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Structure and Performance**

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**Mergers and Acquisitions in the Indian Pharmaceutical Industry:
Nature, Structure and Performance**

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Mergers and Acquisitions in the Indian Pharmaceutical Industry: Nature, Structure and Performance

Beena. S.

I) Introduction

The corporate sector all over the world is restructuring its operations through different types of consolidation strategies in order to face various challenges posed by the new pattern of globalisation, which again led to the greater integration of national and international markets. The intensity of such operations is increasing with the deregulation of various Government policies as a facilitator of the new economic regime. The Indian corporate sector too experienced such a boom in mergers and acquisition led restructuring strategies especially after liberalisation mainly due to the presence of subsidiaries of big MNCs here as well as due to the pressure recorded by such strategies on the domestic firms. Finance, Drugs and Pharmaceutical, Telecommunication, Textiles, Electrical machinery, Tea etc are the major sectors in which it has been occurred. The present study is an attempt to bring out the effectiveness of such strategies in realizing the desired objectives in the case of Drugs and Pharmaceutical sector, which is undergoing a paradigm shift in policies as well as which is well known for its social sensitiveness¹. Moreover, the occurrence of mergers and acquisitions deserves special attention in this industry due to the inelastic demand for drugs due to the existence of a third party (that is doctor) in deciding the demand for a particular drug. Thus the actual consumers (that is patients) are obliged to obey the decisions of the doctor. Under this condition the consolidation strategies adopted by the firms can again lead to increased market concentration and raising the power of supply side factors and thus the price level. In order to understand the dynamics of consolidation strategies in this sector, we have made a database on consolidation strategies using various secondary sources during the post liberalisation period. In the following section we will discuss the nature and structure of such deals using this database.

¹ The industries' demand is inelastic as the final consumer cannot choose the drug and it all depends on the physician, who may not be price sensitive.

II) Nature and Structure of Merger and Acquisitions in the Pharmaceutical Industry

Mergers: Despite the data limitations², we got 64 merger and 63 acquisitions occurred in this industry during the post liberalization period, which helped us to derive the following interesting observations regarding the nature and structure of this process. Ownership-wise classification of merger shows a clear domination of domestic firms over foreign firms. Out of the total 32 merging firms³, 20 belonged to the domestic sector and in the case of merged firms, it is 38 and 20 respectively (see Table 1). Even though the total number of mergers during the post liberalization period is 64, only 32 merging firms were involved in the process, which indicates that many merging firms engaged in multiple mergers. Further, domestic firms are merging with the domestic firms, which constitute 64 percent of the total number of mergers and many foreign subsidiaries merged with other foreign subsidiaries, which constitute 26 percent of the total number of mergers. Albeit, there are instances in which some foreign firms got merged with domestic firms such as, Roche Products with Nicholas Piramal India Ltd., Boehringer Mannheim India Ltd. with Nicholas Piramal India Ltd. American Remedies with Dr. Reddy's etc.

Table 1 Ownership Pattern of Merging and Merged Firms

Ownership	Merging firms		Merged Firms	
	No.	Percent	No.	Percent
Domestic	20	64.52	38	65.52
Foreign Subsidiaries	11	35.48	20	34.48
Total Available	31	100	58	100

Source: Own database

² Data covers up to the year 2005 March. Database is created using the information from different secondary sources (see Beena, S 2006 for details).

³ Merging firms are the firms existing after making mergers and merged firms are the firms who lost their identity after getting into mergers.

From the size-wise classification⁴ of *merging* firms we noticed that large sized firms are mostly engaged in merging process, which constitutes almost 60 percent of the total mergers, whereas that of the medium sized firms is around 38 per cent. From the size distribution of the *merged* firms it is clear that almost all the merged firms were medium sized, that is 27 out of the 28 firms come under medium sized category (see Table 2). A closer look at the size of the firms further reveals the medium sized firms are getting merged with large sized firms⁵. About 64 percent of the mergers come under this category⁶. The preference for medium sized firms by the large sized merging firms may be due to several reasons such as the ownership of well-known brands in some therapeutic markets, well established marketing networks and their market share-even though they are not the market leaders their small share may help the merging (acquiring) firm to gain market leadership. Despite this, many medium sized firms are merging with the firms of their own size in order to strengthen themselves to face acute competition from other firms.

Table 2 Size-wise Classification of Mergers

Size	Merging ⁷		Merged	
	No.	Percent	No.	Percent
Large (> 1000 Million)	28	59.57	1	3.57
Medium (10-1000 Million)	18	38.3	27	96.43
Small (< 10 Million)	1	2.13	0	0
Total available	47	100	28	100

Source: Own database

Most of the mergers in the pharmaceutical industry were horizontal⁸ type, which marked more than 85 percent (52 out of the 61 cases for which data available) of the total (see Table 3). Only few firms merged with firms having other type of business such as finance

⁴ This classification is based on Small Industry Development Bank of India, 2005 that defined Small Scale Industries as, the units having investment in Plants and Machinery up to Rs. 10 Million (approximately US \$ 0.21 Million), Medium Scale as those between Rs. 10 Million and Rs.1000 Million (between US \$ 0.21and US \$ 21Million) and Large Scale as those above 1000 Million (US\$ 21 Million). Plant and Machinery investment at the time of merger is taken for this analysis.

⁵ We are restricting this analysis to 47 merging and 28 merged firms as such information related to the rest of the firms are not accessible.

⁶ Only 25 cases information is available.

⁷ Here each merger is taken as a separate entity. In the case of many merged firms information is not available as they lost their identity.

⁸ Here Horizontal merger is defined as the merger between firms comes under the pharmaceutical industry.

companies and chemical sector⁹ companies during this period. Mergers with these companies defined as conglomerate mergers. We have further classified the above horizontal merger cases into horizontal and vertical in order to find out the instances of vertical integration within the pharmaceutical industry as the sector consists of different therapeutic categories. We found that, seventeen mergers can be further classified as vertical mergers as some mergers are between bulk drugs and formulations producing firms with either formulation-producing firms or bulk drug producing firms is one instance. In this industry, very few cases are reported to have disputes in the settlement of the swap ratio¹⁰ in the initial stage of the mergers¹¹ and the rest are friendly mergers. We again tried to find out the business relations and the tendency for getting into mergers and found that more than 70 percent of the cases are related¹² in nature (see Table 4), which is a clear indication that firms are trying to consolidate themselves in order to overcome the new challenges of competition posed by the new market regime.

Table 3 Type of Mergers: Horizontal/ Conglomerate Classification

Type	No.	Percent
Horizontal	52	85.25
Conglomerate	9	14.75
Total Available	61	100

Source: Own database

Table 4 Related and Unrelated Mergers

Ownership	Related		Unrelated	
	No.	Percent	No.	Percent
Domestic	25	65.79	7	46.67
Foreign Subsidiary	13	34.21	2	13.33
Domestic-Foreign	0	0	6	40
Total Available	38	71.7	15	28.30

Source: Own database

b) Acquisitions: Unlike in the case of mergers there is a high incidence of cross-border acquisitions, which makes around 28 per cent of the acquisitions (including Category III, IV, and V; see Table 5). Relatively large number of acquisitions occurred among the

⁹ Pharmaceutical industry comes under the chemical sector.

¹⁰ Swap ratio is the ratio at which one firms' share is exchanged for the other firm's share.

¹¹ The merger between Sandoz India and Hindustan Ciba-Geigy was disputed. In the initial stage, the swap ratio was decided to be 17:10. Later due to the disagreement by the shareholders of the company, High Court decided the new swap ratio, 15: 10.

¹² Related merger is the merger involving firms with prior relationship.

foreign owned firms. Interestingly many of the foreign parent firms are trying to increase stake in their Indian subsidiaries, which was earlier constrained by various regulations. Our evidence suggest that some firms are doing this mainly to introduce new technology into their Indian counterparts sans the fear of “me-too production” by the domestic firms, which require them to have a higher controlling block. Further, a large portion of the acquisitions occurred between firms, which are already having some managerial tie-ups¹³. For example, Solvay Healthcare acquired 44.52 per cent of equities in Solvay Pharmaceutical India, the promoters of Syncom Formulations India have acquired 5.22 per cent of equities, Abbott Laboratory, USA acquired 51 per cent of equity holdings in Abbott Laboratory India Ltd. etc. In many cases, firms have acquired a small portion of the assets and later on opted for merging with the same firms. Some of such cases are the mergers of Boehringer Mannheim with Nicholas Piramal India Ltd. (NPIL), Roche Products with NPIL, Sumitra Pharmaceuticals with NPIL, MJ Pharmaceuticals with Sun Pharmaceuticals, Vorin Laboratory with Ranbaxy Laboratory, Rhone Poulance with NPIL, Matrix Laboratory with Ranbaxy Laboratory etc.

Table 5 Ownership Pattern of Acquisitions

Category	Ownership	No.	Percent
I	Domestic- Domestic	17	32.08
II	Foreign- Foreign	21	39.32
III	Foreign- Domestic	6	11.32
IV	Domestic- Foreign	8	15.09
V	Foreign- Domestic Foreign ¹⁴	1	1.9
VI	Total Available	53	100

Source: Own database

c) Alliances: In addition to mergers and acquisitions, strategic alliances are treated as a major factor in integrating both production and marketing, which are also a preferred route of consolidation as it require less legal obligations. Interestingly the occurrence of cross-border alliances is higher compared to mergers, which again points to the less stringent regulations followed in the case of alliances. They constitute more than 80 percent of it (see Table 6 Category II, III and IV). Even though many firms wanted to derive manufacturing synergies using alliances, the available information suggest that majority of them were intended to expand the market base of the firms in and outside the

¹³ About 35 per cent of the acquisitions belong to this category.

¹⁴ It is the acquisition made by Eli Lilly of USA in Eli Lilly- Ranbaxy joint venture.

country rather than promoting the technological base of the domestic firms.¹⁵ From Table 7 it can be observed that, 34 out of the 62 alliances, which accounts 55 percent of the total number of alliances were exclusively for marketing purpose. Marketing was one of the objectives for the rest of the 32 percent of the total alliances although it has some other objectives such as manufacturing. Technology was the prime objective of a mere 6.45 percent of the firms.

Table 6 Ownership of Firms Involved in Alliances

Category	Type	No.	Percent
I	Domestic -Domestic	5	9.09
II	Domestic- Foreign	38	69.09
III	Domestic Foreign-Domestic ¹⁶	1	1.82
IV	Foreign-Domestic	6	10.91
V	Total Available	55	100

Note: Domestic-Foreign refers to the alliances made by the domestic firms with the foreign firms.

Table 7 Classification of Alliances on the basis of Motives

Motive	No.	Percent
Marketing	34	54.84
Marketing & Manufacturing	13	20.97
Marketing & Others	7	11.29
R&D and Technology	4	6.45
Not Specified	4	6.45
Total	62	100

Note: Here marketing and manufacturing include contract manufacturing also. Marketing and others includes technology, capital utilization, market entry, Research and Development and availing raw materials etc.

Source: Own Database.

d) Sales of Asset: Many companies are selling their production units as well as their brands mainly as a business restructuring strategy and found it as one way to strengthen their core business. For instance, Lupin sold its equity stake in Lupin Agro-Chemicals India to concentrate on its core business; Glaxo India sold its food division to HJ Heinz to

¹⁵ For example, the alliance of Pfizer with Omni Protech Drugs Pvt. Ltd. is for the production of multi-vitamin brand, 'Becosules'; Ranbaxy Laboratories with Dianippon Pharmaceuticals of Japan is for marketing the anti- bacterial Sparfloxacin in India; Nicholas Piramal India Ltd. with Stryker Corporation, USA is for the marketing of surgical, medical products in the area of orthopaedics, gynecology and ear, nose and throat.

¹⁶ It is the marketing joint venture made by Eli Lilly Ranbaxy made a manufacturing alliance with MJ Pharmaceuticals for the production of Iletin 30/70.

concentrate only on drug manufacturing activities. Dr. Reddy's Laboratories sold its wholly owned loss making subsidiary Compact Electric in a bid to focus on its pharmaceutical business. Ajay Piramal Group separated the pharmaceutical business of Piramal Healthcare and formed a new company to takeover the real estate business of the firm located in Mumbai. Some companies are selling their assets mainly due to the unfavorable market conditions or financial crisis. For instance, UB Pharmaceutical sold its bulk drugs facility at Tumkur due to unfavourable market conditions. It is interesting to note that some firms are selling their original research infrastructure and networks. To elaborate, Ranbaxy sold exclusive development and global marketing rights in respect of a Novel Drug Delivery System for Ciprofloxacin to Bayer AG. On the other hand, there is a big competition for purchasing these assets as it enables them to expand their capacity. From the sample, it appears that domestic firms are still having a control on the number of such deals. In fact, about 30 per cent of the domestic firms purchased the assets of the foreign firms although the value of assets involved in each deal is not very clear from the available information (see Table 8).

Table 8 Sale of Assets in the Industry

Ownership	No:	Per cent
Domestic-Domestic	14	29.79
Domestic-Foreign	14	29.79
Foreign-Domestic	9	19.15
Foreign-Foreign	10	21.28
Total Available	47	100

Note: Here, Domestic-Foreign is the domestic company bought the assets of the foreign company and so on.

Source: Own database.

d) Foreign Acquisitions by Indian Companies: Another important development observed in this industry is that Indian firms are acquiring many foreign pharmaceutical firms or brands outside India since the latter half of the 1990's. There are 31 such cases noticed between 1997 and March 2005, which shows how competitive are the Indian firms. Some of them are shown in Table 9. The main reason for this increasing number of foreign acquisitions is part of the market expansion strategies of the Indian companies. For example, Ranbaxy, acquired Ohm Laboratories in the US and Rima Laboratories in the Ireland in 1996. With these acquisitions, Ranbaxy aimed at strengthening its overseas infrastructure, as it expanded globally and also to facilitate a quick entry into overseas

market, by enabling the company to cope with the much more stringent regulatory framework. They also gave Ranbaxy the capacity and manufacturing facility needed to compete in the overseas markets (Case: Ranbaxy Laboratories, 2003). According to Brar¹⁷, “with Ohm Laboratories, we no longer have to worry about the delays in Food and Drug Administration (FDA) approvals. Such acquisitions also helped us to get rid of the ‘made- in- India’ image for our very discerning US customer. And the acquisition of Rima Laboratories helped us to have access to the product licenses for the UK market and cut short registration services” (as cited in The Economic Times, February 14, 1997).

Table 9 Foreign Acquisitions by Indian Companies

Acquirer	Acquired	Country
Sun Pharmaceuticals	Careco Pharmaceuticals	USA
Dr. Reddy's Laboratories	BMS Laboratories	UK
Ranbaxy Laboratories	Liquid Drug Manufacturing facility, Signature Pharmaceuticals	USA
Wockardt	CP Pharma	UK
Ranbaxy Laboratories	RPG Aventis SA	USA
Nicholas Piramal India Ltd.	Dobutrex Brand Rights from Eli Lilly & Company.	USA
Nicholas Piramal India Ltd.	Anesthetics business of Rhodia Organique Fine	UK
Torrent Pharmaceutics	Huemann Pharma GmbH	Germany

Source: Own database.

III) Impact of Mergers and Acquisitions on Performance

Having analysed the nature and structure of mergers and acquisitions in this industry, the next question arises would be to what extent the consolidation strategies helped them to improve their position. This is done in a comparative framework of the performance of merging¹⁸ and non-merging firms on the one hand and pre and post merger performance on the other. Mergers and acquisitions are expected to change the performance of merging firms in two ways. One is through an increase in the scale factor, which in turn will reduce the total cost of production of the merging firms, which will result in the better performance. It is also likely that mergers and acquisitions may give monopoly

¹⁷ Brar was the Chief Executive officer and Managing Director of Ranbaxy.

¹⁸ For convenience, here onwards we call both the acquiring as well as merging firms using the term ‘merging’.

power to the merging firms in the market and this will give them powers to increase the 'mark-up' which again lead to high prices and ultimately to high profits. Sometimes mergers will reduce the performance of the merging firms if it acquires loss-making firms and are not able to derive the expected synergies. Also if the industry is less colluded, the combined market share of the merging firms could fall, which result in loss of market shares and low profitability (Mueller, 1980). However, in this paper we are not focusing on the adverse consequences of consolidation in the form of concentration and market power.

Merging vs. Non Merging Firms

Most of the earlier studies on post merger performance of merging firms were focusing on the developed countries context such as USA and UK since they experienced large number of mergers and acquisitions and reached a mixed picture of performance¹⁹. Since then it is a highly debatable issue and continues to be so. Here, we are trying to find out the performance using a different methodology²⁰ which gives importance to each merger/ acquisition event as well as the year of merger/ acquisition for the period 1992-1993 to 2003-2004. A merging firm arises only after making the first merger/ acquisition and until that it would be a non-merging firm. We constraint our analysis to a sample of 23 merging firms as the data is not available for the rest.

We have used four measures of profitability such as Gross Profit Margin (GPM), Net Profit Margin (NPM), Return on Capital Employed (ROCE) and Return on Net worth (RON). Interestingly all these ratios have shown that the merging firms are more profitable compared to the non-merging²¹ firms and this difference is statistically significant at one percent level (see Table 10) and both type of firms are volatile as shown by the CV (Co-efficient of Variation). Likewise the R&D intensity of the merging firms are very high (2.3 and 1.35 respectively) compared to the other. The R&D intensity of the merging firms show high variability as compared to that of non-merging firms, which indicates that only a few merging firms are able to invest more on R&D. Besides

¹⁹ See for example, Mueller, (1984), Weston and Mansighka (1971), Mueller (1980), Cowling et.al. (1979), Mueller (1987), Ravenscraft and Scherer (1988), Ikeda and Doi (1983) etc.

²⁰ See Beena S (2006).

²¹ Non merging firms consist of all the firms except merging firms.

Research and Development expenditure, another major determinant of sustaining market growth is the selling cost, mainly the marketing expenditure rather than advertisement expenditure. This is because the companies are approaching the prescribing doctors in the case of ethical drugs market rather than patients, which force them to spend on marketing through sales representatives (Matraves, 1999; Pillai PM, 1984). The average advertisement intensity for merging firms remained slightly higher than that of the non-merging firms (1.29 and 1.07), which is not a statistically significant difference too. Albeit, the average value of the marketing intensity of the merging firms is only 3.7 and that of the non-merging firms are 4.34. Here the t statistic is negative and statistically non-significant, which indicates that the merging firms could reduce their expenditure on marketing expenses after getting into mergers. Interestingly, the co-efficient of variation for the merging firms is so low as compared to that of non-merging firms, which shows that even large firms among the merging firms are not spending more on marketing²². Mergers and acquisitions enabled them to share common marketing outlets, which reduced this expenditure considerably. Besides, these firms have also gone for many strategic marketing alliances, which could have helped them to derive marketing synergies along with this.

Table 10 Performances of Merging and Non-merging Firms during Post-merger Period

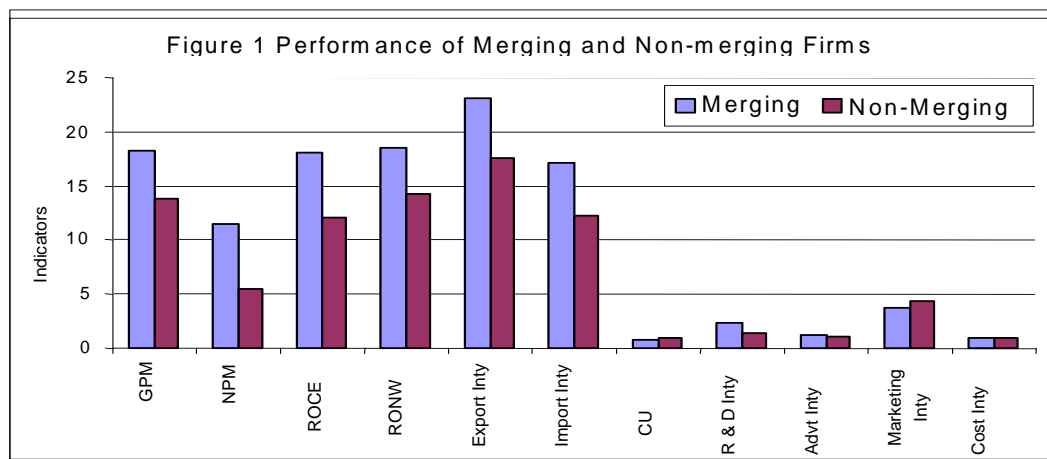
Performance Parameters ²³	Merging			Non-Merging			t
	Mean	SD	CV	Mean	SD	CV	
Gross Profit Margin	18.22	3.35	18.39	13.81	1.29	9.34	4.563**
Net Profit Margin	11.42	2.40	21.05	5.58	1.78	31.98	9.975038**
Return on Capital Employed	18.08	7.01	38.78	12.17	3.87	31.81	2.648833**
Return on Net worth	18.55	5.14	27.68	14.31	4.87	34.02	2.492694**
R &D Intensity	2.30	1.51	65.67	1.35	0.40	29.91	2.665223**
Advertisement Intensity	1.29	0.5	38.55	1.07	0.21	19.54	1.140272
Marketing Intensity	3.70	1.82	0.52	4.34	0.52	12.09	-1.23328
Cost Intensity	92.48	4.14	4.47	96.52	1.15	1.19	-3.49498**
Export Intensity	23.15	8.95	38.63	17.67	4.81	27.21	3.290744**
Import Intensity	17.14	4.51	26.33	12.31	2.63	21.35	3.437528**
Capacity Utilization	82.57	12.2	14.78	87.58	15.04	17.17	-0.73341

²² In relative terms, not in absolute amounts

²³ Ratios are given in percentages.

Note: ** Significant at one- percent level
 Source: Calculated using PROWESS

Coincided with the above trends, the cost intensity of the merging firms remained far below compared to the other (t statistic is negative and significant). Merging firms are also having high export and import intensity. The high import intensity may be due to their dependence on bulk drug import. The gains from the high export intensity may be offset by the high import intensity. Merging firms had shown greater variability as compared to that of non-merging firms. Even though mergers and acquisitions are expected to increase the capacity utilization²⁴ of the merging firms due to the expansionary reasons, capacity utilisation is lower than that of the non-merging firms during the post merger period. The ratio for merging firms is 82.57 and for non-merging firms 87.58. However, since the mid-1990 the ratio for the merging firms outweighs that of the other.



Thus from the above discussion it is clear that the performance of merging firms during the post-merger period was far better as compared to the non-merging firms in terms of most of the performance indicators (see Figure 1). As we do not know how better it has

²⁴ Capacity Utilisation is the ratio of Actual Production to Installed Capacity. However it is difficult to capture this ratio as PROWESS provides actual production²⁴ and installed capacity for each product groups in different units. Therefore, we are approximating this ratio by an alternative definition by taking the ratio of Net Sales to Total Assets. Ikeda and Doi (1983) and Beena (2004) have also used this ratio taking Sales instead of Net Sales in order to test the effect of mergers on equipment utilisation and argue that it is surely one of the efficiency measures.

been compared to the previous pre-merger phase we undertook another analysis of inter-temporal changes in the performance of merging firms.

Pre and Post Merger Period Performance of Merging Firms

The period for the pre-merger analysis range from 1989-90²⁵ to the year of first merger or acquisition of each merging firm. The period from the time of first merger or acquisition to 2003-2004 is considered for the post merger analysis²⁶. The result shows (see Table 11) that all the ratios except capacity utilization improved during the post merger period compared to the pre merger period, which invalidates the possibility expressed in the earlier analysis that the better performance of merging firms may be attributed to their pre merger performance.

Table 11 Pre and Post Merger Averages of Merging Firms

Performance Indicators ²⁷	Period (average values)		Change
	Pre-Merger	Post-Merger	
Gross Profit Margin	13.97	18.22	Increased
Net Profit Margin	7.11	11.42	Increased
Return on Capital Employed	15.79	18.08	Increased
Return on Net Worth	17.75	18.55	Increased
R &D Intensity	1.47	2.3	Increased
Advertisement Intensity	1.11	1.29	Increased
Marketing Intensity	3.39	3.7	Increased
Cost Intensity	95.35	92.48	Improved
Export Intensity	11.66	23.15	Increased
Import Intensity	12.84	17.14	Increased
Capacity Utilisation	98.09	82.57	Decreased

Source: Calculated using PROWESS

Besides this, relative firm level performance of the merging firms is also attempted. For this, each merging firms' averages (from the respective ratios) for the pre and post-merger period is calculated which reveals the comparative performance across firms before and after merger. This we thought it important since as the earlier analysis proved

²⁵ This is the year in which PROWESS starts giving information.

²⁶ One of the limitations of our analysis is that the number of years before merger and after merger is not the same. However we are considering the average of these ratios for the pre and post-merger analysis even though we are aware that the average of any ratios is not a good indicator.

²⁷ Ratios are given in percentages.

that merging firms are showing greater variability in their performance. The major findings of this analysis are discussed here (see the Tables 11, 12, and Figure 2). The number of firms remained above average in terms of profitability, cost intensity and trade performance remained more or less same during the post merger period whereas that of R&D intensity shows that many firms newly entered into the upper strata, which shows nothing other than technological progress. In the case of export and import intensity, a slightly reverse trend occurred. Moreover, many of the firms could increase their profitability compared to their own pre merger period except for RNW (Table 13). Around 78 percent of the firms increased their R&D spending and 74 percent of them reduced the advertisement expenditure. The most striking point is around 91 percent of the firms are underutilizing their capacity compared to their own past.

Table 12 Distribution of Merging Firms Performance during Pre and Post Merger Period

Performance Indicators	Pre-merger period				Post merger period			
	Above Average		Below Average		Above Average		Below Average	
	No:	% Share	No:	% Share	No:	% Share	No:	% Share
Gross Profit Margin	11	47.83	11	47.83	12	52.17	11	47.83
Net Profit Margin	13	56.52	9	39.13	11	47.83	9	39.13
Return on Capital Employed	13	56.52	9	39.13	13	56.52	10	43.48
Return on Net Worth	15	65.22	7	30.43	15	65.22	8	34.78
R &D Intensity	6	26.09	16	69.57	9	39.13	14	60.87
Advertisement Intensity	12	52.17	7	30.43	7	30.43	16	69.57
Marketing Intensity	4	17.39	18	78.26	13	56.52	10	43.48
Total Costs	11	47.83	11	47.83	10	43.48	13	56.52
Export Intensity	8	34.78	14	60.87	7	30.43	16	69.57
Import Intensity	9	39.13	12	52.17	7	30.43	16	69.57
Capacity Utilisation	12	52.17	11	47.83	15	65.22	8	34.78

Note: Sometimes data may not tally to 100 percent as the required information for all the merging firms are not available in the PROWESS data base.

Source: Calculated using PROWESS

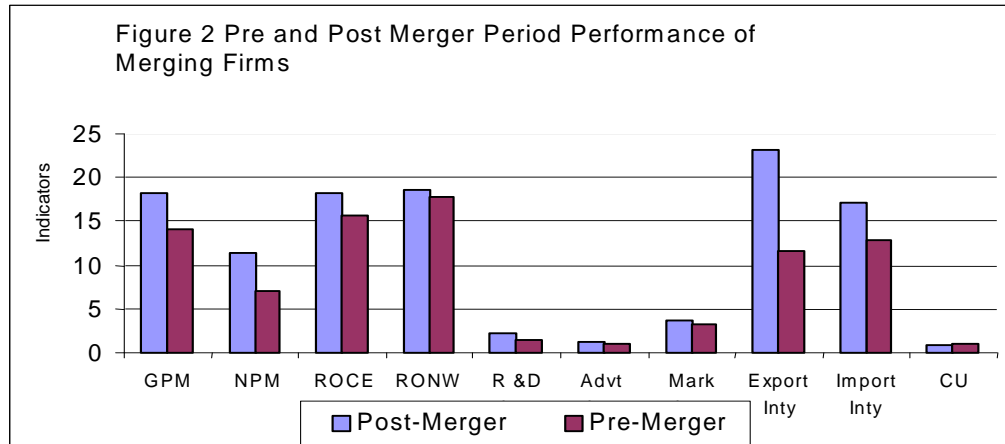


Table 13 Pre and Post Merger Period Comparison of the Merging Firms

Indicators	Increased		Decreased		NA		Total	
	No:	Percent	No:	Percent	No:	Percent	No:	Percent
Gross Profit Margin	15	65.22	7	30.43	1	4.35	23	100
Net Profit Margin	17	73.91	5	21.74	1	4.35	23	100
Return on Capital Employed	12	52.17	10	43.48	1	4.35	23	100
Return on Net Worth	8	34.78	14	60.87	1	4.35	23	100
R &D Intensity	18	78.26	4	17.39	1	4.35	23	100
Advertisement Intensity	2	8.70	17	73.91	4	17.39	23	100
Marketing Intensity	14	60.87	7	30.43	2	8.70	23	100
Total Costs	4	17.39	18	78.26	1	4.35	23	100
Export Intensity	17	73.91	5	21.74	1	4.35	23	100
Import Intensity	14	60.87	8	34.78	1	4.35	23	100
Capacity Utilisation	1	4.35	21	91.30	1	4.35	23	100

NA – data is not available Source: Calculated using PROWESS

From the above analysis we conclude that the overall performance of the merging firms increased during the post-merger period as compared to the pre-merger period. However, we do observe that many of the merging firms were falling below average. So contrary to the findings of the earlier studies on mergers, we observed that the post-merger profitability of the merging firms is higher than that of the pre-merger period performance. For example, Das (2000) compared the pre merger and post merger operating profit margin for a sample of 14 acquiring companies and found a decline in profitability in 8 of these companies after merger. The studies carried out by Saple

(2000)²⁸ and Beena (2000; 2004) have also reached almost similar conclusions. But we should keep it in our mind that none of the studies are focused exclusively on a specific industry. However, the advantage of the present study is that it could capture the post merger performance with a longer time period compared to these studies and it is using an entirely different methodology to capture the effect of mergers and acquisitions.

Product Diversification through Consolidation

Firms may opt for mergers in order to reduce the risk and uncertainty. If a firm is more diversified, then there is greater possibility of obtaining stable return. Any losses in one particular market can be offset by profit in some other market. Mergers enable firms to diversify their production by adding new product to more therapeutic categories and thereby not only reduce risks, but also expand their market size. The synergy effect of merger will enable the firms to either deepen or extent product structure. Here an attempt is made to find out to what extent mergers and acquisitions helped the merging firms' to diversify their production. One way to find out the extent of diversification is by taking account of the sales value of new products added after mergers to the total sales value. Since the information about this is unavailable, alternatively we have applied a rule of thumb method to understand the extent of diversification. We have used Monthly Index of Medical Specialities (MIMS) published by A. E. Morgan Publications (India) Private Ltd., which is a Medical Journal containing information on product lines, prices and usage of major drugs available for prescription in India. The study compares the situation of 13 merging companies in 1990 with that of 2005 as the similar information for the rest of the merging firms are not available in MIMS. MIMS classifies the pharmaceutical products into 17 major therapeutic categories and each of these categories consists of different sub- categories. The product profiles of these firms can be traced from this document. A comparison with 1990 will show as to how many new products were added by merging firms.

²⁸ see Agarwal, 2002 for more details

The data shows that there was an expansion in the production profile of the merging companies during the post merger period. If we take the major therapeutic categories as the device for comparison, then in the case of the 10 out of the 13 merging companies that makes 76.92 percent of all the merging firms' expanded their product profile in 2005 as compared to 1990. Cadila and Torrent Pharmaceuticals were the only two firms, which have reduced its product lines between 1990 and 2005 (see Table 14). We further observed that Cadila is concentrating on some therapeutic categories more powerfully. It is interesting to note that Ranbaxy has not expanded its product lines during this period, but Ranbaxy has concentrated its brands in some product lines widely. This only means Ranbaxy has been consolidating in the existing product lines.

Table 15 gives the number of product lines of the merged firms that included in the product lines of the merging firms in 2005, which were not produced by the merging firms in the year 1990. This analysis is based on the sub-categories (not major therapeutic categories as Table 15). The result showed that merging firms continued producing many of the product lines of the merged firms. For example, Pharmacia had products in six therapeutic sub-categories in 1990. The merging firm (Pfizer) had no products in these categories at the time of merger. The merging firm started producing two new product lines, which were earlier produced by merged firm.

Table 14 Product Diversification of Merging Firms between 1990 and 2005

Firm	Number of therapeutic categories		Change (number)
	1990	2005	
Aventis	8	12	4
Cadila	14	10	-4
Glaxo SmithKline	9	15	6
Lupin Ltd.	6	9	3
Nicholas Piramal	9	12	3
Novartis	10	12	2
Pfizer	7	13	6
Ranbaxy	9	9	0
Sun Pharma	5	8	3
Torrent	11	10	-1
TTK Pharma	2	3	1
Unichem	8	9	1
Wyeth Ltd.	9	12	3

Source: Compiled from Monthly Index of Medical Specialities, Various Issues

Similarly, the merger of Tamilnadu Dadha Pharmaceuticals with Sun Pharmaceuticals enabled Sun Pharmaceuticals to add oncology, biotechnology and anesthesiology to its diverse product portfolio. Further when Glaxo made the first domestic acquisition, by acquiring 100 percent equity stake in the Biddle Sawyer, Meghdoot Chemicals and Cryodon Chemical Works in 1997, these three firms had their brands accounting for around one percent of the formulation market. They had strength in anti-asthmatics, orthopaedical gynecology and nephrology products, which added to Glaxo's product portfolio. Thus it becomes very clear that mergers and acquisitions enabled the merging firms to expand their product portfolio and thus reduce their risk as well as helped them to derive marketing synergies. By comparing Table 14 and Table 15, we can argue that many of these firms have opted for mergers and acquisition for expanding as well as strengthening their market power.

Table 15 Product lines of merged firms continued by merging firms (1990-2005)

Merging Firm	Merged Firm	Total Product lines*	No: of product lines continued
Pfizer	Pharmacia	6	2
Nicholas Piramal	Roche Products	5	3
Novartis	Sandoz India Ltd.	8	6
Nicholas Piramal	Piramal Healthcare	2	2
Wyeth	John Wyeth	3	2
Nicholas Piramal	Boehringer Mannheim	13	8
Wyeth	Cryodon Chemicals	7	3
Glaxo SmithKline	Roussel India Ltd.	12	8
Nicholas Piramal	Rhone Poulance	23	14
Pfizer	Parke Davis	18	13

Note: * Total product lines of the merged firms before merger.

Source: Compiled from Monthly Index of Medical Specialities, Various Issues.

IV) Conclusion

The study found that coincided with the global trends, the Indian pharmaceutical industry experienced greater consolidation through mergers, acquisitions, alliances as well as sale of assets. Even though the mergers are dominated by the domestic firms, the foreign firms are actively participating in acquisition as well as alliances which became possible due to the dilution of various policy regulations. Most of the firms used it as a market

expansion strategy rather than as a technology enhancer and it is evident from the performance analysis carried out, which shows that there is a significant difference in the marketing expenditure of merging firms compared to the non-merging counterparts during the post merger period. Even though the capacity expansion is one of the major motives of these strategies, the analysis reaches an opposite trend albeit it is increasing during the post merger period. Majority of the firms are using merger as a means to expand their product profile and thus to remain risk free. In short, the merging firms' - which is less than 10 percent of all firms in this industry- overall performance is far better than the others and their own pre-merger period performance. We conclude by saying that if this industry is able to transfer a part of their improved performance due to consolidation to the consumers in the form of a price reduction and a better quality of drugs, it would be a welcome sign and on the other hand if it lead to increased market power²⁹ and consequent price rise, then it would deserves special attention.

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²⁹ For the impact of mergers on concentration level of pharmaceutical industry, see Beena S (2006).

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