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ANALYSIS OF LONG TERM POST ACQUISITION PERFORMANCE OF PHARMACEUTICAL INDUSTRY OF INDIA

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ABSTRACT

The present study aims at analyzing the impact of long term post acquisition financial performance of pharmaceuticals Industry of India. Companies belonging to any Industry can fulfill the desire for growth in two major ways, one is organic and the other is inorganic way to achieve growth. Organic or internal growth is achieved in the natural course of time by the way of expanding product portfolio or setting up new production unit. The firm that has limited opportunities to grow internally, merger and acquisition provides an external way to achieve growth. Due to the forces like globalization, technological advancement, cut thought competition etc. corporate restructuring has gained significant importance as a means to gain external growth in the whole world. In this context the primary objective of this paper have been set to analyze the post acquisition financial performance of major pharmaceutical companies which undergone merger and acquisition activity during the window period between 2005 to 2008 are considered for this study. The whole study period is being divided into two period, pre merger and post merger period. The pre acquisition period is comprised of 5 years and as we have intended to study long term financial performance of merged company which is also the main focus of our study, we have taken a long post merger period of 10 years. In both the cases the year of merger has been excluded from both pre and post merger period. Four major parameters to determine financial health namely Liquidity test, Profitability test, Capital structure or Solvency test and Efficiency in asset management test have been carried out in this study. The financial data of the sample companies secondary in nature which have been collected from various sources namely, moneycontrol.com, and BSE and NSE websites and from websites. Current ratio and Quick for determining liquidity, Return on Capital Employed (ROCE), Return on Total Asset and Earnings per Share are being used for determining profitability position. Efficiency on Asset Management has been measured with the help of Fixed Asset Turnover Ratio and Debt Equity Ratio. The significance of these ratios has been tested with the help of t-test by using SPSS software. Overall findings of the whole study revealed statistically significant improved long term post acquisition financial performance for most of the companies of pharmaceuticals sector in India.

KEYWORDS: *Financial Performance, Merger and Acquisition, Globalization, Shareholder Wealth, ROCE.*

Introduction

Hunger for growth for every organization is natural for a business farm and there are two ways available for achieving growth, one is organic and the other is inorganic way to achieve growth.

Due to the forces like globalization, technological advancement, cut thought competition etc. corporate restructuring has gained significant importance as a means to gain external growth in the whole world. Corporate restructuring has become one of the most important strategies for corporate houses to fight competition and deal with the uncertainties. Moreover rapid technological innovations, economic development, changing political scenario and rules and regulations all these factors make merger and acquisition more popular worldwide.

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It is generally believed that M&A which is one of the most important forms of corporate restructuring, helps to increase market share, provides diversification, creates synergy, and provides economies of scale. The main objective of present study is to analyze only the post acquisition financial performance of companies under pharmaceutical industry of India that have gone through the process of merger and acquisitions during the study period of 2005 to 2008 .

Review of Literature and Hypothesis Development

In this chapter we have studied several previous researches in all sectors including pharmaceutical sectors in India and outside India in the area of M&As by various researchers. The studies that have mostly concentrated their focus on to find out the impact of M&As on operating performance and stock price return in post acquisition period are being compiled here. The researchers have applied verities of measures like accounting based, market based, mixed measure or qualitative measures have been applied to verities of factors that might have an impact on post merger performance like method of payment, type of merger, cross-border vs. domestic M&As, merger vs. tender offer, firm size, macroeconomic condition, time period of transition etc.

From the past study we found that past studies that researcher are not united on their findings regarding post merger corporate performance. Do merger and acquisition leads to better corporate performance and better stock price return is steel a matter of ambiguity to most of the previous researchers.

Beena (2006) conducted a comparative study in the pharmaceuticals industry by taking 64 merging companies and compared their performance with non merging companies in the same sector. She compared 3 years pre and post acquisition important ratios like Gross Profit Margin, Net Profit Margin, Return on capital employed, R&D intensity, Advertising Intensity, Marketing Intensity, Cost intensity, Export Intensity, Import Intensity, Capacity utilization and found that except advertising and marketing intensity, all the parameters were better for merging companies than non merging companies in the post acquisition period. As the study is only confined within a single sector it cannot be generalized.

Vanitha and Selvam (2007) evaluated post acquisition performance on the basis of three parameter i,e-liquidity, leverage and profitability by taking a sample of 17 companies during the period 2000-2002 and observed increased liquidity in terms of high net working capital in the post acquisition period among the 17 companies in case of 6 companies the post acquisition operating profit were found to be statically significant whereas for the remaining 11 companies there was insignificant growth in the post acquisition period. When they compared pre acquisition net worth with post acquisition net worth they found that it was higher in the post acquisition period. The overall findings of their study remained inconclusive because most of the ratios for measuring financial performance in the post acquisition period were almost same with pre acquisition period which indicates that post acquisition performance was not better off.

Sinha and Kaushik (2010) by taking a sample of 17 companies in the financial sector which undergone merger and acquisition activity during the period 2003-2004, examined three years pre and post acquisition financial performance with the help of different financial ratios and Willcoxon signed rank test. Their finding shows increased return on net worth for 9 companies and negative return on net worth for 6 companies, earning per share for 9 companies had increased for more than fifty percent, increased current ratios for 7 companies and decreased current ration for 10 companies in the post acquisition period. Moreover profit before tax to total income for 11 companies was increased and decreased for 6 firms. They found improved financial performance for more than half of the merging companies in the post acquisition period although debt equity ratio was found increased for sixty four percent cases. In spite of positive post acquisition financial performance found in most of the cases, their study cannot be generalized as because it was restricted only within the financial sector and the time period on which research conducted was an economic boom period.

Leepsa and Chandrashekhar (2012) was also inconclusive like Vanitha & Selvam (2007) regarding the findings of increased post acquisition financial performance of 115 manufacturing companies went for M&A during the period 2003-2004 to 2006-07

Mahesh and Prasad (2012) conducted a study on Indian airlines sector that were consolidated during the period 2007-8 for analyzing financial performance on the basis of three years pre and post consolidation testing parameters like profitability, leverage, liquidity and capital market performance and

also used pared sample t-test to measure significant difference if any. There study found no significant difference in post consolidation return on equity, net profit margin, interest coverage, earning per share and dividend per share.

Prajapati (2010) conducted a study by selecting samples of both types of banks that were forcefully and voluntarily merger during the period 1993-2007 and found no significant improvement in returns in post acquisition period for forcefully merged banks and little improvement in financial performance for voluntarily merged banks. They conducted also an questioner survey for 45 banks undergoing M&A asking to know about real motives behind their merger and most of the banks given more importance to the factors like, reduction in cost of fund, diversification of loan portfolio and expansion of range of service and less importance to factors like employee incentive and increase in carrier opportunities.

Rani et al. (2015) analyzed five year pre and post acquisition financial performance of 305 companies that went for merger and acquisition during the period 2003 to 2008 by using 14 types of financial ratios on profitability, efficiency, leverage and liquidity. They suggested that if some of the expenses like cost of goods sold, selling and general administrative expenses are kept in control, synergistic benefit can be realized in the long term post acquisition period.

Mantravadi and Reddy (2007) wanted to know to know the impact of relative size of the bidder and target firm on post acquisition performance or not by evaluating various ratios like operating profit margin, gross profit margin, net profit margin etc and found no significant change in post acquisition performance. That means that size of the bidder or acquirer had no impact on post acquisition performance according to their study. But when they took sample of 64 horizontal mergers, 8 vertical mergers and 24 conglomerate mergers separately in another study in the year 2008 by using the same parameter of earlier study, they found that in case of horizontal merger, operating performance declined most in post acquisition period. If the merger took place between companies operating within same group, decline in profit was significant.

Saboo and Gopi (2009) compared 27 domestic and 27 cross border post acquisition performance on the basis of various accounting ratios during the period 2000-2007. They also conducted statistical test for both types of merger separately and found significant improvement in post acquisition performance of domestic acquisition than cross border acquisition.

Healy et al. (1990) conducted a study on 50 acquisitions in US during the year 1979-1983 by using an unconventional method of evaluation of post acquisition performance i,e Industry adjusted performance measure. The industry adjusted performance measure is calculated by subtracting industry related median from sample farm value which covers the analysis of parameters like growth in Pretax Operating Cash flow, Pretax cash flow margin on sales and asset turnover, Employee growth rate, Pretax operating cash flow return on Market value (market value of equity + book value of debt), etc. They found improvement in industry adjusted cash flow, no decrease in capital outlay and R&D expenditure, increase in asset sales and no noticeable difference in post merger performance between related and unrelated merger. Although the methodology of evaluating post acquisition performance is not so popular in India, it is largely used in outside India.

Ramakrishna (2008) with the help of adjusted cash flow figures of each sample company with that of industry average computed post acquisition performance of 87 mergers in India during 1996-2002 .He also conducted regression analysis by taking pre and post acquisition values of three parameters, cash flow, operating margin and turnover and taking pre merger values as independent variable, found considerable improvement in the post acquisition period. They also found that premerger cash flow and turnover has an impact on post merger cash flow and turn over but pre merger operating margin has no impact on post merger operating margin. By their study they concluded that the firms that were financially strong in pre merger period will remain strong in the post merger period also.

Mistry (2010) took a sample of 117 companies that undergone meager from 2001 – 2006 and performed regression analysis to understand the impact of factors like year of merger, industry type, pre merger return on net worth & return on capital employed and percentage Change in post merger sales on post merger return on net worth & capital employed . They found percentage change in post merger sales was the only independent variable that had a significant impact on dependent variable. They noticed an 89% change in return n net worth and 56% change in return on capital employed in the post merger period was due to these independent variable. They also took help of various financial ratios to analyze post acquisition performance but did not found any significant difference through Wilcoxon Signed Rank Test.

In line with the existing evidence we thus state our hypothesis as:

H_0: There is no significant difference in the financial performances of the companies before and after merger.

H_1: There is a significant difference in the financial performance of the companies before and after the merger.

Research Methodology

- **Data Source and Period of Study**

Our study is based on secondary sources of data collected mainly from online sources like money control.com and companies own website. We have also take help of other online sources like economictimes.com, ndtv.com, financialexpress.com and capitalmarket.com. The Accuracy of the Data relating to financial performance of selected sample companies of pharmaceutical industry so availed from above mentioned sources had been verified by annual financial statements of those sample companies as and when necessary.

We have divided the whole study into two period, pre merger and post merger period. The pre merger period is comprised of 5 years and as we have intended to study long term operating and financial performance of merged company, which is also the main focus of our study, we have taken a long post merger period of 10 years. Thus the length of our whole study period is of 15 years.

- **Sample Design**

Our study basically adopts judgmental sampling procedure to select the sample for study. Depending upon the size and significance of merger and acquisition deal and availability of data, we have selected six companies in the pharmaceutical industry that went through the process of M&As during the period from 2005 – 2008. Our sample consists of six major acquirer companies of pharmaceuticals sector companies namely Arabindo pharma, Dr. Reddy, JB chemicals, Pfizer, Markasons and Caplin pharma.

The sample companies have been selected depending upon the main focus of our study to analyze long term post acquisition performance and keeping in mind the availability of long term pre and post acquisition data. The year in which the deal took place has been excluded to calculate pre and post acquisition period.

- **Research Methods for Analysis**

In order to examine the impact of M&A on financial performance, we have extensively used ratio analysis like many previous researchers. Ratio analysis has been recognized as the major tool to analyze financial statement for a long time by many researchers. It is a mathematical tool which aims to establish significance of one numerical figure on the basis of its relationship with other numerical figure because we know that one figure has no meaning by itself until it is expressed in terms of another related figure to have meaningful information.

Our study aims to evaluate post acquisition financial performance of sample companies and to study Solvency or Liquidity position, Profitability Position, Efficiency in Asset Management and post acquisition capital structure viability position. The planning for detail ratio analysis is as follows:

- For determining **liquidity position** in the pre acquisition and in the post acquisition period we have selected two ratios, Current ratio and Quick ratio.
  - **Current Ratio or Working Capital Ratio**

It is the basic measure of liquidity of a firm judging its ability to pay off short term obligations. In the financial management the short term is defined as a time less than or equal to one year. It represents the relationship between total current assets and total current liabilities. It is calculated by dividing current assets by current liability. The composition of current assets includes cash and bank balances, inventory of raw materials,, semi finished and finished goods, marketable securities, net of bad and doubtful debts, bills receivables and prepaid expenses and the composition of current liability includes trade creditors, bills payable, bank credit, provision for taxation, dividend payable and outstanding expenses.

Thus, **Current Ratio = Current Assets / Current Liability**

It is expected that current asset could be converted into cash during the operating cycle to provide fund to meet current liability of the firm. The higher the current ratio, the greater is the solvency to meet current obligations. The proportion of current assets double the size current liability (2: 1) is

recognized as good. But it is a fact that in case of two firm having same current assets, one with more cash and debtors as current assets will be treated as more liquid than a firm with more inventory as current assets.

- **Quick Ratio/ Liquid Ratio / Acid Test Ratio**

This ratio is calculated by dividing quick asset by quick liability. Quick assets refers to those current assets that can be converted into cash without any dilution in its value. This ratio is the stricter test of liquidity than the current ratio as it does not include inventory and prepaid expenses as current asset which may be slow moving and could not be converted into cash in emergency. It places more emphasis on immediate conversion of assets into cash than current ratio does.

Thus**, Quick Ratio = Quick Assets / Quick Liability**

Higher the quick ratio, higher is the debt paying capability of a company.

- For determining **profitability position** in the pre and post acquisition period we have employed following three ratios.

- **Return on Capital Employed (ROCE)**

ROCE is a very efficient long term measure of firms profitability which shows firms effectiveness in using its owner's and creditors fund. It is calculated by dividing EBIT by the sum total of long term liability and owners equity. It measures the return

Return on Capital Employed = EBIT / Capital Employed

It measures the overall profitability of a firm. The higher the ratio, the more efficient is the use of long term fund by the company.

- **Return on Total Asset (RoA)**

This ratio expresses the relation between net incomes earned by the firm and total asset of the firm. It indicates how efficiently the owner's fund has been used by the firm. A high return indicates higher efficiency whereas the lower ratio has opposite implications. This ratio is expressed as follows

Return on Total Asset = Net Income / Total Asset

- **Earnings Per Share**

It is frequently used measure of the performance of the business firm. It shows the earnings available to equity share holders on a per share basis. It is calculated by dividing the net profit available to the equity share holder by the number of outstanding share.

Earnings Per Share = Net Profit Available for Equity Share holder (NPAE) / Number of Outstanding Shares

This ratio plays a vital role in practical investment analysis.

Ñ For measuring the **Efficiency on Asset Management** we have taken the following ratios

- **Fixed Asset Turnover Ratio**

This ratio measures the efficiency of a firm in managing its investment in fixed assets. It is defined as

Fixed Asset Turnover Ratio = Sales / Net Fixed Asset

Generally, a high fixed asset turnover ratio implies a higher degree of efficiency in fixed assets management while a lower ratio indicates inefficient management of fixed assets. However, this may not be always true. A higher fixed asset turnover ratio may be caused by a low level of fixed assets representing old and substantially depreciated assets.

Ñ For measuring **Capital Structure Viability** we have taken

- **Debt Equity Ratio**

This ratio shows the relative claims of creditors and owners against the asset of a business enterprise. It is calculated by using the following formula

Debt Equity Ratio = Debt / Equity

This ratio is used as an important tool to evaluate the financial structure of a business firm. It also measures the degree of financial risk associated with the firm. The higher the debt equity ratio, the greater is the degree of financial risk associated with the firm and the lower is degree of protection enjoyed by the creditors.

Every ratio have been applied for all the sample companies under each industry separately. After calculating all the ratios mentioned above in pre merger and post merger period of all our sample companies under each industry, we have taken an average of all values so derived in each period, viz pre and post acquisition period. For the purpose of comparing the existence of significant difference if any between pre merger and post merger average of every company under a specific industry, we have applied "Pared t-Test" as a principle statistical technique. Paired t-test has been applied to find out any significant difference between the averages of computed ratios in each period for each industry separately.

Empirical Result

Paired Sample Test

Ratio	t value	df	P value
Current ratio	-2.626	5	.047
Debt Equity ratio	-1.414	5	.217
EPS	-1.448	5	.207
Fixed Asset Turnover ratio	-2.192	5	.080
Quick ratio	-2.360	5	.065
Return on Capital Employed	.977	5	.373
Return on Total Assets	-2.838	5	.036

Using the Paired Sample Test, the following observations have been made:

In respect of Debt Equity ratio, Earning Per Share, Fixed Asset Turnover ratio, Quick ratio and Return on Capital Employed, the corresponding "*p*" values (DE=-0.217, EPS=0.207, FAT= .080, QR=.065 and ROCE=0.373) with regard to "*t*" values are higher than 5% level of significance, i.e. P > 0.05, which leads to the acceptance of our Research Hypothesis that the company after acquisition has no significant effect on the financial performance of the company.

However in respect of Current ratio and Return on Total Asset, the corresponding "*p*" value (CR=0.047, RTA= 0.036, RONW= 0.047) with regard to "*t*" value is lower than the 5% level of significance, i.e. P < 0.05, which leads to rejection of the Research Hypothesis.

Ñ **Determining Liquidity Position**

In the present study we have examined liquidity position with the help of two main ratios: Current Ratio and Quick Ratio. These two ratios measure short term solvency which shows firms ability to pay off its short term dues. Twice the current asset against current liability is said to be the standard for a firm. Excess current asset will lead to idleness of fund whereas inadequacy will lead to shortage of working capital.

Major Observations in
Current Ratio

Table 1

Name of the Company	Pre-Merger Average CR	Post-Merger Average CR
Arabindo Pharma	3.3681	6.6654
Dr. Reddy	4.0268	5.7531
Jb Chemicals	3.7528	3.543
Pfizer	2.2284	6.9821
Marakasons	2.0132	2.9106
Caplin	1.9917	3.1031

Source: Computed by the Author

Quick Ratio

Name of the Company	Pre-Merger Average QR	Post-Merger Average Qr
Arabindo pharma	2.3686	5.5204
Dr. Reddy	3.2739	8.2026
Jb chemicals	3.102	3.004
Pfizer	1.8157	3.47
Marakasons	1.2706	3.9062
Caplin	1.4071	0.9458

Source: Computed by the Author

It is observed from current ratio test from the above table that current assets for all the firms have increased during the study period and in case of Aurobindo pharma, Dr reddy and Pfizer, the increase is almost double which can be interpreted as an increase in available working capital for those firms.

The result of t -test at 5% level of significance show a statistically significant difference between pre and post merger current ratio position as inferred by p value {p value (two-tail) =.047 < .05}.

In case of quick ratio also, value of t-test at 5% level of significance {p value (two-tail) =.065> .05} shows an average improvement in post acquisition period. We can see almost all the company's liquidity position moved to positive direction except in the case for caplin pharma.

- **Determining Profitability Position**

Return on capital employed (ROCE), Return on total asset (RoA) and Earning per share are the major parameter to measure profitability position of a firm.

ROCE is a very efficient long term measure of firm's profitability which shows firms effectiveness in using its owner's and creditor's fund. It is calculated by dividing EBIT by the sum total of long term liability and owners equity.

RoA ratio expresses the relation between net incomes earned by the firm and total asset of the firm. It indicates how efficiently the owner's fund has been used by the firm. A high return indicates higher efficiency whereas the lower ratio has opposite implications.

EPS is frequently used measure of the performance of the business firm. It shows the earnings available to equity share holders on a per share basis. It is calculated by dividing the net profit available to the equity share holder by the number of outstanding share.

This ratio plays a vital role in practical investment analysis.

Major Observations

Return on Capital Employed

Table 3

Name of the Company	Pre-Merger Average ROCE	Post-Merger Average ROCE
Arabindo Pharma	0.2267	0.4402
Dr. Reddy	0.2806	0.4418
Jb chemicals	0.3311	0.5858
Pfizer	0.8074	-0.3551
Marakasons	0.2452	0.5895
Caplin	-0.1083	-3.1595

Source: Computed by the Author

Return on Total Asset

Name of the Company	Pre-Merger Average ROA	Post-Merger Average ROA
Arabindo pharma	0.08852	0.811
Dr. Reddy	0.16877	0.63
Jb chemicals	0.18851	0.35844
Pfizer	0.1849	0.237
Marakasons	0.023	0.08559
Caplin	0.08794	0.8258

Source: Computed by the Author

Earnings Per Share

Name of the Company	Pre-merger Average EPS	Post-Merger Average EPS
Arabindo Pharma	28.702	37.118
Dr. Reddy	40.52	65.443
Jb chemicals	28.892	17.835
Pfizer	20.17	80.218
Marakasons	3.286	-0.261
Caplin	-1.19	9.887

Source: Computed by the Author

If we look into the table of Return on Capital Employed, we can see that Aurobindo Pharma, Dr. Reddy, JB chemicals and Markasons have managed to improve their post acquisition return on capital employed more than double. On the contrary it was negative for Pfizer and Caplin pharma. T test at 5% level of significance result shows an average statistical significant relation between pre merger and post merger as inferred by p value = .977 (one tail test) and p value = 0.0139 (2- tail test).

Return on Total Asset shows more than two fold improvement in post acquisition period for almost all the firm whereas in case of Caplin pharma the increase is more than ten times compared to pre merger. T test at 5% level of significance result also shows an average statistical relations {(p value = 2.838 (one tail) and p value = .036 (two –tail)} between pre merger and post merger return on total assets.

Pre-merger and post-merger EPS shows a moderate association which can be inferred *r* value ($r = 0.625$, $p < 0.001$). T test result also shows average difference between pre-merger and post-merger EPS ($t_5 = 1.448$, $p < 0.207$).

- **Measuring Efficiency on Asset Management**

Fixed Asset Turnover Ratio is the most important ratios to calculate efficiency on asset management.

Major Observations

Fixed Asset Turnover Ratio

Table 4

Name of the Company	Pre-Merger Average FAT	Post-merger Average FAT
Arabindo pharma	4.2243	8.1639
Dr. Reddy	3.5895	6.5213
Jb chemicals	3.303	6.089
Pfizer	10.739	23.87
Marakasons	1.883	2.272
Caplin	1.974	3.447

Source: Computed by the Author

Pre-merger and post-merger average fixed assets turnover ratios were very strongly associated ($r = 0.999$, $p < 0.001$).There was a significant average difference between pre-merger and post-merger FAT ($t_5 = 2.192$, $p < 0.080$).

- **Measuring Capital Structure Viability we have taken Debt Equity Ratio**

Debt Equity ratio measures the soundness of financial policies of a firm. Higher ratio indicates a risky financial position whereas lower ratios indicated safer financial position

Major Observations

Debt Equity Ratio

Table 5

Name of the Company	Pre-merger Average DER	Post-merger Average DER
Arabindo pharma	21.4344	78.5206
Dr. Reddy	4.3321	18.1715
Jb chemicals	1.7893	7.5926
Pfizer	0.084	0.0121
Marakasons	3.687	5.4504
Caplin	1.5281	0.4177

Source: Computed by the Author

We can see that in post acquisition period, debt has increased for 4 companies out of 6 companies whereas it has decreased for 2 companies in post acquisition period. Increase in DER is interpreted as riskier financial position whereas decrease is considered as a good sign for a firm. Statistical results shows a very high degree of correlation (r=0.991) and significant average difference between pre-merger and post-merger DER ($t_5 = 1.414$, $p < 0.217$).

Conclusion

Based on the result analyzed above, it can be concluded that except for the case of DER, most financial performance measuring ratios has shown increasing trend in post acquisition period. The increase in financial parameter was very much impressive for liquidity measuring ratios namely CR and

QR and profitability measuring ratios namely ROCE and RoA for most of the companies. But contrary to our expectation, we have found statistically insignificant increase in EPS, DER and FAT for the sample companies. The results and analysis of the major financial ratios for pre and post merger reveals that overall there was no significant effect on the financial performance of the companies after merger.

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