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# Pre and post mergers: performance of selected pharmaceutical companies in India

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### ABSTRACT

To improve operational efficiency and to facilitate the emergence of globally competitive companies, there is a need of mergers and acquisitions. The increased participation of the Indian companies in the global corporate sector has further facilitated the merger and acquisition activities in India. Even though mergers and acquisitions (M&A) have been an important element of corporate strategy all over the globe for several decades, research on M&As has not been able to provide conclusive evidence on whether they enhance efficiency or destroy wealth. So this paper tries to analyse the effect of mergers and acquisition on the net profits of the company. It also tries to analyse the performance of the selected merged banks in terms of changes in growth of net sales, cost of production, market capitalisation, revenue earnings and revenue expenses in foreign exchange and Earning per share and also to know the most significant variable affecting the net profits in pharmaceutical company with respect to net sales, cost of production, market capitalisation, revenue earnings and revenue expenses in foreign exchange and Earning per share. The data has been collected through Capitaline software. Further the result shows that different factors are responsible in different companies that are affecting the profitability of the companies.

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### Introduction

The Indian Pharmaceutical Industry today is one of the science-based industries with wide ranging capabilities in the complex field of drug manufacture and technology. It stands third in the world, in terms of technology, quality and range of medicines manufactured. Every type of medicine is now made indigenously from simple headache pills to sophisticated antibiotics and complex cardiac compounds. Playing a key role in promoting and sustaining development in the vital field of medicines, Indian Pharma Industry boasts of quality producers and many units approved by regulatory authorities in USA and UK. International companies associated with this sector have stimulated, assisted and spearheaded this dynamic development in the past 53 years and helped to put India on the pharmaceutical map of the world. Consolidation of the pharmaceutical industry is required to improve operational efficiency and to facilitate the emergence of globally competitive companies. The increased participation of the Indian companies in the global corporate sector has further facilitated the merger and acquisition activities in India. Even though mergers and acquisitions (M&A) have been an important element of corporate strategy all over the globe for several decades, research on M&As has not been able to provide conclusive evidence on whether they enhance efficiency or destroy wealth. There is thus an ongoing global debate on the effects of M&As on firms.

### Literature Review

• **Higgins and Rodriguez (2005):** they test the effect of excess capacity on the likelihood of acquisition in the pharmaceutical and biotechnology industry. First, the authors create a

desperation index for each firm in their sample. The index is created based on the exclusivity horizon of the firm's pipeline and on a score of the "health" of their pipeline. A healthy pipeline is one that has many compounds in later stages, such as Phase II or Phase III, of development. The authors use the desperation index, along with other measures of excess capacity, such as research and development intensity and the number of alliances formed in a particular year, to determine its effect on the likelihood that a firm undertakes an acquisition. Higgins *et al.* find that firms that are more desperate and have unhealthy pipelines are more likely to engage in merger activity. The authors also consider the effect of alliances on the cumulative abnormal return over a three day window around the announcement. It is hypothesized that the increase in access to information that results from an alliance would make the acquisition more beneficial. Indeed, Higgins *et al.* find that a previous alliance with the target leads to a larger cumulative abnormal return for the acquirer. The authors demonstrate that excess capacity, in the form of an unhealthy pipeline, causes firms to essentially outsource their research and development through the acquisition of smaller pharmaceutical and biotechnology firms.

• **Mitra, James (2006):** He analysis the events leading up to the 2004 merger between the pharmaceutical companies Sanofi-Synthelabo and Aventis. It reveals the social, commercial and political complexities and challenges of a merger process in which the defence of French national interests and regional capabilities competed with traditional 'commercial' narratives before the deal was closed. The merger is analysed within the broader context of contemporary debates, within the strategic

management and innovation systems literature, about the process of global innovation in pharmaceuticals, industry consolidation and the discursive socio-political discourses that underlie cross-border merger and acquisition activity. The article critically evaluates the competing criteria adopted by government and industry to justify different merger scenarios and considers the implications for pharmaceutical innovation, industry consolidation and M&A theory.

• **James Mittra(2007):** he examines the transformative nature of the life sciences in the context of pharmaceutical merger, acquisition and acquisitions and strategic alliances. The article suggests that mergers, acquisitions and strategic alliances represent a cluster of related activities that provide various strategic options for managing innovation and productivity deficit. However, because the preferred balance between in-house R&D and externally sourced knowledge depends on a number of firm-specific factors, as well as challenges posed by the external operating environment, there is increasing variation between large companies in how these activities are exploited and strategically managed.

• **Michael E. D. Koenig; Elizabeth M. Mezick(2004):** Michael E. D. Koenig; Elizabeth M. Mezick have looked at mergers and acquisitions (M&As) across various industries and concluded that, in general, there is no synergy created or released by M&A activity. This investigation concentrates upon research and development (R&D) performance in the pharmaceutical industry to examine the impact of M&A activity on corporate productivity. Findings indicate that, when compared to those companies within the pharmaceutical industry that did not experience merger activity during comparable time periods, as well as to the industry as a whole, pharmaceutical companies that merged were able to achieve more favorable post-merger productivity scores than were attained prior to their merger.

• **Morgan J. Eleanor:** He states that there is increasing public policy concern about the potential effects of mergers on innovation. This paper provides a comparative analysis of approaches to innovational competition taken by the E.U. and U.S. merger authorities in a sample of three recent, major, pharmaceutical mergers. The European Commission's approach appears lighter handed and places more explicit emphasis on effects in downstream markets. The uncertainties in the analysis of dynamic effects of mergers on innovation, even in pharmaceuticals, suggest the need for a cautious approach and for careful framing of any merger remedies where R & D projects and components, rather than approved drugs, are involved.

• **Sotaro Shibayama; Kunihiro Tanikawa; Hiromichi Kimura(2011):** Sotaro Shibayama; Kunihiro Tanikawa; Hiromichi Kimura provides a new perspective for effective management of the merger and acquisition (M&A) process by making use of a case study of a merger in the Japanese pharmaceutical industry. As corporate governance and culture are notably employee-oriented in Japanese firms, the paper seeks to explore whether M&As in the industry may follow different paths from those in Western companies and lead to competitive advantage. The paper examines the case of a merger of a Japanese pharmaceutical company, Astellas Pharma, which was formed as a result of one of the largest M&As in Japanese M&A history. The case is analyzed in line with previous theories on M&A process management. Findings – The case was characterized by a strong momentum created by a core merger

team consisting of a few members of management and workforce representatives, and the merger process was facilitated by both top-down leadership and ground-level support from the workforce.

• **Tariq Malik (2011) :** He analysis that Pharmaceutical firms are increasingly seeking vertical alliance (licensing and joint venture) or bridges and vertical integration (merger and acquisition, (MandA) or buffers. However, the question remains whether alliance and integration modes of organisation contribute to the clinical trials activities for a new product development. Using data on 250 pharmaceutical firms, this study examines the linkage between the external technology-sourcing modes and an increase in clinical trials activities, advancing new product development. The findings indicate that licensing mode may not be an effective in comparison to joint ventures and MandA modes of the organisation. Comparing the two modes - vertical joint venture (bridges) and vertical integration (buffer) - the former appears to be effective than the latter (MandA) in sourcing external technology acquisition in the pharmaceutical industry. Implications of these findings are addressed in terms of strategy and structure in a broader context.

#### Sources of Data

The study is based on secondary data. The secondary data is collected from the CAPITALINE software. It also collected from various journals, newspapers.

#### Statistical Tools

The statistical tools like- Mean ,Standard Deviation, Correlation, Regression, t-test, ANOVA have been used to study the Trends and progress of Mergers and Acquisition of the select merged companies before and after merger.

#### Hypotheses

**H0:** There is no significant difference between pre & post acquisition performance of the selected pharmaceutical companies.

**H1:** There is a significant difference between pre & post acquisition performance of the selected pharmaceutical companies.

#### Objectives

✓ To access the success of Mergers & Acquisition's strategy in pharmaceutical sector.

✓ Analysing the physical performance of the selected merged banks in terms of changes in growth of net sales cost of production, market capitalisation, revenue earnings and revenue expenses in foreign exchange and Earning per share.

✓ To know the most significant variable affecting the net profits in pharmaceutical company with respect to net sales, cost of production, market capitalisation, revenue earnings and revenue expenses in foreign exchange and Earning per share.

#### Analysis Of Physical Performance Of Merged Companies

Physical performance of the merged companies is analysed and interpreted based on the data presented in the tables. The results and analysis are presented and discussed.

#### 1) Ranbaxy Laboratories

Ranbaxy industries ltd. and Krebs biochemical & industries ltd. were merged on 15 June, 2007. The physical performance of the company was examined by studying the data of 4 years before the merger and 4years after the merger. From table 2 it can be analysed that Pre and post net sales were Rs.14966.49crores and Rs. 18937.67crores respectively. The average growth of the net sales of the company is found to be 4.24% after the merger. The cost of production distributed by the company to the various parties before and after the merger is

Rs.8463.81 crores and Rs.12636.83cr. respectively. The mean %ge increase in cost of production was recorded at 2.64% after the merger. The PAT observed before and after the merger are Rs.1927.48 and Rs.1293.63 respectively. The mean %ge decrease in profits after tax was 4.02%. The revenue earnings in foreign exchange before and after the merger are recorded at Rs.10205.85crores and Rs.12437.74 crores respectively. The mean %ge increase in revenue earnings was 2.83%. Revenue expenses in foreign exchange before and after the merger were Rs.4441.45and Rs.4930.48 Cr respectively. After the merger, there has been a growth in the expenses of the company with an average increase of 1.71%.Market capitalisation before and after the merger is recorded at Rs.71739.46 crores and Rs. 73461.424 crores respectively. The EPS before and after the merger is recorded at 80.55 crores and 55.66 crores respectively.

The regression results have been presented in table 4 to 6. In the first regression equation, all the independent variables have been entered. In the next equation, the most insignificant variable is removed. In the second regression equation cost of production, being the most insignificant variable has been removed. Third regression equation further removes revenue earnings from the equation and so on. In the last equation, earning per share, revenue earnings, cost of production, net sales have been excluded. The variations in Market Value Added explained by the first equation when all the variables have been entered into the regression equation are 93.6%.The F value of  $R^2$  of first regression equation shows that the model is insignificant. The 't' values shows that none of the variable is statistically significant in the first regression equation. The second regression equation, containing all the independent variables except cost of production, explains 96.5% of the variations. In the third equation the value of  $R^2$ , after the removal of revenue earnings from the regression equation has decreased to 96.2%. The fourth regression equation containing EPS, market capitalisation, revenue earnings, as the independent variable is capable of explaining 95.8% of the variations in the Market Value Added. In the last regression equation, after the removal of all other insignificant variables comes to be most significant variable.

### 2) Cadila healthcare ltd.

Cadila healthcare ltd. and Zydus lab. ltd. were merged on 15may,2007. The physical performance of the company was examined by studying the data of 4 years before the merger and 4years after the merger. From the table 7 it can be analysed that Pre and post net sales were Rs.4757.8crores and Rs. 7350.3crores respectively. The average growth of the net sales of the company is found to be 1.51% after the merger. The cost of production distributed by the company to the various parties before and after the merger is Rs.3033.1 and Rs.4845cr. respectively. The mean %ge increase in cost of production was recorded at 9.85% after the merger. The PAT observed before and after the merger are Rs.643.9 and Rs.1615.8 respectively. The mean %ge increase in profits after tax was 2.82%. The revenue earnings in foreign earnings before and after the merger is recorded at Rs.844.8 and Rs.3507.7 crore respectively. The mean %ge increase in revenue earnings was5.44%. Revenue expenses in foreign exchange before and after the merger were Rs.742.5and Rs.1095.3 Cr respectively. After the merger, there has been a tremendous growth in the expenses of the company with an average increase of 2.29%.Market capitalisation before and after the merger is recorded at Rs.14215.41 and Rs.34343.24 cr respectively. The EPS before and after the merger is recorded

at 83.1 and 101.9 respectively. From table 8 it can be analysed that the company is profitable after the mergers.

The regression results for the year ending 2007 have been presented in table 6-9.In the first regression equation, all the independent variables have been entered. In the next equation, the most insignificant variable is removed. In the second regression equation earnings per share, being the most insignificant variable has been removed. Third regression equation further removes cost of production .The variations in Market Value Added explained by the first equation when all the variables have been entered into the regression equation are99.9%.The F value of  $R^2$  of first regression equation shows that the model is insignificant. The't' values shows that none of the variable is statistically significant in the first regression equation. The second regression equation, containing all the independent variables except earnings per share, explains 99.9% of the variations. The last regression equation containing net sales, market capitalisation. revenue earnings, and revenue expenses as the independent variable is capable of explaining 99.9% of the variations in the Market Value Added. In the last regression equation, after the removal of all other insignificant variables comes to be most significant variable.

### 3) Alembic ltd.

Alembic limited. and Niraya private limited. were merged in 2008. The physical performance of the company was examined by studying the data of 4 years before the merger and 4years after the merger. From table 12 it can be analysed Pre and post net sales were Rs.2467.29 crores and Rs. 3285.18crores respectively. The average growth of the net sales of the company is found to be 7.19% after the merger. The cost of production distributed by the company to the various parties before and after the merger is Rs.1634.96 and Rs.2514.13 crores respectively. The mean %ge increase in cost of production was recorded at 5.19% after the merger. The PAT observed before and after the merger are Rs.246.76 and Rs.127.25respectively. The mean %ge decrease in profits after tax was 46.75%. The revenue earnings in foreign exchange before and after the merger is recorded at Rs.443.52 crores and Rs.1055.03 crores respectively. The mean %ge increase in revenue earnings was1.87%. Revenue expenses in foreign exchange before and after the merger was Rs.281.79 crores and Rs.511.19 Cr respectively. After the merger, there has been a tremendous growth in the expenses of the company with an average increase of 4.23%.Market capitalisation before and after the merger is recorded at Rs.4175.59 and Rs.2849.25 crores respectively. The EPS before and after the merger is recorded at 65.42 and 9.77 respectively.

The regression results have been presented in table 14-16.In the first regression equation, all the independent variables have been entered. In the next equation, the most insignificant variable is removed. In the second regression equation net sales, being the most insignificant variable has been removed. Third regression equation further removes EPS from the equation and so on. In the last equation, earning per share, market capitalisation, net sales have been removed. The variations in Market Value Added explained by the first equation when all the variables have been entered into the regression equation are 98.8%.The F value of  $R^2$  of first regression equation shows that the model is insignificant. The't' values shows that none of the variable is statistically significant in the first regression equation. The second regression equation, containing all the independent variables except net sales, explains 98.3% of the

variations. In the third equation the value of  $R^2$ , after the removal of EPS from the regression equation has decreased to 95.0%. The fourth regression equation containing Cost of production, revenue expense, revenue earnings, as the

independent variable is capable of explaining 92.8% of the variations in the Market Value Added.

### Sample Design

**Table1: List of selected merged companies**

Seller company	Merged/Acquirer company	Year
Krebs biochemicals & industries ltd.	Ranbaxy laboratories ltd	15jan, 2007
Zydus lab ltd	Cadila healthcare ltd	15may2007
Niraya pvt ltd	alembic ltd	3june, 2008
Venus remedies ltd	reliance industries ltd	2008

**Table2**

Year	Net sales Crores	Cost of prod. crores	Profit after tax crores	Revenue earnings crores	Revenue Expense crores	Market capitalisation crores	EPS
2003	3637.6	1927.23	794.78	2559.14	984.78	20377.1	40.66
2004	3706.3	2026.89	528.47	2533.1	1169.79	23263.53	26.06
2005	3575.44	2120.65	223.69	2357.75	1220.21	13495.36	4.81
2006	4047.15	2346.04	380.54	2755.86	1066.67	14603.47	9.02
2007	4224.22	2573.79	617.72	2660.86	1078.7	15891.34	15.11
2008	4391.91	3180.18	-1044.8	2853.79	1389.94	10609.89	0
2009	4728.09	3203.92	571.98	3136.45	1278.77	21754.63	13.6

Source: Capitaline software

**Table 3:Group Statistics**

Indicators	N	Mean	Std. Deviation
Net sales (pre)	4	3.7416E3	210.58018
Net sales(post)	4	4.7344E3	609.80591
Cop(pre)	4	2.1160E3	173.87760
Cop(post)	4	3.1592E3	452.88179
Pat(pre)	4	4.8187E2	242.90527
Pat(post)	4	3.2341E2	948.95682
Revenue earn(pre)	4	2.5515E3	162.99182
Revenue earn(post)	4	3.1094E3	491.90457
Revenue exp(pre)	4	1.1104E3	105.32189
Revenue exp(post)	4	1.2326E3	132.94858
Market capi(pre)	4	1.7935E4	4660.70738
Market capi(post)	4	1.8365E4	6443.17668
EPS(pre)	4	20.1375	16.48009
EPS(post)	4	13.9150	11.03125
Valid N (listwise)	4		

**Table 4: Regression analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967 <sup>a</sup>	.936	.550	433.93408
2	.965 <sup>b</sup>	.931	.758	317.91816
3	.962 <sup>c</sup>	.926	.827	268.79502
4	.958 <sup>d</sup>	.918	.857	244.82805
5	.924 <sup>e</sup>	.854	.796	292.31510
a. Predictors: (Constant), EPS, net sales, revenue exp, market capitalisation, revenue earn, cop				
b. Predictors: (Constant), EPS, net sales, revenue exp, market capi, revenue earn				
c. Predictors: (Constant), EPS, net sales, revenue exp, market capitalisation				
d. Predictors: (Constant), EPS, revenue exp, market capitalisation				
e. Predictors: (Constant), revenue exp, market capitalisation				

**Table 5: Anova**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2740487.983	6	456747.997	2.426	.455 <sup>a</sup>
	Residual	188298.782	1	188298.782		
	Total	2928786.765	7			
2	Regression	2726642.851	5	545328.570	5.395	.164 <sup>b</sup>
	Residual	202143.913	2	101071.957		
	Total	2928786.765	7			
3	Regression	2712034.471	4	678008.618	9.384	.048 <sup>c</sup>
	Residual	216752.294	3	72250.765		
	Total	2928786.765	7			
4	Regression	2689023.662	3	896341.221	14.954	.012 <sup>d</sup>
	Residual	239763.102	4	59940.776		
	Total	2928786.765	7			
5	Regression	2501546.186	2	1250773.093	14.638	.008 <sup>e</sup>
	Residual	427240.579	5	85448.116		
Total		2928786.765	7			
a. Predictors: (Constant), eps, net sales, revenue exp, market capitalisation, revenue earn, cop						
b. Predictors: (Constant), eps, net sales, revenue exp, market capitalisation, revenue earnings						
c. Predictors: (Constant), eps, net sales, revenue exp, market capitalisation						
d. Predictors: (Constant), eps, revenue exp, market capitalisation						
e. Predictors: (Constant), revenue exp, market capitalisation						
f. Dependent Variable: profit after tax						

**Table 6: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	287.760	10056.622			.029	.982
Net sales	1.699	4.530	1.781		.375	.772
cop	-1.070	3.947	-1.062		-.271	.831
Revenue earn	-1.011	2.746	-.706		-.368	.775
Revenue exp	-2.433	6.130	-.485		-.397	.760
Market capi	.095	.111	.764		.853	.550
EPS	-15.951	39.692	-.330		-.402	.757
2 (Constant)	2943.682	1670.637			1.762	.220
Net sales	.550	1.180	.577		.466	.687
Revenue earn	-.690	1.816	-.482		-.380	.740
Revenue exp	-4.004	1.460	-.798		-2.744	.111
Market capi	.119	.049	.958		2.425	.136
EPS	-22.804	22.423	-.472		-1.017	.416
3 (Constant)	2981.735	1409.961			2.115	.125
Net sales	.111	.196	.116		.564	.612
Revenue exp	-4.033	1.232	-.803		-3.272	.047
Market capi	.116	.041	.936		2.833	.066
EPS	-25.315	18.116	-.525		-1.397	.257
4 (Constant)	3121.258	1264.346			2.469	.069
Revenue exp	-3.900	1.102	-.777		-3.540	.024
Market capi	.128	.032	1.033		4.030	.016
EPS	-28.089	15.882	-.582		-1.769	.152
5 (Constant)	1794.826	1215.287			1.477	.200
Revenue exp	-2.464	.890	-.491		-2.770	.039
Market capi	.082	.022	.663		3.745	.013
a. Dependent Variable: pat						

**Table:7**

Year	Net sales crores	Cost of prod. crores	Profit after tax crore	Revenue earnings crores	Revenue expense crores	Market capitalisation crores	EPS
2004	1034.9	669.4	142.9	177.3	164.8	2852.38	21.99
2005	1063.4	701	131.4	138.8	169.5	2907.64	20.08
2006	1246	788.6	164.9	219	192.1	4241.51	25.41
2007	1413.5	874.1	204.7	309.7	216.1	4213.88	15.62
2008	1642.7	1004.5	236.2	437.9	222.4	3198.4	18.04
2009	1698.5	1042.3	265.9	734.6	272	3714.17	18.72
2010	1832.9	1268.2	503.3	1033.5	273.3	11261.25	36.05
2011	2176.2	1530	610.4	1301.7	327.6	16169.42	29.09

Source: Capitaline software

Table 8: Group statistics			
Indicators	N	Mean	Std. Deviation
Net sales(pre)	4	1.1894E3	176.22959
Net sales(post)	4	1.8376E3	239.44858
Cop(pre)	4	7.5828E2	92.22116
Cop(post)	4	1.2112E3	242.30458
Pat(pre)	4	1.6098E2	32.29379
Pat(post)	4	4.0395E2	182.29088
Revenue earning(pre)	4	2.1120E2	73.38042
Revenue earning(post)	4	8.7693E2	373.25098
Revenue exp(pre)	4	1.8562E2	23.55382
Revenue exp(post)	4	2.7382E2	42.97242
Market capi(pre)	4	3.5539E3	778.49500
Market capi(post)	4	8.5858E3	6256.36163
EPS(pre)	4	20.7750	4.08316
EPS(post)	4	25.4750	8.67579
Valid N (listwise)	4		

TABLE 9

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999 <sup>a</sup>	.998	.984	22.21801
2	.999 <sup>b</sup>	.998	.992	15.72989
3	.999 <sup>c</sup>	.998	.994	13.21019
a. Predictors: (Constant), EPS, Net sales, Market capitalisation, Revenue expenses, Revenue earnings, COP				
b. Predictors: (Constant), Net sales, Market capitalisation, Revenue expenses, Revenue earnings, COP				
c. Predictors: (Constant), Net sales, Market capitalisation, Revenue expenses, Revenue earnings				
ANOVA				

TABLE 10

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	220398.619	6	36733.103	74.413	.089 <sup>a</sup>
	Residual	493.640	1	493.640		
	Total	220892.259	7			
2	Regression	220397.400	5	44079.480	178.150	.006 <sup>b</sup>
	Residual	494.859	2	247.429		
	Total	220892.259	7			
3	Regression	220368.732	4	55092.183	315.698	.000 <sup>c</sup>
	Residual	523.527	3	174.509		
	Total	220892.259	7			
a. Predictors: (Constant), Earning per share, Net sales, Market capitalisation, Revenue expenses, Revenue earnings, Cost of production						
b. Predictors: (Constant), Net sales, Market capitalisation, Revenue expenses, Revenue earnings, Cost of production						
c. Predictors: (Constant), Net sales, Market capitalisation, Revenue expenses, Revenue earnings						
d. Dependent Variable: Profit after tax.						

## Coefficients

Table 11

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	196.562	349.079			.563	.674
Net sales	.312	.615	.697		.506	.702
COP	-.270	1.124	-.449		-.240	.850
Revenue earnings	.347	.267	.849		1.299	.418
Revenue expenses	-1.834	1.729	-.589		-1.061	.481
Market capitalisation	.019	.018	.530		1.046	.486
EPS	-.155	3.117	-.006		-.050	.968
2 (Constant)	183.125	156.290			1.172	.362
Net sales	.300	.401	.670		.748	.532
COP	-.247	.725	-.411		-.340	.766
Revenue earnings	.338	.135	.826		2.498	.130
Revenue expenses	-1.778	.920	-.571		-1.931	.193
Market capitalisation	.019	.011	.518		1.638	.243
3 (Constant)	136.753	64.330			2.126	.124
Net sales	.166	.061	.370		2.694	.074
Revenue earnings	.301	.068	.736		4.442	.021
Revenue expenses	-1.565	.567	-.502		-2.761	.070
Market capitalisation	.015	.003	.415		5.652	.011

a. Dependent Variable: PAT

Table 12

Year	Net sales crores	Cost of prod. crores	Profit after tax crores	Revenue earnings crores	Revenue expense crores	Market capitalisation crores	EPS
2004	635.09	321.75	45.52	55.78	24.05	1675.87	14.45
2005	515.11	381.55	52.04	105.91	87.35	747.91	18.37
2006	625.49	461.8	78.52	131.42	83.62	970.26	27.66
2007	691.6	469.86	70.68	150.41	86.77	781.55	4.94
2008	999.07	713.68	112.19	293.98	159.09	787.09	7.85
2009	1085.23	848.52	7.28	427.26	207.97	430.12	0.46
2010	1010.17	743.79	20.68	312.55	130.54	656.82	1.46
2011	199.71	208.14	-12.9	21.24	13.59	975.22	0

TABLE 13

Parameters	N	Mean	Std. Deviation
Net sales(pre)	4	6.1682E2	73.81494
Net sales(post)	4	8.2130E2	416.40860
Cost of prod(pre)	4	4.0874E2	70.37418
Cost of prod(post)	4	6.2853E2	286.15773
PAT(pre)	4	61.6900	15.47751
PAT(post)	4	31.8125	55.33391
Revenue earn(pre)	4	1.1088E2	41.00904
Revenue earn(post)	4	2.6376E2	172.08710
Revenue exp(pre)	4	70.4475	30.97505
Revenue exp(post)	4	1.2780E2	82.57870
Market capitalisation (pre)	4	1.0439E3	432.52997
Market capitalisation(post)	4	7.1231E2	229.07353
EPS(pre)	4	16.3550	9.41266
EPS(post)	4	2.4425	3.65616
Valid N (listwise)	4		



## Regression analysis

TABLE 14

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988 <sup>a</sup>	.977	.836	16.55112
2	.983 <sup>b</sup>	.966	.882	14.02076
3	.950 <sup>c</sup>	.903	.774	19.41427
4	.928 <sup>d</sup>	.861	.757	20.16354
a. Predictors: (Constant), EPS, net sales, market capitalisation, revenue exp, revenue earn, cost of production				
b. Predictors: (Constant), EPS, market capitalisation, revenue exp, revenue earn, cost of production				
c. Predictors: (Constant), market capi, revenue exp, revenue earn, cost of production				
d. Predictors: (Constant), revenue exp, revenue earn, cost of production				

TABLE 15

## ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11415.577	6	1902.596	6.945	.283 <sup>a</sup>
Residual	273.940	1	273.940		
Total	11689.517	7			
Regression	11296.353	5	2259.271	11.493	.082 <sup>b</sup>
Residual	393.164	2	196.582		
Total	11689.517	7			
Regression	10558.775	4	2639.694	7.003	.071 <sup>c</sup>
Residual	1130.741	3	376.914		
Total	11689.517	7			
Regression	10063.244	3	3354.415	8.251	.035 <sup>d</sup>
Residual	1626.273	4	406.568		
Total	11689.517	7			
a. Predictors: (Constant), EPS, net sales, market capitalisation, revenue exp, revenue earn, cop					
b. Predictors: (Constant), EPS, market capitalisation, revenue exp, revenue earn, cop					
c. Predictors: (Constant), market cap, revenue exp, revenue earn, cost of production					
d. Predictors: (Constant), revenue exp, revenue earn, cost of production					
e. Dependent Variable: profit after tax					

Table 16

## Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-332.824	111.999		-2.972	.207
	Net sales	-.120	.182	-.875	-.660	.629
	cop	1.334	.507	7.374	2.632	.231
	Revenue earn	-2.904	.686	-10.072	-4.236	.148
	Revenue exp	2.579	.698	4.126	3.696	.168
	Market capi	.095	.061	.851	1.566	.362
	eps	-2.251	1.274	-.548	-1.766	.328
2	(Constant)	-270.861	51.683		-5.241	.035
	cop	1.043	.211	5.764	4.948	.039
	Revenue earn	-2.635	.467	-9.139	-5.643	.030
	Revenue exp	2.367	.524	3.786	4.513	.046
	Market capi	.061	.027	.547	2.241	.154
3	(Constant)	-211.343	57.544		-3.673	.035
	cop	.819	.244	4.525	3.356	.044
	Revenue earn	-1.947	.420	-6.753	-4.639	.019
	Revenue exp	1.650	.515	2.640	3.207	.049
	Market capi	.039	.034	.354	1.147	.335
4	(Constant)	-182.920	53.935		-3.392	.027
	cop	.927	.234	5.124	3.969	.017
	Revenue earn	-2.062	.423	-7.152	-4.872	.008
	Revenue exp	1.364	.467	2.182	2.918	.043
a. Dependent Variable: profit after tax						

Table 17

Year	Net sales	Cost of prod.	Profit after tax	Revenue earnings	Revenue expenses	Market capitalisation	Earning per share
2004	23.11	18	1.26	0	1.32	3.21	1.97
2005	30.83	22.09	4.1	0	0.26	52.95	6.27
2006	84.94	62.09	16.22	0	1.18	288.34	19.01
2007	140.24	98.36	28.74	0	7.92	351.03	33.66
2008	212.7	147	38.52	0	18.24	327.06	44.9
2009	264.1	183.71	45.53	0	21.98	125.52	53.37
2010	311.93	221.54	41.05	0	25.36	217.85	47.96
2011	357.27	242.1	47.48	0	42.07	184.24	51.52

Source: capitaline software

TABLE 18

Parameters	N	Mean	Std. Deviation
Net sales(pre)	4	69.7800	54.43537
Net sales(post)	4	2.8650E2	62.19131
Cop (pre)	4	50.1350	37.80544
Cop (post)	4	1.9859E2	42.04270
PAT(pre)	4	12.5800	12.57574
PAT(post)	4	43.1450	4.09309
Revenue ear(pre)	4	.0000	.00000
Revenue ear(post)	4	.0000	.00000
Revenue exp(pre)	4	2.6700	3.53144
Revenue exp(post)	4	26.9125	10.51510
Market capi(pre)	4	1.7388E2	171.49881
Market capi(post)	4	2.1367E2	84.67843
EPS(pre)	4	15.2275	14.26023
EPS(post)	4	49.4375	3.76711
Valid N (listwise)	4		

## Regression analysis

TABLE 19

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 <sup>a</sup>	1.000	.999	.62481
2	1.000 <sup>b</sup>	.999	.999	.61931
3	.999 <sup>c</sup>	.999	.998	.77610
a. Predictors: (Constant), EPS, market capi, revenue exp, cost of prod				
b. Predictors: (Constant), EPS, market capi, revenue exp.				
c. Predictors: (Constant), EPS, revenue exp.				

ANOVA  
TABLE 20

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2391.975	4	597.994	1.532E3	.000 <sup>a</sup>
	Residual	1.171	3	.390		
	Total	2393.147	7			
2	Regression	2391.612	3	797.204	2.079E3	.000 <sup>b</sup>
	Residual	1.534	4	.384		
	Total	2393.147	7			
3	Regression	2390.135	2	1195.067	1.984E3	.000 <sup>c</sup>
	Residual	3.012	5	.602		
	Total	2393.147	7			
a. Predictors: (Constant), EPS, market capi, revenue exp, cost of prod.						
b. Predictors: (Constant), EPS, market capi, revenue exp						
c. Predictors: (Constant), EPS, revenue exp						
d. Dependent Variable: Profit after tax						

## Coefficients

TABLE 21

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.480	.516		-.932	.420
	cop	-.016	.017	-.075	-.964	.406
	Revenue exp	.209	.063	.168	3.299	.046
	Market capi	.005	.003	.033	1.913	.152
	EPS	.813	.046	.909	17.838	.000
2	(Constant)	-.660	.477		-1.383	.239
	Revenue exp	.160	.036	.128	4.380	.012
	Market capi	.005	.003	.034	1.963	.121
	EPS	.780	.029	.872	26.515	.000
3	(Constant)	-.375	.569		-.659	.539
	Revenue exp	.121	.038	.097	3.149	.025
	EPS	.818	.028	.915	29.701	.000

## Findings

SR. NO	VARIABLES	Ranbaxy	Venus	Cadila	Reliance	alembic
1	Net sales					
2	Cop					
3	Pat					
4	Revenue earnings					
5	Revenue expenses					
6	Market capitalisation					
	Variations explained by all the variables	93.6	100.0	99.8	99.6	97.7
	Variations explained by most significant variables	85.4 (rev exp.and market cap)	99.9 (EPS,Rev exp.)	99.8 (sales,rev exp. And earning)	99.5 (Eps,Cop)	86.1 (rev exp.and earning)

In the last regression equation, after the removal of all other insignificant variables comes to be most significant variable.

#### 4) Reliance Industries Limited

Reliance Industries Ltd. and Venus remedies Ltd. were merged in 2008. The physical performance of the company was examined by studying the data of 4 years before the merger and 4 years after the merger. From the table 17 and 18 it can be analysed that Pre and post net sales were Rs.310342.25 crores and Rs. 719395.8 crores respectively. The average growth of the net sales of the company is found to be 1.28% after the merger. The cost of production distributed by the company to the various parties before and after the merger is Rs.252014.55 and Rs.621389.17 cr. respectively. The mean %ge increase in cost of production was recorded at 1.09% after the merger. The PAT observed before and after the merger are Rs.33744.56 and Rs.71289.58 respectively. The mean %ge increase in profits after tax was 1.31%. The revenue earnings in foreign exchange before and after the merger is recorded at Rs.124922.08 and Rs.406186.15 respectively. The mean %ge increase in revenue earnings was 6.63%. Revenue expenses in foreign exchange before and after the merger were Rs.213276.24 and Rs.573461.95 Cr respectively. After the merger, there has been a tremendous growth in the expenses of the company with an average increase of 9.83%. Market capitalisation before and after the merger is recorded at Rs.452850.08 and Rs.1263334.28 cr respectively. The EPS before and after the merger is recorded at 237.59 and 336.59 respectively.

The regression results have been presented in table 19-21. In the first regression equation, all the independent variables have been entered. In the next equation, the most insignificant variable is removed. In the second regression equation net sales,

being the most insignificant variable has been removed. Third regression equation further removes cost of production from the equation and so on. In the last equation, revenue earnings, market capitalisation, net sales have been removed. The variations in Market Value Added explained by the first equation when all the variables have been entered into the regression equation are 1.000. The F value of  $R^2$  of first regression equation shows that the model is significant. The 't' values show that none of the variable is statistically significant in the first regression equation. The second regression equation containing all the independent variables except net sales, explains 100% of the variations. The fourth regression equation containing EPS, revenue expenses, as the independent variable is capable of explaining 99.9% of the variations in the Market Value Added. In the last regression equation, after the removal of all other insignificant variables comes to be most significant variable.

#### Conclusion

From the above analysis we can conclude that In Ranbaxy Lab., there is an increase of net sales, cop and also revenue expenses and earning in foreign exchange but in the starting years of mergers there is a decrease in PAT. In the same way, in Cadila Ind also, the mergers prove successful because after merger there is an increase in profits, sales, COP, revenue earnings and market capitalisation as well. In Alembic Ltd, this merger proves disastrous results because there is very huge downfall in the profits, net sales, revenue earnings as well. In Venus Ind, there is an increase in the profits, net sales, EPS. In Reliance Ind, this merger proves successful because there is an increase in all the variables like sales, profits, market capitalisation, EPS.

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