was significant at 5 per cent level and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) and Matrix Laboratories Ltd-Fine Drugs and Chemicals were significant at 10 per cent level in their quick ratio. This leads to the conclusion that the average quick ratio of sample companies like Asahi India Glass Ltd-Floatglass India, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) and Matrix Laboratories Ltd-Fine Drugs and Chemicals was statistically significant after merger.

Table 3: Quick Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Quick Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre and Inds. Ltd.	Vikrant Tyres	0.48167 (0.34085)	0.51333 (0.06110)	0.18155
2	Asahi India Glass Ltd.	Floatglass India	0.12000 (0.06000)	0.39333 (0.14048)	2.58842**
3	Tata Chemicals Ltd.	Hind Lever Chemicals	0.64167 (0.18346)	0.77667 (0.44117)	0.40958
4	Supreme Industries Ltd.	Siltap Chemicals	0.59833 (0.25686)	0.50000 (0.15716)	0.50273
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	0.41167 (0.11652)	0.48333 (0.21572)	0.41639
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	0.36833 (0.13106)	0.29000 (0.06557)	0.85737
7	Sundram Fasteners Ltd.	TVS Autolec	0.63667 (0.12323)	0.62000 (0.09644)	0.15725
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	1.53500 (1.39434)	0.42667 (0.12014)	1.73557***
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	0.23167 (0.24991)	0.59667 (0.26652)	1.42632***
10	Eastern Silk Inds. Ltd.	Sstella Silks	0.28500 (0.46899)	0.59333 (0.14503)	1.12041
11	Oriental Bank Of Commerce	Global Trust Bank	3.53833 (0.92506)	3.02000 (1.15182)	0.49713
12	Ricoh India Ltd.	Gestetner (India)	0.56833 (0.28527)	0.82333 (0.26502)	0.94632
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	1.52500 (1.50177)	–1.37333 (2.50001)	1.40937

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Net Working Capital

The difference between current assets and current liabilities, excluding short-term bank borrowings, is called Net Working Capital (NWC) or Net Current Assets (NCA).

NWC is sometimes used as a measure of a firm's liquidity. It is considered that between two firms, the one having the larger NWC has the greater ability to meet its current obligations. NWC, however, measures the firm's potential reservoir of funds.

Net Working Capital = Current Assets – Current Liabilities

The average Net Working Capital of sample acquirer and target companies and combined average performance during pre and post periods is provided in Table 4. The amount of working capital required depends upon the length of operating cycle. The operating cycle for a manufacturing company is the time taken for conversion of raw material into cash and vice versa and for trading firm, converting inventories into cash and vice versa. During pre merger, the average performance of the acquirer and target companies like JK Tyre and Inds Ltd-Vikrant Tyres, Supreme Industries Ltd-Siltap Chemicals and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd was high when compared to the post merger period. Further, it is evident that ten sample companies (Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, TVS Motor Co. Ltd-Lakshmi Auto Components, Sundram Fasteners Ltd-TVS Autolec, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds. Ltd-Sstella Silks, Oriental Bank of Commerce-Global Trust Bank and Ricoh India Ltd-Gestetner (India)) improved their Working Capital after merger. This means that these companies enjoyed sufficient current assets to meet current liabilities. The result of standard deviation clearly establishes the fact that the variation of Working Capital of all merged companies except Tata Chemicals Ltd-Hind Lever Chemicals, Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Sundram Fasteners Ltd-TVS Autolec, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals, Oriental Bank of Commerce-Global Trust Bank and Ricoh India Ltd-Gestetner (India) were higher than that of pre merger period. It is understood from the t-test that Gujarat Ambuja Exports Ltd-Jupiter Biotech and Sundram Fasteners Ltd-TVS Autolec were significant at 1 per cent level, while Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Eastern Silk Inds Ltd-Sstella Silks and Ricoh India Ltd-Gestetner (India) were significant at 5 per cent level and Matrix Laboratories Ltd-Fine Drugs&Chemicals and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd' were significant at 10 per cent level. It reveals the fact that few sample merged companies (Gujarat Ambuja Exports Ltd-Jupiter Biotech, Sundram Fasteners Ltd-TVS Autolec, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Eastern Silk Inds Ltd-Sstella Silks, Ricoh India Ltd-Gestetner (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd) achieved significant growth with respect to Working Capital.

Table 4: Net Working Capital of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Net Working Capital*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre and Inds. Ltd.	Vikrant Tyres	–6.52000 (79.71325)	–55.14333 (7.10895)	1.32680
2	Asahi India Glass Ltd.	Floatglass India	–105.86833 (97.87302)	8.26333 (72.23646)	1.39761
3	Tata Chemicals Ltd.	Hind Lever Chemicals	392.02833 (242.50902)	723.32333 (413.70653)	0.98058
4	Supreme Industries Ltd.	Siltap Chemicals	12.32000 (12.99930)	9.32667 (49.04935)	0.08902
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	14.91333 (16.20839)	85.19333 (3.12468)	8.34572*
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	8.64833 (27.90657)	49.11667 (62.98160)	0.84741
7	Sundram Fasteners Ltd.	TVS Autolec	9.99833 (14.36659)	75.24333 (18.09072)	4.00035*
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	174.95333 (73.92218)	487.28667 (185.25466)	2.27755**
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	11.83000 (26.48213)	130.65667 (126.06576)	1.42145***
10	Eastern Silk Inds. Ltd.	Sstella Silks	41.80667 (43.16577)	140.04333 (39.74625)	2.42142**
11	Oriental Bank Of Commerce	Global Trust Bank	2029.56667 (860.38926)	5226.72333 (2653.20672)	1.69783
12	Ricoh India Ltd.	Gestetner (India)	5.30833 (13.16943)	40.11333 (16.97256)	2.29350**
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	98.67167 (106.99226)	25.02667 (1.42360)	1.65489***

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Leverage Ratios

The long term creditors like debenture holders, financial institutions, etc., are more concerned with a firm's long term financial strength. To judge the long term financial position of the firm, financial leverage or capital structure ratios are calculated.

Solvency Ratio

The solvency ratio measures the size of a company's after-tax income, excluding non-cash depreciation expenses, as compared to the firm's total debt obligations. It provides a measurement of how likely a company will be to continue meeting its debt obligations. The measure is usually calculated as follows:

$$\text{Solvency Ratio} = \frac{\text{After Tax Net Profit} + \text{Depreciation}}{\text{Long Term Liabilities} + \text{Short Term Liabilities}}$$

The solvency ratio measures the size of a company's after-tax income excluding non-cash depreciation expenses, as compared to the firm's total debt obligations. Table 5 explains the solvency ratio of sample acquirer and target companies during pre and post merger periods. Higher ratio indicates that a company is most likely to meet its debt obligations. From the table it is clear that the calculated (three years average) Solvency Ratio of merged companies like JK Tyre and Inds Ltd-Vikrant Tyres (1.30667), Asahi India Glass Ltd-Floatglass India (1.31000), Tata Chemicals Ltd-Hind Lever Chemicals (3.24333), TVS Motor Co. Ltd-Lakshmi Auto Components (2.08333), Matrix Laboratories Ltd-Fine Drugs and Chemicals (2.74333), Eastern Silk Inds. Ltd-Sstella Silks (2.33333) and Ricoh India Ltd-Gestetner (India) (2.19333) was higher during the post merger period when compared to the pre merger period. The Oriental Bank of Commerce-Global Trust Bank gained the highest ratio of 20.61833 and 18.25000 in pre merger as well as post merger period respectively. It is important to note that all the sample companies earned the solvency ratio more than one time in the post merger period. This indicates the fact that these sample companies were in a position to meet its long term as well as short term requirements. The result of standard deviation clearly explains that the variation of Solvency Ratio of the merged companies like Tata Chemicals Ltd-Hind Lever Chemicals, Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds. Ltd-Sstella Silks, Ricoh India Ltd-Gestetner (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd was higher than that of pre merger period. The application of t-test explains that four sample merged companies (Gujarat Ambuja Exports Ltd-Jupiter Biotech, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals and Eastern Silk Inds Ltd-Sstella Silks) recorded significant differences between pre merger and post merger performance at 5 per cent level of significance. Only two companies (Tata Chemicals Ltd-Hind Lever Chemicals, Sundram Fasteners Ltd-TVS Autolec and Ricoh India Ltd-Gestetner (India)) registered significant difference in its pre and post merger values at 10 per cent level in their Solvency Ratio. This result establishes that the average Solvency Ratio of Gujarat Ambuja Exports Ltd-Jupiter Biotech, Glaxosmithkline

Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds Ltd-Sstella Silks, Tata Chemicals Ltd-Hind Lever Chemicals, Sundram Fasteners Ltd-TVS Autolec and Ricoh India Ltd-Gestetner (India) increased significantly during the post merger period.

Table 5: Solvency Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Solvency Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre and Inds. Ltd.	Vikrant Tyres	1.19000 (0.59383)	1.30667 (0.00577)	0.47471
2	Asahi India Glass Ltd.	Floatglass India	1.17167 (0.10998)	1.31000 (0.09165)	1.41422
3	Tata Chemicals Ltd.	Hind Lever Chemicals	2.07500 (0.45925)	3.24333 (0.89030)	1.66547***
4	Supreme Industries Ltd.	Siltap Chemicals	1.87000 (0.54321)	1.50667 (0.12662)	1.23218
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	4.59333 (2.12635)	2.26000 (0.21932)	2.34577**
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	1.99500 (0.24354)	2.08333 (0.17214)	0.44431
7	Sundram Fasteners Ltd.	TVS Autolec	2.07667 (0.32010)	1.76667 (0.11240)	1.58507***
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	5.10833 (2.09435)	3.05333 (0.26539)	2.03821**
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	1.11333 (0.46556)	2.74333 (0.95845)	2.19255**
10	Eastern Silk Inds. Ltd.	Sstella Silks	1.52167 (0.36913)	2.33333 (0.37287)	2.21783**
11	Oriental Bank of Commerce	Global Trust Bank	20.61833 (14.78339)	18.25000 (2.09000)	0.32703
12	Ricoh India Ltd.	Gestetner (India)	1.45500 (0.36159)	2.19333 (0.48211)	1.73331***
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	7.40833 (1.50417)	7.21000 (2.20245)	0.10518

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Debt-Equity Ratio

The relationship describing the lenders' contribution for each rupee of the owners' contribution is called debt-equity ratio. Debt-equity ratio is directly computed by dividing the total debt by Networth.

$$\text{Debt- Equity Ratio} = \frac{\text{Total Debt}}{\text{Networth}}$$

Table 6 tabulates the average Debt-Equity Ratio of sample acquirer and target companies, and combined ratio during pre and post periods. A high debt-equity ratio means that claims of creditors are greater than those of owners. A high level of debt introduces inflexibility in the firm's operations due to the increasing interface and pressure from creditors, and constraints on the managements' independent functioning and energies. In the present analysis, four sample company mergers like, Asahi India Glass Ltd-Floatglass India (7.79333), Eastern Silk Inds. Ltd-Sstella Silks (2.50333), Oriental Bank of Commerce-Global Trust Bank (21.12667) and Ricoh India Ltd-Gestetner (India) (3.32000) earned more than two times during pre merger. It shows that the outsiders' capital proportion was more than the owners' proportion. The calculated (three years average) Debt-Equity Ratio of five merged companies, JK Tyre & Industries Ltd-Vikrant Tyres, Supreme Industries Ltd-Siltap Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, Sundram Fasteners Ltd-TVS Autolec, and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd were high during the post merger period when compared to the pre merger period. It establishes that the lenders' contribution were 1.96333, 1.36667, 0.75667, 1.14000 and 0.11000 times of owners' contribution respectively. This indicates that the lenders of the above companies have contributed more funds to the merged companies than owners. This relationship describes that the lenders' contribution for each rupee of the owners' contribution in the capital mix of the company was higher. The other merged sample companies reduced their debt capital after the merger activity. A low debt-equity ratio implies a greater claim of owners than creditors. From the point of view of creditors, it represents a satisfactory situation since a high proportion of equity provides a larger margin of safety for them. The result of standard deviation confirmed that the variation of Debt-Equity Ratio of all merged sample companies except Gujarat Ambuja Exports Ltd-Jupiter Biotech, TVS Motor Co. Ltd-Lakshmi Auto Components and Matrix Laboratories Ltd-Fine Drugs and Chemicals were higher than that of pre merger period. The application of t-test reveals that few sample merged companies, namely, JK Tyre & Industries Ltd-Vikrant Tyres, Asahi India Glass Ltd-Floatglass India and Sundram Fasteners Ltd-TVS Autolec were significant at 10 per cent level and Gujarat Ambuja Exports Ltd-Jupiter Biotech,

Eastern Silk Inds. Ltd-Sstella Silks and Ricoh India Ltd-Gestetner (India) were significant at 5 per cent level in their Debt-Equity Ratio. This leads to the conclusion that the average Debt-Equity Ratio of acquirer and target companies during the pre merger increased significantly in the combined post merger.

Table 6: Debt-Equity Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Debt-Equity Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	1.34667 (0.79969)	1.96333 (0.12583)	1.54506***
2	Asahi India Glass Ltd.	Floatglass India	7.79333 (6.69287)	2.69333 (0.95845)	1.55217***
3	Tata Chemicals Ltd.	Hind Lever Chemicals	0.53333 (0.24590)	0.51333 (0.14048)	0.11020
4	Supreme Industries Ltd.	Siltap Chemicals	1.07000 (0.76074)	1.36667 (0.35838)	0.57329
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	0.20667 (0.19054)	0.75667 (0.23798)	2.55594**
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	0.54500 (0.16574)	0.35333 (0.17616)	1.13164
7	Sundram Fasteners Ltd.	TVS Autolec	0.74000 (0.28872)	1.14000 (0.21000)	1.67285***
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	0.01833 (0.03601)	0.00333 (0.00577)	0.83176
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	0.59000 (0.26287)	0.47000 (0.60008)	0.26445
10	Eastern Silk Inds. Ltd.	Sstella Silks	2.50333 (2.29035)	0.46000 (0.09644)	2.06250**
11	Oriental Bank of Commerce	Global Trust Bank	21.12667 (50.05143)	0.38333 (0.04619)	1.01384
12	Ricoh India Ltd.	Gestetner (India)	3.32000 (3.61520)	0.11667 (0.10408)	2.08552**
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	0.10167 (0.02714)	0.11000 (0.00000)	0.75207

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Interest Coverage Ratio

The interest coverage or the times-interest-earned is used to test the firm's debt servicing capacity. The interest coverage ratio shows the number of times the interest charges are covered by funds that are ordinarily available in the firm. A higher ratio is desirable. But too high a ratio indicates that the firm is very conservative in using debt, and that it is not using credit to the best advantage of shareholders. A lower ratio indicates excessive use of debt, or inefficient operations. The interest coverage ratio is computed by dividing earnings before interest and taxes (EBIT) by interest charges:

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}}$$

Table 7 shows the Interest Coverage Ratio of sample acquirer and target companies during pre and post merger periods. All the merged companies, except Supreme Industries Ltd-Siltap Chemicals, earned high ratio during the post merger when compared to the pre merger. Among these companies, Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd earned the negative ratio both in pre (–11.25167) and post merger (–7.75000) and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) earned a high ratio of 120.85000. It is clear that JK Tyre & Industries Ltd-Vikrant Tyres and Oriental Bank of Commerce-Global Trust Bank earned the lowest ratio in the post merger 1.21667 and 1.45667 respectively. The result of standard deviation clearly shows the fact that the variation of Interest Coverage Ratio during the post merger period was higher than that of the pre merger period in the case of Asahi India Glass Ltd-Floatglass India, TVS Motor Co. Ltd-Lakshmi Auto Components, Sundram Fasteners Ltd-TVS Autolec, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals and Ricoh India Ltd-Gestetner (India). The application of t-test reveals that most of the sample merged companies, namely, Matrix Laboratories Ltd-Fine Drugs and Chemicals and Ricoh India Ltd-Gestetner (India) at one per cent level, Asahi India Glass Ltd-Floatglass India and Eastern Silk Inds Ltd-Sstella Silks at five per cent level were significant. Supreme Industries Ltd-Siltap Chemicals, Sundram Fasteners Ltd-TVS Autolec, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd were significant at 10 per cent. The overall analysis takes us to the conclusion that the average Interest Coverage Ratios of those companies increased statistically significant after merger.

Table 7: Interest Coverage Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Interest Coverage Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	0.94833 (0.87971)	1.21667 (0.15177)	0.60061
2	Asahi India Glass Ltd.	Floatglass India	1.76667 (1.72874)	16.65333 (10.21832)	2.25374**
3	Tata Chemicals Ltd.	Hind Lever Chemicals	4.23167 (4.93799)	7.23333 (4.85792)	0.62267
4	Supreme Industries Ltd.	Siltap Chemicals	4.44667 (3.83562)	1.49667 (0.30089)	1.69579***
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	3.16000 (3.19764)	4.57667 (0.30039)	0.95795
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	7.38500 (5.68205)	16.75000 (7.47440)	1.41145
7	Sundram Fasteners Ltd.	TVS Autolec	3.88500 (3.38385)	11.69000 (5.06506)	1.81269***
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	34.04000 (41.87087)	120.85000 (69.29964)	1.52021***
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	1.50500 (2.29720)	15.47333 (6.33891)	3.03818*
10	Eastern Silk Inds. Ltd.	Sstella Silks	1.86333 (0.73793)	3.33667 (0.53163)	2.42245**
11	Oriental Bank Of Commerce	Global Trust Bank	0.96000 (0.43672)	1.45667 (0.32393)	1.35957
12	Ricoh India Ltd.	Gestetner (India)	1.99833 (1.36334)	12.17000 (2.28322)	5.42547*
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	–11.25167 (27.65530)	–7.75000 (2.53722)	0.27453

Source: Computed from PROWESS.

Figures in parenthes denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Activity Ratios

Funds are invested in various assets to generate sales and profits. Activity Ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. These ratios are also called Turnover Ratios because they indicate the speed with which assets are being converted or turned over into sales.

Fixed Assets Turnover Ratio

Assets are used to generate sales. Therefore, a firm should manage its assets efficiently to maximize sales. The relationship between sales and assets is called assets turnover. A firm's ability to produce a large volume of sales for a given amount of net sales is the most important aspect of its operating performance. The firm can compute fixed assets turnover simply by dividing sales by fixed assets.

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

Table 8 shows the Fixed Assets Turnover Ratio of sample acquirer and target companies during pre and post merger periods. Higher ratio represents better utilization of the fixed assets. It is understood that the calculated Fixed Assets Turnover Ratio of merged companies like Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds Ltd-Sstella Silks and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd were higher during the pre merger period rather than in the post merger period. Further, it is evident that eight sample companies like Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Oriental Bank of Commerce-Global Trust Bank and Ricoh India Ltd-Gestetner (India) improved their Fixed Assets Turnover Ratio after merger with high ratios earned. This means that for generating a sale of one rupee, the companies, namely, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Oriental Bank of Commerce-Global Trust Bank and Ricoh India Ltd-Gestetner (India) had to spend ₹ 14,33401, ₹ 15,74858 and ₹ 18,68896 respectively for investment in fixed assets. It is found that Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd did not utilize the fixed assets to improve the sales during the post merger period. The result of standard deviation clearly shows the fact that the variation of Fixed Assets Turnover Ratio of all merged companies, except Supreme Industries Ltd-Siltap Chemicals, were lower than that of pre merger period. It is significant that standard deviation for Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd was zero. As revealed by the Table, few sample merged companies were significantly different in the pre and post merger period at 5 per cent level of significance. The t-values of sample merged companies, namely, Sundram Fasteners Ltd-TVS Autolec and Ricoh India Ltd-Gestetner (India) were significantly different in pre merger and post merger performance at 5 per cent level of significance. Tata Chemicals Ltd-Hind Lever Chemicals, Supreme Industries

Ltd-Siltap Chemicals and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd registered a significant difference in its pre and post merger values at 10 per cent level of significance in their Fixed Assets Turnover Ratio. Hence, the average Fixed Assets Turnover Ratio of those companies increased significantly after merger. But the other eight merged companies earned insignificant returns.

Table 8: Fixed Assets Turnover Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Fixed Assets Turnover Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	1.38157 (0.69959)	1.46102 (0.12429)	0.22234
2	Asahi India Glass Ltd.	Floatglass India	1.48635 (0.96695)	1.42341 (0.23990)	0.11803
3	Tata Chemicals Ltd.	Hind Lever Chemicals	4.20902 (3.91503)	1.42056 (0.50355)	1.47613***
4	Supreme Industries Ltd.	Siltap Chemicals	1.77785 (0.20678)	2.29169 (0.39140)	1.65545***
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	4.73934 (3.20365)	6.56691 (0.81945)	1.02615
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	2.71798 (1.96108)	3.86646 (0.14208)	1.30119
7	Sundram Fasteners Ltd.	TVS Autolec	2.34779 (0.22856)	2.84271 (0.18072)	2.50406**
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	13.27541 (4.35413)	14.33401 (1.80169)	0.37569
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	2.09495 (1.78700)	1.85185 (0.13328)	0.30143
10	Eastern Silk Inds. Ltd.	Sstella Silks	5.36682 (5.76366)	2.31948 (0.27223)	1.21399
11	Oriental Bank Of Commerce	Global Trust Bank	13.66641 (12.16978)	15.74858 (7.71715)	0.22095
12	Ricoh India Ltd.	Gestetner (India)	10.90318 (6.46014)	18.68896 (1.33716)	2.28366**
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	0.30423 (0.39088)	0.00000 (0.00000)	1.90648***

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Total Assets Turnover Ratio

The financial analysts normally like to compute the total assets turnover in addition to or instead of the fixed assets turnover. This ratio shows the firm's ability to generate sales from all financial resources committed to total assets. Total Assets (TA) include Net Fixed Assets (NFA) and Current Assets (CA) (TA = NFA + CA).

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

Table 9 shows the Total Assets Turnover Ratio of sample acquirer and target companies during pre and post merger periods. It is understood that the calculated Total Assets Turnover Ratio of merged sample companies like Supreme Industries Ltd-Siltap Chemicals (1.31700), Gujarat Ambuja Exports Ltd-Jupiter Biotech (2.39426), TVS Motor Co. Ltd-Lakshmi Auto Components (1.90228), Sundram Fasteners Ltd-TVS Autolec (1.12148) and Ricoh India Ltd-Gestetner (India) (1.33026) were more than one time and performed well during the post merger period when compared to the pre merger period. The highest Total Assets Turnover Ratio of 2.39426 times of Gujarat Ambuja Exports Ltd-Jupiter Biotech during the post merger period reveals that the merged entity generated a sale of ₹ 2.39 for one rupee investment in fixed and current assets together. During the pre merger period, Gujarat Ambuja Exports Ltd-Jupiter Biotech (1.63432), TVS Motor Co. Ltd-Lakshmi Auto Components (1.51415), Sundram Fasteners Ltd-TVS Autolec (1.06792) earned more than one time. The result of standard deviation clearly showed the fact that the variation of Total Assets Turnover Ratio of merged companies, namely, Supreme Industries Ltd-Siltap Chemicals and Oriental Bank of Commerce-Global Trust Bank, were higher than that of the pre merger period. The application of t-test revealed that few merged sample companies like Supreme Industries Ltd-Siltap Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech and Oriental Bank Of Commerce-Global Trust Bank were significant at 5 per cent level and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd were significant at 10 per cent level. These firms received significant t-value in their Total Assets Turnover Ratio. This leads to the conclusion that the average Total Assets Turnover Ratio of those companies increased significantly after merger.

Profitability Ratios

A company should earn profits to survive and grow over a long period of time. Hence, every action initiated by management, should aim at maximizing profits for expansion and growth. The financial manager should continuously evaluate the efficiency of the company in terms of profits.

Table 9: Total Assets Turnover Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Total Assets Turnover Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	0.63396 (0.32851)	0.80393 (0.06403)	0.99356
2	Asahi India Glass Ltd.	Floatglass India	0.87587 (0.46025)	0.89095 (0.09011)	0.06287
3	Tata Chemicals Ltd.	Hind Lever Chemicals	1.05247 (0.73467)	0.60447 (0.10937)	1.23391
4	Supreme Industries Ltd.	Siltap Chemicals	0.88368 (0.10369)	1.31700 (0.19313)	2.81680**
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	1.63432 (0.70364)	2.39426 (0.10062)	2.20050**
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	1.51415 (0.84921)	1.90228 (0.23852)	0.80126
7	Sundram Fasteners Ltd.	TVS Autolec	1.06792 (0.07756)	1.12148 (0.03184)	1.07014
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	0.96176 (0.35861)	0.62022 (0.06158)	1.87701***
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	0.89368 (0.46375)	0.71295 (0.21105)	0.58080
10	Eastern Silk Inds. Ltd.	Sstella Silks	0.75797 (0.39175)	0.79653 (0.01521)	0.22853
11	Oriental Bank of Commerce	Global Trust Bank	0.10882 (0.00925)	0.08338 (0.01203)	2.37374**
12	Ricoh India Ltd.	Gestetner (India)	1.37241 (0.50256)	1.33026 (0.14797)	0.14504
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	0.08707 (0.11357)	0.00000 (0.00000)	1.87787***

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Return on Networth

The common or ordinary shareholders are entitled to the residual profits. The earnings may be distributed to shareholders or retained in the business. Nevertheless, the net profits after taxes represent their returns. Return on shareholders' equity is calculated to see the profitability of owners' investment. The shareholders' equity or networth will include paid-up share capital, share premium and reserves and surplus less accumulated losses. Networth can also be found by subtracting total liabilities from total assets. The return on Networth is calculated as below.

$$\text{Return on Networth} = \frac{\text{Profit after Taxes}}{\text{Networth (Equity)}}$$

The Return on Networth of sample acquirer and target companies during pre and post merger periods is given in Table 10. It is clear from the Table that the calculated average Return on Networth of merged companies like Tata Chemicals Ltd-Hind Lever Chemicals, Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd, over a period of three years were not high during the post merger period when compared to the pre merger period. The Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd earned negative returns of –2.35667 on networth in the post merger period. It depicts that the above company did not properly utilize its equity capital after merger. It is important to note that JK Tyre & Industries Ltd-Vikrant Tyres, Asahi India Glass Ltd-Floatglass India and Oriental Bank Of Commerce-Global Trust Bank recovered from negative returns (–1.38000, –19.49833 and –29.81500 respectively) to positive returns (3.51000, 53.17667 and 18.54667 respectively) due to merger. The standard deviation explains the fact that the variation of Return on Networth of all merged sample companies, except Ricoh India Ltd-Gestetner (India), were lower during the post merger period. The function of t-test reveals that few sample merged companies like Gujarat Ambuja Exports Ltd-Jupiter Biotech and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) were significant at one per cent level and Asahi India Glass Ltd-Floatglass India, Sundram Fasteners Ltd-TVS Autolec and Eastern Silk Inds. Ltd-Sstella Silks were significant at five per cent level in their Return on Networth. Thus, it is concluded that the average Return on Networth of those companies (Gujarat Ambuja Exports Ltd-Jupiter Biotech, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Asahi India Glass Ltd-Floatglass India, Sundram Fasteners Ltd-TVS Autolec and Eastern Silk Inds. Ltd-Sstella Silks) increased statistically significant after merger.

Return on Capital Employed

Return on Capital Employed indicates the percentage of returns on the total capital employed in the business. The fund employed in net assets is known as capital employed. The net assets equal to net fixed assets plus current assets minus current

liabilities excluding bank loans. Alternatively, capital employed is equal to net worth plus total debt.

$$\text{Return on Capital Employed} = \frac{\text{Operating Profit}}{\text{Total Capital Employed}}$$

Table 10: Return on Networth of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Return on Networth*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	–1.38000 (10.87629)	3.51000 (1.36451)	0.93534
2	Asahi India Glass Ltd.	Floatglass India	–19.49833 (82.75822)	53.17667 (6.16803)	1.94594**
3	Tata Chemicals Ltd.	Hind Lever Chemicals	10.88167 (8.38397)	9.53667 (1.04290)	0.33417
4	Supreme Industries Ltd.	Siltap Chemicals	13.80833 (8.27957)	8.64667 (2.45178)	1.07632
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	2.83833 (2.12431)	12.23667 (0.38760)	8.61421*
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	23.36167 (7.69826)	19.90667 (7.06486)	0.47842
7	Sundram Fasteners Ltd.	TVS Autolec	11.94333 (11.23960)	24.75000 (3.65813)	1.91128**
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	15.19000 (4.25223)	30.70667 (2.26752)	5.09559*
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	38.98167 (46.19580)	45.92000 (38.95082)	0.16780
10	Eastern Silk Inds. Ltd.	Sstella Silks	9.32167 (5.06923)	17.55333 (2.70230)	2.26788**
11	Oriental Bank of Commerce	Global Trust Bank	–29.81500 (88.44954)	18.54667 (10.07435)	1.15351
12	Ricoh India Ltd.	Gestetner (India)	12.50500 (14.68128)	22.80667 (20.02689)	0.58678
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	–0.04667 (4.12596)	–2.35667 (2.43247)	0.74786

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Table 11 reveals the Return on Capital Employed of sample acquirer and target companies during pre and post merger periods. According to the Table, the calculated average Return on Capital Employed of three years of merged companies like Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Oriental Bank Of Commerce-Global Trust Bank and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd were better during the pre merger period rather than in the post merger period. Further, it is evident that nine sample companies out of thirteen companies improved their Return on Capital Employed after merger. This clearly brings out the fact that all sample companies, except Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd (–0.85667), earned positive returns from their total capital employed after the merger. The result of standard deviation clearly shows the fact that the variation of Return on Capital Employed of TVS Motor Co. Ltd-Lakshmi Auto Components was higher than that of pre merger period. The other merged companies show lower returns in the post merger period. The application of t-test reveals that few sample merged companies, namely, Gujarat Ambuja Exports Ltd-Jupiter Biotech and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) at one per cent level, Eastern Silk Inds Ltd-Sstella Silks at five per cent level and JK Tyre & Industries Ltd-Vikrant Tyres and Supreme Industries Ltd-Siltap Chemicals at 10 per cent level were significant in their Return on Capital Employed. This leads to the conclusion that the average Return on Capital Employed of companies (Gujarat Ambuja Exports Ltd-Jupiter Biotech, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Eastern Silk Inds Ltd-Sstella Silks, JK Tyre and Inds Ltd-Vikrant Tyres and Supreme Industries Ltd-Siltap Chemicals) recorded increased returns on capital employed significantly after merger.

Price to Book Value Ratio

One of the metrics the investors look into is the Price to Book Value Ratio or PB ratio. This measurement looks at the value that the market places on the book value of the company. The Price to Book Value is calculated by taking the current price per share and dividing it by the book value per share. Lower P/B indicates higher value. The investors would prefer stock with low PB ratio because they are potential candidates for growth in value. The book value per share is networth divided by the number of shares outstanding.

$$\text{Price to Book Value Ratio} = \frac{\text{Share Price}}{\text{Book Value per Share}}$$

Table 11: Return on Capital Employed of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Return on Capital Employed*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	7.47167 (5.51305)	13.82000 (3.70728)	1.44573***
2	Asahi India Glass Ltd.	Floatglass India	19.75333 (17.56358)	21.38000 (0.92601)	0.21112
3	Tata Chemicals Ltd.	Hind Lever Chemicals	15.50333 (6.08111)	15.78667 (0.47385)	0.10280
4	Supreme Industries Ltd.	Siltap Chemicals	19.85833 (4.18697)	15.50667 (1.77647)	1.59112***
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	6.87833 (2.82240)	20.36000 (2.64153)	5.03549*
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	29.29000 (9.44753)	26.21667 (9.80008)	0.32300
7	Sundram Fasteners Ltd.	TVS Autolec	20.42500 (12.82595)	30.00667 (3.83683)	1.28589
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	25.71000 (5.85914)	48.99333 (3.80344)	5.07494*
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	32.21000 (40.13556)	43.08333 (24.00916)	0.35949
10	Eastern Silk Inds. Ltd.	Sstella Silks	15.85167 (9.19514)	26.40000 (2.76545)	1.97146**
11	Oriental Bank of Commerce	Global Trust Bank	82.66833 (42.55033)	74.23000 (19.39852)	0.29535
12	Ricoh India Ltd.	Gestetner (India)	39.98000 (32.02071)	42.10333 (21.11363)	0.08405
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	1.38000 (3.53949)	–0.85667 (0.44433)	1.31451

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Table 12 exhibits the PB Ratio of sample acquirer and target companies during pre and post merger periods. It is important to note that the calculated PB Ratio (average of three years) of all the merged companies except Oriental Bank of Commerce-Global Trust Bank (1.70333) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd (1.01333), was not healthy during the post merger period when compared to the pre merger period. Lower Price to Book value is better for the company. Market value per share is expected to be higher than the book value per share for growing and profit-making firms. Further, it is evident that three sample companies, namely, Asahi India Glass Ltd-Floatglass India (6.23667), Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) (8.11667) and Matrix Laboratories Ltd-Fine Drugs and Chemicals (6.17667), earned high price to book value after the merger activity. This clearly indicates that the companies' marketprice was lower than the book value. According to standard deviation, the variation of PB Ratio of all merged companies, except Asahi India Glass Ltd-Floatglass India, Oriental Bank Of Commerce-Global Trust Bank and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd, were higher than that of pre merger period. As explained by the Table, few sample merged companies were significantly different in the pre and post merger period at 10 per cent level of significance. The t-values of sample merged companies, namely, Asahi India Glass Ltd-Floatglass India and Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), showed significant difference between pre merger and post merger performance at 10 per cent level of significance. The companies like TVS Motor Co. Ltd-Lakshmi Auto Components, Matrix Laboratories Ltd-Fine Drugs and Chemicals and Eastern Silk Inds Ltd-Sstella Silks showed significant difference between pre merger and post merger performance at 5 per cent level of significance and Sundram Fasteners Ltd-TVS Autolec and Ricoh India Ltd-Gestetner (India) were significant at one per cent level. Hence, the average PB Ratio of those companies (Asahi India Glass Ltd-Floatglass India, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), TVS Motor Co. Ltd-Lakshmi Auto Components, Matrix Laboratories Ltd-Fine Drugs and Chemicals, Eastern Silk Inds Ltd-Sstella Silks, Sundram Fasteners Ltd-TVS Autolec and Ricoh India Ltd-Gestetner (India)) increased significantly after merger.

Price-Earnings Ratio

The price earnings ratio is widely used by the security analysts to value the firm's performance as expected by investors. It indicates investors' judgment or expectations about the firm's performance. Management is also interested in this market appraisal of the firm's performance and would like to find the causes if the PE ratio declines. Besides, P/E ratio reflects investors' expectations about the growth in the firm's earnings. The reciprocal of the earnings yield is called the price-earnings ratio. Thus:

$$\text{Price-Earnings Ratio} = \frac{\text{Market Value per Share}}{\text{Earnings per Share}}$$

Table 12: Price to Book Value Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	Acquirer	Target	Price to Book Value Ratio: Pre Merger Average	Price to Book Value Ratio: Post Merger	t-value
1	JK Tyre & Industries Ltd.	Vikrant Tyres	0.19000 (0.08602)	0.47667 (0.37448)	1.14063
2	Asahi India Glass Ltd.	Floatglass India	1.85667 (2.74736)	6.23667 (2.54323)	1.69116***
3	Tata Chemicals Ltd.	Hind Lever Chemicals	0.66667 (0.32531)	1.15000 (0.48000)	1.17905
4	Supreme Industries Ltd.	Siltap Chemicals	0.90500 (0.58425)	1.17667 (0.60169)	0.46367
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	0.31667 (0.27237)	0.58667 (0.36665)	0.83622
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	1.36333 (0.75195)	3.40333 (0.96625)	2.35880**
7	Sundram Fasteners Ltd.	TVS Autolec	0.99667 (0.36335)	4.48667 (0.88444)	5.29614*
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	3.00833 (2.22440)	8.11667 (3.10664)	1.89076***
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	–0.37000 (2.41855)	6.17667 (3.18814)	2.31491**
10	Eastern Silk Inds. Ltd.	Sstella Silks	0.29500 (0.27545)	1.11333 (0.47248)	2.12425**
11	Oriental Bank of Commerce	Global Trust Bank	11.75667 (27.48506)	1.70333 (0.52176)	0.87254
12	Ricoh India Ltd.	Gestetner (India)	–0.01333 (0.43725)	2.90000 (1.24435)	3.24812*
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	1.08333 (1.40762)	1.01333 (0.86489)	0.06518

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

The PE ratio of sample acquirer and target companies during pre and post merger periods is given in Table 13. It is understood from the Table that the calculated PE ratio (average of three years) of merged companies like JK Tyre & Industries Ltd-Vikrant

Tyres, Ricoh India Ltd-Gestetner (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd was healthy during the pre merger period rather than during the post merger period while other sample companies earned higher yield during the post merger period. But sample companies like JK Tyre & Industries Ltd-Vikrant Tyres, Ricoh India Ltd-Gestetner (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd earned negative price earnings of –10.13667 and –46.15333 respectively during the post merger. It depicts the fact that these companies failed to fulfil the expectations of investors after merger. It is important that Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) and Ricoh India Ltd-Gestetner (India) earned high ratio of 26.86333 and 21.34000 respectively when compared to other companies in the post merger. But the ratio of 21.34000 earned by Ricoh India Ltd-Gestetner (India) was low with respect to pre merger earnings. The result of standard deviation clearly shows the fact that the variation of PE ratio of all merged companies except JK Tyre & Industries Ltd-Vikrant Tyres, Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Matrix Laboratories Ltd-Fine Drugs and Chemicals and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd was low than that of pre merger period. The function of t-test brought out the fact that few sample merged companies like Matrix Laboratories Ltd-Fine Drugs and Chemicals were significant at one per cent level, Oriental Bank Of Commerce-Global Trust Bank was significant at five per cent level and Sundram Fasteners Ltd-TVS Autolec was significant at 10 per cent. Hence, the average PE ratio of those companies (Matrix Laboratories Ltd-Fine Drugs and Chemicals, Oriental Bank of Commerce-Global Trust Bank and Sundram Fasteners Ltd-TVS Autolec) increased PE Ratio significantly after merger. But the other merged companies (JK Tyre & Industries Ltd-Vikrant Tyres, Asahi India Glass Ltd-Floatglass India, Tata Chemicals Ltd-Hind Lever Chemicals, Supreme Industries Ltd-Siltap Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, TVS Motor Co. Ltd-Lakshmi Auto Components, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Eastern Silk Inds. Ltd-Sstella Silks, Ricoh India Ltd-Gestetner (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd) recorded insignificant ratio.

EBIT to Sales

The EBIT to Sales Ratio determines the efficiency of the management in manufacturing, administering and selling the products and it is the overall measure of the firm's ability to turn each rupee sales into EBIT. This ratio is otherwise called as Profit Margin Ratio. The EBIT to Sales Ratio is calculated on before tax basis as given below.

$$\text{EBIT to Sales} = \frac{\text{EBIT}}{\text{Sales}}$$

Table 13: Price-Earnings Ratio of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*Price-Earnings Ratio*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	1.33667 (3.05547)	–10.13667 (26.01256)	0.70537
2	Asahi India Glass Ltd.	Floatglass India	9.67333 (9.61486)	12.51000 (5.32282)	0.40533
3	Tata Chemicals Ltd.	Hind Lever Chemicals	6.82167 (4.86074)	8.94000 (1.87609)	0.69056
4	Supreme Industries Ltd.	Siltap Chemicals	7.87500 (2.80122)	13.57000 (7.87002)	1.00134
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	–2.04833 (12.91046)	5.13667 (3.33746)	0.99826
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	8.50833 (8.36796)	18.23333 (8.91514)	1.13565
7	Sundram Fasteners Ltd.	TVS Autolec	–3.10667 (25.34410)	20.27333 (7.26659)	1.60775***
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	21.82333 (17.54948)	26.86333 (7.07645)	0.44799
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	1.70833 (3.95372)	18.55667 (4.90461)	3.78974*
10	Eastern Silk Inds. Ltd.	Sstella Silks	4.48000 (5.45907)	6.70667 (1.75477)	0.68687
11	Oriental Bank of Commerce	Global Trust Bank	–0.96833 (8.51734)	7.66333 (0.68719)	2.22814**
12	Ricoh India Ltd.	Gestetner (India)	35.46667 (81.78414)	21.34000 25.91039)	0.29219
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	70.73667 (141.52624)	–46.15333 (169.91565)	0.74988

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

The EBIT to Sales Ratio determines whether the fixed costs are too high for the production volume. This ratio indicates the effect of fixed expenses on profitability. Table 14 shows the EBIT to Sales Ratio of sample acquirer and target companies during pre and post merger periods. It is clear from the above Table that the calculated EBIT to Sales (average of three years) of all merged companies increased due to merger except, Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd. The calculated EBIT to Sales Ratio of Oriental Bank of Commerce-Global Trust Bank (74.53333) was higher than other companies during post merger. The companies like Tata Chemicals Ltd-Hind Lever Chemicals (21.90333), Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) (27.70667) and Matrix Laboratories Ltd-Fine Drugs and Chemicals (28.40667) earned the EBIT to sales ratio more than twenty times. That is the effect of fixed expenses on profitability which was more due to merger activity. But Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd did not earn profit with respect to sales during post merger. The result of standard deviation clearly shows the fact that the variation of EBIT to Sales of all merged companies were lower than that of pre merger period. As discovered by the Table, some of the sample merged companies were significantly different in the pre and post merger period at 5 per cent level of significance. The t-values of sample merged companies, namely, Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals and Eastern Silk Inds. Ltd-Sstella Silks showed significant difference between pre merger and post merger performance at 5 per cent level of significance. Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd was significant at one per cent level. Hence, the average EBIT to Sales of sample companies (Supreme Industries Ltd-Siltap Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India), Matrix Laboratories Ltd-Fine Drugs and Chemicals and Eastern Silk Inds Ltd-Sstella Silks and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd) increased significantly after merger.

EBIT to Fixed Assets

EBIT to Fixed Assets is computed to know the productivity of the fixed assets. The Higher ratio represents more raw earnings potential of the company. The formula for computing it is given below.

$$\text{EBIT to Fixed Assets} = \frac{\text{EBIT}}{\text{Fixed Assets}}$$

Table 15 displays EBIT to Fixed Assets Ratio of sample acquirer and target companies during pre and post merger periods. The EBIT to Fixed Assets Ratio is computed to know the productivity of fixed assets. It is understood that the calculated average EBIT to Fixed Assets Ratio (three years) of all merged companies,

except Tata Chemicals Ltd-Hind Lever Chemicals, Supreme Industries Ltd-Siltap Chemicals and Eastern Silk Inds. Ltd-Sstella Silks, was high during the post merger period when compared to the pre merger period. Further, it is evident that three

Table 14: EBIT to Sales of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	*Acquirer*	*Target*	*EBIT to Sales*		*t-value*
			Pre Merger Average	*Post Merger*	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	7.36167 (4.80130)	8.98333 (1.57931)	0.56466
2	Asahi India Glass Ltd.	Floatglass India	16.16000 (4.66239)	19.52000 (2.16673)	1.06519
3	Tata Chemicals Ltd.	Hind Lever Chemicals	18.04167 (13.69827)	21.90333 (6.28623)	0.41876
4	Supreme Industries Ltd.	Siltap Chemicals	18.56333 (4.50289)	11.27667 (1.39307)	2.75740**
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	5.44833 (1.99260)	5.92000 (0.41581)	0.44769
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	19.00333 (12.42854)	8.07667 (1.13742)	1.90672**
7	Sundram Fasteners Ltd.	TVS Autolec	11.68667 (5.80336)	13.31667 (1.44500)	0.50882
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	17.77333 (5.52544)	27.70667 (3.08221)	2.46163**
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	12.01000 (14.44590)	28.40667 (3.85757)	2.01813**
10	Eastern Silk Inds. Ltd.	Sstella Silks	13.92333 (3.75274)	19.37667 (2.16172)	1.96155**
11	Oriental Bank of Commerce	Global Trust Bank	64.20667 (21.74076)	74.53333 (10.16723)	0.70032
12	Ricoh India Ltd.	Gestetner (India)	8.96667 (6.34713)	14.07667 (1.92646)	1.37980
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	20.91000 (10.90033)	0.00000 (0.00000)	4.69883*

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

Table 15: EBIT to Fixed Assets of Acquirer and Target Companies during Pre and Post Merger Period

Sl. No.	Acquirer	Target	EBIT to Fixed Assets		t-value
			Pre Merger Average	Post Merger	
1	JK Tyre & Industries Ltd.	Vikrant Tyres	0.15313 (0.09243)	0.16034 (0.02814)	0.13360
2	Asahi India Glass Ltd.	Floatglass India	0.29396 (0.20846)	0.32825 (0.09270)	0.24733
3	Tata Chemicals Ltd.	Hind Lever Chemicals	0.36363 (0.13543)	0.35373 (0.06675)	0.10556
4	Supreme Industries Ltd.	Siltap Chemicals	0.37085 (0.05657)	0.30180 (0.00967)	2.40777**
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	0.20379 (0.12709)	0.39257 (0.03460)	2.62712**
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	0.38405 (0.08532)	0.39124 (0.04070)	0.12330
7	Sundram Fasteners Ltd.	TVS Autolec	0.27067 (0.14588)	0.42276 (0.01713)	2.19015**
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	2.97720 (2.05037)	5.33630 (2.02166)	1.17704
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	0.32595 (0.40856)	0.59648 (0.07182)	1.29902
10	Eastern Silk Inds. Ltd.	Sstella Silks	0.59083 (0.57815)	0.45464 (0.08367)	0.47896
11	Oriental Bank Of Commerce	Global Trust Bank	10.10868 (9.45072)	12.60736 (7.45668)	0.30609
12	Ricoh India Ltd.	Gestetner (India)	0.62774 (0.18583)	3.17272 (0.47730)	7.24172*
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	0.22696 (0.32691)	0.43001 (0.67589)	0.38773

Source: Computed from PROWESS.

Figures in parenthesis denote the Standard Deviation.

* = Significant at 1% level, ** = Significant at 5% level, *** = Significant at 10% level

companies, namely, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) (5.33630), Oriental Bank of Commerce-Global Trust Bank (12.60736) and Ricoh India Ltd-Gestetner (India) (3.17272) had improved their EBIT by properly

utilizing their fixed assets after merger while other companies earned less than one. The analysis of standard deviation clearly shows the fact that the variation of EBIT to Fixed Assets Ratio of all merged companies, except Ricoh India Ltd-Gestetner (India) and Silicon Valley Infotech Ltd-Pentasoft Technologies Ltd, were lower than that of pre merger period. The appliance of t-test revealed that sample merged companies like Supreme Industries Ltd-Siltap Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech and Sundram Fasteners Ltd-TVS Autolec recorded significant values at 5 per cent level and Ricoh India Ltd-Gestetner (India) was significant at 1 per cent level in their EBIT to Fixed Assets Ratio. In the light of the above analysis, it is concluded that the average EBIT to Fixed Assets Ratio of companies like Supreme Industries Ltd-Siltap Chemicals, Gujarat Ambuja Exports Ltd-Jupiter Biotech, Sundram Fasteners Ltd-TVS Autolec and Ricoh India Ltd-Gestetner (India) increased significantly after merger. But the other nine merged companies earned insignificant returns.

"t"-value of Different Financial Variables in Connection with Sample Companies

Table 16 consolidates the t-values for different financial variables in connection with sample companies for the purpose of this study. As stated earlier, there are fourteen variables (ratios) in four groups. The Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) received significant t-value for all the variables except Debt-Equity Ratio, PE Ratio, EBIT to Fixed Assets and FA Turnover Ratio. In the case of Sundram Fasteners Ltd-TVS Autolec, variables like Current Ratio, Quick Ratio, Return on Capital Employed, EBIT to Sales and TA Turnover Ratio earned insignificant t-value. Gujarat Ambuja Exports Ltd-Jupiter Biotech, Matrix Laboratories Ltd-Fine Drugs and Chemicals and Ricoh India Ltd-Gestetner (India) earned significant values in seven variables; Asahi India Glass Ltd-Floatglass India and Supreme Industries Ltd-Siltap Chemicals earned significant values in six variables and JK Tyre & Industries Ltd-Vikrant Tyres, Tata Chemicals Ltd-Hind Lever Chemicals, TVS Motor Co. Ltd-Lakshmi Auto Components and Oriental Bank of Commerce-Global Trust Bank earned significant values in two variables. It is clear that seven sample companies earned significant values with respect to variables like Net Working Capital, Interest Coverage Ratio, PB Ratio and Solvency Ratio. Six companies earned significant t-values for Debt-Equity Ratio and EBIT to Sales, five companies for Return on Networth, Return on Capital Employed, FA Turnover Ratio, EBIT to Fixed Assets, and TA Turnover Ratio and for Current Ratio, Quick ratio and PE Ratio, three companies, earned significant t-values.

Table 16: "t" Value of Different Financial Variables in Connection with Sample Companies

Sl. No.	Acquirer	Target	Liquidity Ratios			Leverage Ratios			Activity Ratio		Profitability Ratios					
			CR	QR	NWC	SR	DER	ICR	FATR	TATR	RNW	RCE	PBVR	PER	EBIT-S	EBIT-FA
1	JK Tyre & Industries Ltd.	Vikrant Tyres	NS	NS	NS	NS	S	NS	NS	NS	NS	S	NS	NS	NS	NS
2	Asahi India Glass Ltd.	Floatglass India	S	S	NS	NS	S	S	NS	NS	S	NS	S	NS	NS	NS
3	Tata Chemicals Ltd.	Hind Lever Chemicals	NS	NS	NS	S	NS	NS	S	NS	NS	NS	NS	NS	NS	NS
4	Supreme Industries Ltd.	Siltap Chemicals	NS	NS	NS	NS	NS	S	S	S	NS	S	NS	NS	S	S
5	Gujarat Ambuja Exports Ltd.	Jupiter Biotech	NS	NS	S	S	S	NS	NS	S	S	S	NS	NS	NS	S
6	TVS Motor Co. Ltd.	Lakshmi Auto Components	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	S	NS	S	NS
7	Sundram Fasteners Ltd.	TVS Autolec	NS	NS	S	S	S	S	S	NS	S	NS	S	S	NS	S
8	Glaxosmithkline Pharmaceuticals Ltd.	Burroughs Wellcome (India)	S	S	S	S	NS	S	NS	S	S	S	S	NS	S	NS
9	Matrix Laboratories Ltd.	Fine Drugs and Chemicals	NS	S	S	S	NS	S	NS	NS	NS	NS	S	S	S	NS
10	Eastern Silk Inds. Ltd.	Sstella Silks	NS	NS	S	S	S	S	NS	NS	S	S	S	NS	S	NS
11	Oriental Bank of Commerce	Global Trust Bank	NS	NS	NS	NS	NS	NS	NS	S	NS	NS	NS	S	NS	NS
12	Ricoh India Ltd.	Gestetner (India)	NS	NS	S	S	S	S	S	NS	NS	NS	S	NS	NS	S
13	Silicon Valley Infotech Ltd.	Pentasoft Technologies Ltd.	S	NS	S	NS	NS	NS	S	S	NS	NS	NS	NS	S	NS

Source: Compiled from Table 2 to 15 S- Significant, NS- Not Significant.

CR-Current Ratio, QR- Quick Ratio, NWC- Net Working Capital, SR-Solvency Ratio, DER-Debt- Equity Ratio, ICR-Interest Coverage Ratio, FATR-Fixed Assets Turnover Ratio, TATR- Total Assets Turnover Ratio, RNW-Return on Networth, RCE-Return on Capital Employed, PBVR- Price to Book Value Ratio, PER- Price Earnings Ratio, EBIT-S- EBIT to Sales, EBIT-FA-EBIT to Fixed Assets.

The above analysis clearly indicates the fact that the performance of merged companies in respect of fourteen variables taken for this study was not significantly different from the expectations. However, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) achieved significant value for all liquidity related variables and

Sundram Fasteners Ltd-TVS Autolec achieved significant value for all leverage related variables. No sample merger firm of this study achieved significant t-value for all the activities and profitability related variables.

The conclusion emerging from the above analysis is that mergers cannot be successfully used to turn around from the point of view of financial evaluation. From the above analysis, it is evident that the hypothesis set for validation is not fully proved. Hence, the null hypothesis stating, "*The post merger financial performance of the combined firm is not significantly different from the aggregate performance of the acquirer and target companies prior to the merger*" is partially accepted.

FINDINGS OF THE STUDY

The following are the major findings of the present study.

1. According to this study, Gujarat Ambuja Exports Ltd-Jupiter Biotech in respect of NWC, SR, DER, TATR, RNW, RCE and EBIT-FA; Matrix Laboratories Ltd-Fine Drugs and Chemicals in respect of QR, NWC, SR, ICR, PBVR, PER and EBIT-S and Ricoh India Ltd-Gestetner (India) in respect of NWC, SR, DER, ICR, FATR, PBVR and EBIT-FA earned significant values.
2. Three sample companies, namely, Asahi India Glass Ltd-Floatglass India in respect of CR, QR, DER, ICR, RNW and PBVR and Supreme Industries Ltd-Siltap Chemicals in respect of ICR, FATR, TATR, RCE, EBIT-S and EBIT-FA earned significant values in six variables.
3. It is found that JK Tyre & Industries Ltd-Vikrant Tyres in respect of DER and RCE, Tata Chemicals Ltd-Hind Lever Chemicals in respect of SR and FATR, TVS Motor Co. Ltd-Lakshmi Auto Components in respect of PBVR and EBIT-S and Oriental Bank of Commerce-Global Trust Bank in respect of TATR and PER earned significant values in two variables.
4. Seven sample companies earned significant values with respect to variables like Net Working Capital, Interest Coverage Ratio, PB Ratio and Solvency Ratio. It is understood that six companies under Debt-Equity Ratio and EBIT to Sales, five companies under Return on Networth, Return on Capital Employed, FA Turnover Ratio, EBIT to Fixed Assets and TA Turnover Ratio, and three companies under Current Ratio, Quick Ratio and PE Ratio, earned significant t-values during the study period.
5. The overall findings in the financial performance of the acquirer and target companies, namely, Glaxosmithkline Pharmaceuticals Ltd-Burroughs Wellcome (India) achieved significant value for all liquidity—related variables (Current Ratio, Quick Ratio and Net Working Capital) while Sundram Fasteners Ltd-TVS

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Regulation of Mergers and Acquisitions in India

Prashant Kumar and Pallabika Mitra
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ABSTRACT

The first part of the chapter seeks to critically analyze the concepts of mergers and acquisitions under different provisions of different Acts, namely Indian Companies Act, 1956, SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 1997, Industries (Development and Regulation) Act, 1951, Monopolies and Restrictive Trade Practices Act, 1969, etc. The main objective of this Act is to ensure fair competition in India by prohibiting trade practices which cause appreciable adverse effects on competition in the market. The Competition Act has the following goals: i) prohibition of anti-competitive agreements; (ii) prohibition of abuse of dominance; (iii) regulating mergers and acquisitions. One of the main features of the Act is the regulation of mergers and acquisitions.

The Competition Act, 2002 covers acquisitions and takeovers besides merger and amalgamation under the head "Combination". Section 5 of the Act examines the ways in which this 'combination' affects competition. 'Combination' means 'acquisition' of one or more enterprises by one or more persons such that the acquirer or the combined entity has an asset size or turnover beyond the threshold limits specified in that section. Acquisition for the purpose of Combination is not only the acquisition of shares or voting rights or control over management, but also acquisition of or control of assets of the target company. Thus, for the purpose of Competition Act, 2002, acquisitions of shares, voting rights, assets and control of management have to be considered. The second part of the paper seeks to cover exhaustively all relevant provisions of Competition Act, 2002 that deal with mergers and acquisitions with special emphasis on Sections 5, 6, 29, 30, 31, etc.

It is imperative to strike a well coordinated balance between the likes of merger and competition. Though it appears still there is necessity for having different legislations

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