The Product Patent And Its Impact On Working Capital Management Of Ranbaxy Laboratories Limited

**** Dr. Kajalbaran Jana***

CHOICE OF THE BASIC FIELD OF STUDY

The economic reforms in India started since mid - nineties cover five areas like : corporate governance, risk management, capital structure, group infrastructure and working capital management reform under Indian monetary and fiscal system. As far as studies are concerned, it was found that impact of economic reforms on the working capital management of Indian companies are given least importance. But changes in credit assessment and delivery system, interest rate deregulation, changes in competitive structure and banking credit system and finally, changes in money and debt market creates a major impact on the working capital management of Indian companies. The Indian pharmaceutical companies have also undertaken such reform. It was found that Indian pharmaceutical industries covered a huge portion of drug requirement in local market as well as in overseas market. In fact, Indian pharma companies were accelerating their growth with greater pie in the world market until up to the introduction of *'Product Patent'* in the year 2005. The *'Product Patent'* prevented Indian companies from adopting process re-engineering of already invented drug formulations. The paradigm shift from *'Process Patent'* To *'Product Patent'* is the outcome of Trade Related Intellectual Property Rights (TRIPS) under GATT agreement signed during 1994 by India, which was also the initiation of economic reforms in this field. Ranbaxy Laboratories Ltd. was a major stakeholder in the Indian Pharmaceutical Scenario since its inception in this arena. This company was attributed towards loss making concern in the year 2008, which was real reason for this study.

THE INDIAN PHARMACEUTICAL INDUSTRY UNDER PATENT REFORMS

In 1970, The Patents Act recognized patents on processes, but not patents on products, which in turn enabled local firms to legally produce compounds that were patented elsewhere. Consequently, scores of Indian pharmaceutical companies evolved to reverse engineering and cheaply sold copies of all major drugs.

Even without strong patent protection, the Indian pharmaceutical industry matured during the 1980s. In particular, local companies grew less reliant upon reverse engineering for revenues. By increasingly focusing on attributes such as novel delivery system, Indian firms were on their way to creating revenues based on their own added value.

Despite impressive growth and development, the thirty years have been relatively uneventful for the Indian pharmaceutical industry. However, in the year 2005, the fundamental structural changes were made as India had agreed to enforce product patents on drugs. However, the changes that were introduced in the new Patent Act were the outcome of Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), and on 15th April, 1994, the Indian Govt. entered into GATT(General Agreement on Tariff and Trade), which is considered to be the founding stone for all types of reforms in India.

New Product Patent Law, came into effect from 1st January 2005, with shifts from process to product - that Indian companies will not be allowed to introduce products by mere reverse engineering, rather, they have to come out with their own innovative molecules. So, now, Indian companies had to undertake Research & Development (R&D) to introduce new generic products and this process is time consuming and involves high cost. Moreover, these R&D frameworks have been undertaken by the foreign companies since the past many years. Hence, domestic companies had to face intense competition from the well equipped foreign companies. The Indian companies had to develop their own drugs, which called for significant scaling up of investment in terms of money, material and manpower in R&D. Again, the research also possesses a significant risk of failure. Despite this, R&D has become the basic necessity of the pharmaceutical companies to ensure their foothold in new product patent era. In order to cope with such R&D facilitations, the Indian pharmaceutical companies are facing capital crunch, especially in working capital requirement.

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* *Assistant Professor of Commerce,* Tamralipta Mahavidyalaya, Dist. Purba Medinipur - 721636, West Bengal.
E- mail : jkajalbaran@yahoo.com

RANBAXY LABORATORIES LIMITED- A BRIEF HISTORY AT THIS JUNCTURE

Ranbaxy Laboratories Ltd. is the largest pharmaceutical company in India, and one of the world's top 100 pharmaceutical companies. Since long, a specialist in the preparation of generic drugs, Ranbaxy was also one of the world's top 10 in that pharmaceutical category as well. Yet, with India's agreement to apply international patent law at the beginning of 2005, Ranbaxy has begun converting itself into a full-fledged research-based pharmaceutical company. A major part of this effort has been the establishment of the company's own research and development centre, which has enabled the company to enter the new chemical entities (NCE) and novel drug delivery systems (NDDS) markets. In the mid-2000s, the company had a number of NCEs in progress, and had already launched its first NDDS product, a single daily dosage formulation of Ciprofloxacin. Ranbaxy is producing its pharmaceutical preparations in manufacturing facilities in seven countries, supported by sales and marketing subsidiaries in 44 countries, reaching more than 100 countries throughout the world. The United States, which alone accounts for nearly half of all pharmaceutical sales in the world, is the company's largest international market, representing more than 40 percent of the Group's sales. In Europe, the company's purchase of RPG (Aventis) S.A. makes it the largest generics producer in that market. The company is also a leading generics producer in the United Kingdom and Germany and elsewhere in Europe. European sales added 16 percent to the company's sales in 2004. Ranbaxy's other major markets include Brazil, Russia, and China, as well as India, which together added 26 percent to the group's sales. Ranbaxy posted revenues of $1.18 billion in 2004. The company, which remains controlled and led by the founding Singh family, is listed on the National Stock Exchange of India in Mumbai. Thus, the researcher found that Ranbaxy took every opportunity that was available to it under the reform of the Indian economy as well under the gamut of the financial structure. But Ranbaxy Laboratories Ltd. swung to loss for the year ended Dec. 31, 2008. During that year, the company reported loss of ₹ 10,323.34 million compared with a profit of ₹ 6,177.20 million in the last year. As compared to the previous year, Net sales for the year rose by 6.78% to ₹ 43,051.07 million, while total income for the year climbed by 9.33% to reach ₹ 45,857.80 million.

IMPORTANCE OF WORKING CAPITAL MANAGEMENT OF RANBAXY LABORATORIES LTD.

With such huge activities in pharmaceutical industry across the world, Ranbaxy Laboratories Ltd. necessitated huge working capital stake for smooth operations. There is no doubt that the Pharmaceutical Industry requires huge working capital involvement despite high basic capital structure necessity. The fixed capital structure, once planned and incorporated, cannot be changed and one should undertake well planned fixed capital structure proposition for the firm, but without cautious and planned management of working capital, no firm can reach the destination, although it has very suitable fixed capital involvement. Moreover, the working capital is very much crucial for proper utilization of fixed capital.

In the Pharmaceutical Industry, it is necessary to have the working capital in high proportion to the fixed capital. To utilize fixed capital involvement derived by sophisticated research and developmental work in Pharmaceutical Industry, Working Capital Management should be attended to with proper attention and authentication. Without this attitude, the progress and prosperity in the Indian Pharmaceutical Industry cannot be restored or at least protected, in face of stiff competition from the competitors in this industry in the world arena.

OBJECTIVES OF THE STUDY

In view of the importance of working capital management of Ranbaxy Laboratories Ltd. in India, as discussed in the previous section, and in order to identify the probable implications of the New Product Patent Law on Ranbaxy Laboratories Ltd., the study proposes :

1) To examine the impact on the financial components related to working capital in Ranbaxy Laboratories Ltd. before and after the Product Patent period along with a comparison with other companies;

2) To assess the liquidity position of Ranbaxy Laboratories Ltd. before and after the Product Patent;

3) To assess the operational efficiency of Ranbaxy Laboratories Ltd. before and after Product Patent;

4) To examine the profitability condition of Ranbaxy Laboratories Ltd. before and after Product Patent;

5) Finally, to offer conclusions for the study.

The study, thus facilitates in devising a sound policy framework on the working capital management in the Pharmaceutical industry.

DATABASE AND METHODOLOGY

The data base of our study will cover issues like sources and types of data. The methodologies used in the study will pertain to the sampling design for collection of data, the various statistical, financial and analytical techniques used for the analysis of data and information.

❁ **Database :** In pursuance of the objectives, the researcher has collected relevant data that relates to the working capital management in pharmaceutical industry. For the data, the researcher has mainly used secondary data.

❁ **Database For Secondary Data :** The secondary data collected pertained to total assets, Gross sales, gross profit, net profit, value of output, current assets and their components, current liabilities and their components, net working capital, cost of goods sold, cost of sales, total purchase, credit sales and credit purchase, various overheads, etc. The sources that have been tapped to collect such data are as follows:

a. Annual Survey of Industries, Different issues, CSO.

b. Economic Survey, Different issues, Ministry of Finance, GOI.

c. Annual Report of the respective Firm through Websites .

d. 'CAPITALINE' Software.

METHODOLOGIES

1) Financial Appraisal Of Ranbaxy Laboratories Ltd. With Other Selected Pharmaceutical Companies : For financial appraisal of Ranbaxy Laboratories Ltd., few parameters have been selected, and their over the period movements have been observed. The researcher has also tried to find overall trends of this parameter in average form for the whole period and two sub-periods i.e. before the product patent period and after the product patent period. The paper also tries to identify comparative positions of various ratio based economic parameters related to working capital in Ranbaxy, with seven others pharmaceutical companies, of which, four are foreign companies and four are Indian companies including Ranbaxy .

2) Liquidity Analysis : To maintain liquidity and short-term solvency,working capital should be managed properly. The liquidity analysis was done mainly on the basis of ratio analysis. The ratios, which are taken into consideration in this regard, are current ratio (CR), quick ratio (QR), super quick ratio (SQR) and current asset to total asset ratio (CATTA).

3) Analysis of Operational Efficiency : Proper management of working capital may also be judged through different operational efficiency ratios, like, inventory turnover ratio (ITR), debtors' turnover ratio (DTR) and cash velocity ratio (CVR).

4) Profitability Analysis : The performance of working capital management could be solely judged through the profitability analysis as profit may be regarded as the ultimate performance indicator. The profitability analysis is primarily done through ratio analysis by using different ratios. Gross profit ratio (GPR) and Net profit ratio (NPR) are those two ratios, which exhibit profitability in relation to sales. Again, to assess profitability in relation to total capital employed, the researcher has used return on investment (ROI) as a measure of profitability.

5) Other Methodologies Applied : In order to identify conclusive remarks, the researcher has separated the whole study period into two sub periods - taking the year 2005 as the distinction year, when the new product patent act was enacted. So, the first sub-period consists of seven years and the second sub-period consists of a three year period according to the availability of data. The researcher has used simple arithmetic mean for the two sub-periods for every analysis and for the whole period. As ratio analysis is not always a proper measure for any conclusive remark, the author has identified liquidity, operational and profitability indices using the ratios used for these purposes respectively by factor analysis on principal component of each ratio analyses. Thereafter, to find out the impact of liquidity and operational efficiency on profitability, simple regression analyses was done.

THE FINANCIAL APPRAISAL OF RANBAXY LABORATORIES LIMITED WITH OTHER SELECTED PHARMACEUTICAL COMPANIES

In this section, the researcher has attempted to expose the over all financial condition of Ranbaxy Laboratories Ltd. for the whole study period and for period before and after enactment of the New Patent Act. For such analysis, the author has identified over the period movement of Total Assets, Gross Sales, Net Sales, Value of output, Cost of Production, Profit after Tax and Net worth of Ranbaxy Laboratories Ltd. for the period 1998-2007.

❁ Over The Period Movement Of Financial Parameters Of Ranbaxy Laboratories Ltd. : In Table 1, the researcher has presented the over the period movement of the above mentioned financial parameters. It can be inferred from the table that Total Assets has an increasing trend over the period starting from 1998 to 2007. The Average Total Assets for the whole period was found to be ₹ 3924.28 Lakh. Again, the average figure for this parameter for the first seven years i.e. before the New Product Patent Law was implemented was ₹ 2776.14 lakh and after the enactment of Product Patent Law, the figure was ₹ 5934.91 lakh. Thus, the Total Assets increased almost by more than double after the New Product Patent Law was implemented.

But both the Gross sales and Net sales were found to have followed an oscillatory trend over the period. The whole time averages of these two were found to be ₹ 2986.373 lakh and ₹ 2796.76 lakh respectively. The sub-period expositions of Gross Sales were ₹ 2415.441 lakh and ₹ 3985.503 lakh respectively for before and after Patent Act enactment. Thus, it was found that Gross Sales had also increased sufficiently in the Product Patent Period than the earlier period, although, the researcher found that in the year 2007, the Gross sales and Net sales had declined.

The Value of Output was also found to have followed an increasing trend throughout the period. The average figure for the whole period was ₹ 2894.05 lakh. Again, the sub period average figure for before and after product patent was found to be ₹ 2396.15 lakh and ₹ 3765.38 lakh respectively. Thus, in this case also, there is a sharp and huge increase in the value of the output in the second sub period than in the earlier sub-period.

Similarly, the researcher found that the Cost of Production during the Product Patent Period also increased. The Cost of Production for the whole period was found to be ₹ 1692.29 lakh on an average. But it was found to be ₹ 1411.77 lakh and ₹ 2183.19 lakh respectively for before and after Product Patent period. Thus, the cost of production increased by almost one and half during the product patent regime.

The Profit after Tax (PAT) had an oscillatory movement throughout the period. Still, the average figure during Product Patent period was found to have been increased from ₹ 385.02 lakh to ₹ 403.41 lakh. The whole time average was found to have been 391.71 for the study period.

The Net Worth was also found to have increased during the Product Patent Period than the earlier period i.e. from ₹ 1826.22 lakh to ₹ 2317.02 lakh. The Overall average Net Worth for the whole period was found to have been ₹ 2004.69 lakh.

Thus, the researcher found that during initial periods of Product Patent, i.e from 2005-2007, pertaining to the study, the effect on all the financial parameters considered so far is apparently positive than the pre product patent period. Although, it is clear that percentage increase in PAT and Net Worth are much lower than the Percentage increase in other parameters. This may be due to huge investment in R& D, which increased Total Value of Assets. At the same time, increased price of pharmaceutical products increased the value of output, but the increased Cost of Production in some ways, counter balances the above mentioned increases.

❁ Comparison Amongst Few Others Pharmaceutical Companies Operating In India With Ranbaxy Laboratories Ltd. : In Table 2, the researcher has identified the position of different value parameters of different Pharmaceutical companies operating in India with Ranbaxy Laboratories Ltd. for a comparative analysis. For this comparison, the researcher used three parameters - such as Total Assets/Current Assets, Gross Sales/Current Assets and Value of Output/Current Assets amongst seven other companies namely Merck, Novartis, Pfizer, Glaxo (all are foreign companies operating in India), Dr. Reddy's Laboratories Ltd. (DRL), Dabur and Lupin with Ranbaxy (all these four are Indian companies).

It is found from the Table 2 the Total Asset/Current Asset position in Ranbaxy is comparatively higher along with Merck and Dabur. It is found to be 1.994 in Ranbaxy in comparison to 2.015 in Merck and 2.030 in Dabur. It is found to have the lowest as 1.114 in Pfizer.

In terms of Gross sales to Current Assets, Ranbaxy occupied 1.492, which is amongst the lowest three companies in this respect along with Pfizer and Lupin who were in 1.088 and 1.406 respectively. So, it can be said that contribution

of gross working capital to sales is not satisfactory in Ranbaxy. This implies that management of working capital in Ranbaxy is not being in an adequate manner.
Similarly, in terms of Value of Output to Current Assets also, Ranbaxy was amongst the bottom liners. It is found to have a value of 1.471 in comparison to 3.414 in Dabur, which is found to have the highest Value of Output to Current Assets amongst eight companies under consideration. So, these parameters also attracted the attention of the researcher towards the mismanagement of working capital in Ranbaxy, although in the earlier section, the financial parameter showed that economic position of Ranbaxy during the product patent period is found to be consolidated, but the profit and net worth did not show much improvement in this period. So, these attract the researcher to further probe into the managing of working capital atRanbaxy Laboratories Ltd. .

WORKING CAPITAL MANAGEMENT OF RANBAXY LABORATORIES LTD. IN THE LIGHT OF PRODUCT PATENT

In this section, the researcher has tried to find out the state of working capital management in Ranbaxy Laboratories Ltd. in the light of New Product Patent Law. In the earlier section, the author had established the financial condition of Ranbaxy and had established the need for the effective management of working capital in this company.

❁ Liquidity Analysis Of Ranbaxy Laboratories Ltd. : In Table 3, the researcher has estimated different liquidity ratios of Ranbaxy Laboratories Limited. It can be seen from the table that the liquidity positions of Ranbaxy Laboratories Ltd. are found to be decreasing over the years under the study period. The current ratio was found to be 2.10 on an average for whole study period and the sub-period analysis showed that it had decreased to 1.77 in the second sub-period from 2.29 in the first sub-period. Again, the quick ratio was found to be 1.43 on an average for the whole study period, where as, it was also found to have decreased in the second sub-period to 1.16 from first sub-period value of 1.58. But the super quick ratio was found (on an average) to have a value of 0.08 for the whole study period. The sub-period analysis also threw up the same value in both the sub-periods i.e. a value of 0.08. This implied that cash liquidity remained unchanged in both - the pre patent and post patent period. The CA/TA was found to have a value of 0.54 on an average for the whole study period. It was found to have decreased in the second sub-period substantially to 0.45 from 0.60 in first sub-period. This implied that current asset i.e. total working capital reduced much in post product patent period than in the earlier period.
So, it can be inferred that during the new product patent period, the overall liquidity of Ranbaxy Laboratories Ltd. squeezed in comparison to the earlier patent period.

❁ The Operational Efficiency Analysis Of Ranbaxy Laboratories Ltd. : The operational efficiency entails the positions of the ratios like inventory turnover, debtor's turnover, cash velocity ratio - that is the performance of working capital components at the Ranbaxy Laboratories Ltd.. In Table 4, the over the time movements of these ratios are given along with overall average values and sub-period's are also estimated in this table.
The over the period movement of ITR showed an oscillatory nature. The overall average values of ITR showed a value of 4.77 for the whole study period. The average for the first sub-period stood at 4.92 and it reduced to 4.39 in the second sub-period. Thus, the researcher found the during the product patent period, ITR declined.
The debtors' turnover ratio (DTR) was also found to have an oscillatory movement throughout the study period. The whole time average for DTR stood at 4.76 and the sub-period averages stood at 4.83 and 4.61 respectively for the first and second sub-period. Here also, the declining trend has been observed from the first to the second sub-period.
The cash velocity ratio (CVR) also depicted an oscillatory trend over the period and the sub-period value also reduced in the second sub-period substantially than it did in the first sub-period. The whole time average was found to have been 46.66 and the sub-period averages were 50.64 and 37.36 respectively.
Thus, it can be said that operational efficiency of working capital components were found to worsen during the new product patent period than the earlier period.

❁ Profitability Analysis Of Ranbaxy Laboratories Limited : Profit is one of the sole objectives of a business activity. In capitalist sense, it is only objective to be targeted upon. In another way, profitability is the indicator of performance of the business activity. A firm is financially viable if it is profitable. More profit indicates better performance. In this light, profitability analysis is the ultimate performance indicator. In the previous sections, the researcher has analyzed the liquidity and operational efficiency analysis respectively to identify the condition of working capital management

within the company, which ultimately affected the profitability of the firm. We are all aware of the fact that theoretically liquidity has an inverse relationship with the profitability in a grown up business firm (actually the relationship can be depicted as inverted tea cup; which is indicated that at the primary stage, when a business is started, liquidity has a positive relationship with profitability, then it settles down to a stagnant level when liquidity has no effect on profitability and ultimately, it becomes negatively related with profitability, where with the increase of liquidity, profitability decreases **(G.M. Gentry)**. On the other hand, operational efficiency always positively affects the profitability of the business firm i.e. with the increase in operational efficiency, the profitability increases and vice versa.

In Table 5, the profitability ratios are estimated over the study period and averages of these ratios for the whole study period - the first seven years and last three years have been calculated. The gross profit ratios (GPR) observed a fluctuating trend over the period under study. It had been 0.24 on an average for the whole study period. The average for 1st seven years i.e. first sub-period was found to be 0.21 and for the last three years i.e. second sub-period, it stood at 0.29. Thus, the researcher found that GPR increased during the second sub-period i.e. during the new product patent period than during the earlier period.

The net profit ratio (NPR) was also found to be fluctuating throughout the study period under observation. The average NPR for the whole study period was found to be 0.14, whereas, it was 0.16 for first the sub-period and was 0.11 for the second sub-period. Thus, the researcher found that the NPR had decreased in the second sub-period, which is quite opposite to the trend observed in GPR. This implied that the operating cost of Ranbaxy has increased substantially during the new product patent period, resulting in reduction of net profit. Thus, this indicated that during the new product patent period, the profitability of the firm reduced not only due to increased cost of production, but also due to increased operating cost of business.

In the case of return on investment (ROI), the researcher observed an oscillatory movement of the ratio over the study period, as has been observed in the case of GPR and NPR . The ROI was found to be 0.11 on an average for the whole study period, where it had been 0.13 for the first sub-period and 0.07 for the second sub-period. Thus, in terms of ROI also, the profitability had declined during the new product patent period than it did during the earlier period.

In this analysis, the researcher found that although GPR increased during the new product patent period, the NPR and the ROI decreased during that time, which indicated a decrease in net profit in terms of sales and in terms of investment in Ranbaxy during the new product patent period than during the earlier period.

Thus, in this section, the researcher could establish that the effect of new product patent law on working capital management was not positive for Ranbaxy Laboratories Limited, at least for the study period. The decreased liquidity position and decreased operational efficiency adversely affected the profitability of the concern.

ESTIMATED INDICES FOR LIQUIDITY, OPERATIONAL EFFICIENCY AND PROFITABILITY RATIOS IN RANBAXY LABORATORIES LTD. THROUGH FACTOR ANALYSIS

In Table 6, the factor score, which is the result of principal component analysis undertaken for the construction of indices for liquidity, operational efficiency and profitability are presented. Here, liquidity ratios can be clubbed through principal component analysis to form an index for liquidity as the KMO measure of sampling adequacy is found to be 0.565 and as per Bartlett's test of sphericity, the Chi-square value is estimated to be 35.687, which is significant at 1% level .One principal component is selected on the basis of Keiser's criterion and shown as Fac1_1.The researcher next derived an index for operational efficiency ratios for Ranbaxy Laboratories Ltd. Here, the KMO measure of sampling adequacy was found to be 0.518, and as per Bartlett's test of sphericity, the Chi-square value was 41.820, which is significant at 1% probability level. Here, two components were obtained as per Keiser criterion, but the first one was chosen due to higher Eigen value and higher percentage of sampling variance. The corresponding factor score for the chosen principal component was considered as the operational efficiency index as shown in the Table as Fac1_2. Lastly, the researcher constructed an index for profitability ratios, which is also statistically valid as the KMO measure of sampling adequacy was found to be 0.636 and as per Bartlett's test of sphericity, the chi-square value was estimated to be 28.959, which is significant at 1% level. There is one component that was obtained as principal component on the basis of Keiser criterion. The corresponding factor scores are considered as the index for profitability ratios, and which is indicated as fact1_3 in Table 6.

ASSOCIATION AMONG INDICES TO FIND OUT THE IMPACT OF ONE ON OTHER

Once indices are framed out in this section, the researcher tried to identify the impact of liquidity index and operational efficiency index on the profitability index through simple linear regression equation, which is as follows;

Fac (1_3)= 7.798E-07$_{(.327)}$ +.220$^{**}_{(.345)}$Fac(1_1)

Fac (1_3)= -7.228E-07$_{(.322)}$ +.278$^{**}_{(.340)}$Fac(1_2)

** indicates significant at 5% level,

Fac (1_1) = Liquidity Index

Fac (1_2) = Operational Efficiency Index

Fact (1_3) = Profitability Index

+ Values within parentheses are standard error

The regression result showed that both liquidity and operational efficiency significantly (positively) impact profitability at 5% probability level.

CONCLUSIONS

1. All the financial parameters were found to have been increased during the new product patent period than during the earlier period.

2. Along with different value parameters i.e. gross sales, net sales, total assets, value of output, we have found that the cost of production also increased heavily, and as a result, the profit after tax and net worth did not increase as the value of output increased.

3. The comparative study with seven other pharmaceutical companies revealed that Ranbaxy ran along with all the back runners in term of financial ratios framed.

4. It was found that Ranbaxy has very small ratio values in Gross Sales/ Current Asset and Value of Output/ Current Assets in comparison to the other seven companies, which at the outset, established the need for proper management of working capital.

The researcher analyzed the main theme of the case study on the basis of three classified analysis - namely, the liquidity analysis, operational efficiency analysis and profitability analysis. The liquidity analysis entails the liquidity management, which is the sole objective of working capital management. The Operational efficiency analysis identifies the efficiency of the component of working capital in an overall manner. The profitability, as the sole criterion, defines the performance of the firm as indicators of all activities. The findings in these sections can be enumerated as follows :

1. The sub-period analysis of most of the liquidity ratios were found to have decreased on an average in the second sub-period i.e. during the new product patent period than during the earlier period under study. This implied reduced liquidity during that period, although the value of components of working capital increased during the second sub-period. This indicated bad management of working capital during that period. It can be inferred that due to economic reforms, the availability of the component of working capital can be found with ease. Still, the reforms did not bring about improvement , rather they created dislocation from the attained position.

2. The operational efficiency ratios were also found to have been reduced in the second sub-period. In fact, different ratios have different implications; still most of them have similar impact towards working capital management. Among components of current assets, the efficiencies were found be worsen during the new product patent period. This also indicates towards bad management of working capital. Here also, once again, the introduction of new product patent law could not meet its desirable goal.

3. The profitability ratios comprised of GPR, NPR and ROI. The GPR was found to have increased in the second sub period; still, the NPR and ROI reduced substantially in this period than they did in the earlier period. This implies that the operating cost and other costs increased heavily during the new product patent period, which ultimately reduced the profitability of the company. This is also indicative of bad practice of working capital management.

4. The impact of liquidity and operational efficiency indices on profitability index were found to be significantly positive, which meant that if the liquidity increased, the profitability will be increased, and also the operational

efficiency of component of working capital increased, the profitability also increased. This asks for further improvement of liquidity and operational efficiency in the component of working capital to improve the profitability of the company.

In terms of findings obtained, it could be said that although Ranbaxy Laboratories Limited occupied the largest position in terms of market share and although the company had other definite favorable conditions, still during the new product patent period, the working capital management of this company has worsened. The liquidity, operational efficiency and ultimately, the profitability declined during the period due to ill effect of the new product patent law on this company. The credit worthiness, interest rate deregulation, money and debt market reconstruction, cautious cash management and ultimately, the competitive endeavor that actually pointed out for better management of working capital of the domestic company under financial sector reforms, were found to be ineffective ; rather they were detrimental for a company like Ranbaxy, who is a giant in pharmaceutical industries in domestic as well as the international market. The company incurred huge loses in the year 2008 (this happened for the first time in the history of Ranbaxy since its inception). There is no doubt that analysis on the basis of three years' performance is not sufficient enough to make a concluding remark, still, in view to pro-verb *'morning shows the day'*, it can be said that new product patent law may create enough scope for better performance for the beginners, but not for the established firms like Ranbaxy.

TABLES

Table 1 : Representation Of Over Time Movement of Some Economic Variables of Ranbaxy Laboratories Ltd. with Their Mean and Std. Dev For The Whole Period and Various Sub Periods and % Change for 1st Sub Period and 2nd Sub- Period (Value in Real ₹ Lakh)

YEAR	TASSET	GSALES	NSALES	VOF OUT	COSTOPRD	PAT	Net Worth
1998	2133.26	1075.76	1001.19	975.13	689.1	117.01	1400.84
1999	2129.53	1637.35	1538.47	1570.35	1027.54	196.88	1497.94
2000	2256.45	1754.75	1654.95	1674.98	1163.36	182.44	1582.66
2001	2314.85	2135.5	2046.78	2075.35	1343.74	251.96	1602.2
2002	2813.78	3119.99	2931.13	3026.12	1661.53	623.58	1873.43
2003	3620.4	3709.3	3037.6	3662.03	1927.23	794.78	2319.78
2004	4164.72	3475.44	3706.3	3789.12	2069.89	528.47	2506.68
2005	4804.66	4047.15	3575.44	3606.4	2120.65	223.69	2377.02
2006	7053.28	4428.56	4047.15	4091.85	2346.04	380.54	2349.13
2007	7956.91	4479.93	4428.56	4469.21	2573.79	617.72	2537.22
AV-Total	**3924.78**	**2986.373**	**2796.76**	**2894.05**	**1692.29**	**391.71**	**2004.69**
Av1st7yrs	**2776.14**	**2415.441**	**2273.77**	**2396.15**	**1411.77**	**385.02**	**1826.22**
Avlast3yrs	**5934.91**	**3985.503**	**3711.98**	**3765.38**	**2183.19**	**403.41**	**2317.02**

TASSET- TOTAL ASSET, GSALES- GROSS SALES, NSALES- NET SALES, COSTPROD- COST OF PRODUCTION, PAT- PROFIT AFTER TAX, AV.-AVERAGE, STD.DEV.-STANDARD DEVIATION, INCRE.-INCREASE

Source of data: As mentioned in database

Table 2: Identification of Proportionate Position of Different Value Parameters Amongst Pharmaceutical Companies In India For the Period 1997-2008 (Value in ₹ lakh in real term)

Ratios/ Asset Position	Foreign Companies				Indian Companies			
	Merck	Novartis	Pfizer	Glaxo	Ranbaxy	DRL	Dabur	Lupin
Total Assets/Current Assets	2.015	1.290	1.114	1.612	1.994	1.625	2.030	1.657
Gross Sales/ Current Assets	2.426	1.605	1.088	1.761	1.492	1.057	3.534	1.406
Value of Output/ Current Assets	2.267	1.583	0.999	1.567	1.471	1.028	3.414	1.374

Source of data: As mentioned in database

Table 3: Estimated Different Liquidity Ratios of Ranbaxy in India, 1998-2007

YEAR	CR	QR	SQR	CA/TA
1998	3.34	2.44	0.13	0.56
1999	3.04	2.14	0.13	0.57
2000	2.42	1.66	0.03	0.59
2001	1.81	1.20	0.08	0.59
2002	1.93	1.27	0.11	0.64
2003	1.96	1.40	0.08	0.69
2004	1.54	0.95	0.02	0.56
2005	1.72	1.09	0.08	0.50
2006	1.73	1.10	0.05	0.37
2007	1.52	1.02	0.09	0.37
AV-Total	**2.10**	**1.43**	**0.08**	**0.54**
Av1st7yrs	**2.29**	**1.58**	**0.08**	**0.60**
Avlast3yrs	**1.77**	**1.16**	**0.08**	**0.45**

CR= Current Ratio, QR= Quick Ratio, SQR= Super Quick Ratio, CATA= Current Assets to Total Asset

Table 4:Over Time Movement of Selected Operational Efficiency Ratios of Ranbaxy in India, 1998-2007

YEAR	ITR	DTR	CVR
1998	4.32	4.14	21.09
1999	4.78	3.94	30.57
2000	4.50	3.94	109.17
2001	4.87	4.60	34.47
2002	5.64	4.96	28.91
2003	5.64	6.26	30.83
2004	4.72	5.97	99.47
2005	4.10	4.60	30.67
2006	4.44	4.51	56.88
2007	4.64	4.72	24.54
AV-Total	**4.77**	**4.76**	**46.66**
Av1st7yrs	**4.92**	**4.83**	**50.64**
Avlast3yrs	**4.39**	**4.61**	**37.36**

ITR= Inventory Turnover Ratio, DTR= Debtor Turnover Ratio, CVR= Cash Velocity Ratio, FATR= Fixed Assets Turnover Ratio, CATR= Current Assets Turnover Ratio, DVEL=Debtors Velocity, CVEL= Creditors Velocity
AV Total = Arithmetic mean of total study period (1998-2007),
Av 1st 7 yrs= Arithmetic mean of first seven years (1998-2004).
Av last 3yrs= Arithmetic mean of last three years (2005-2007)

Table 5: Year- Wise Estimated Profitability Ratios Ranbaxy in India, 1998-2007

YEAR	GPR	NPR	ROI
1998	0.20	0.12	0.05
1999	0.21	0.13	0.09
2000	0.18	0.11	0.08
2001	0.18	0.12	0.11
2002	0.25	0.21	0.22
2003	0.27	0.26	0.22
2004	0.20	0.14	0.13
2005	0.08	0.06	0.05
2006	0.13	0.09	0.05
2007	0.70	0.14	0.08
AV-Total	**0.24**	**0.14**	**0.11**
Av1st7yrs	**0.21**	**0.16**	**0.13**
Avlast3yrs	**0.29**	**0.11**	**0.07**

GPR= Gross Profit Ratio, NPR= Net Profit Ratio,
ROI= Return On Investment
AV Total = Arithmetic mean of total study period (1998-2007),
Av 1st 7 yrs= Arithmetic mean of first seven years (1998-2004).
Avlast 3yrs= Arithmetic mean of last three years (2005-2007)

Table 6: Indices of Liquidity, Operational Efficiency and Profitability Ratios Obtained through Principal Component Analysis of Ranbaxy

Fac 1_1	Fac 1_2	Fac 1_3
1.9814	-0.78813	-0.26472
1.46061	-0.49213	-0.18528
0.48866	1.95699	-0.37603
-0.45402	-0.37114	-0.35795
-0.28045	-0.55131	0.14951
-0.14979	-0.50283	0.29996
-0.91139	1.65845	-0.22119
-0.63038	-0.5062	-0.99895
-0.62063	0.3101	-0.68951
-0.884	-0.71379	2.64415

Note: Fac1_1 = Liquidity Index
Fac1_2= Operational Index
Fac1_3 = Profitability Index

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❁ The month wise return data for gold chart shows that in the month of Jan'08,Dec'08,Feb'09 & November'09, gold returns were nearly +10%.

❁ The month wise return data for gold chart shows that in the months of Jun'05,Sep'06,May'07,Apr'08,Aug'08,Nov'08 & Apr'09, gold returns were nearly -10%.

❁ Based on price elasticity of demand and supply theory, the researcher identified that gold price is not affected by its demand and supply.

❁ Based on the Moving average (21 days & 200 days) chart, gold shows an uptrend because the price line is above the trend line and is based on moving average cross over. The researcher confirmed the uptrend of gold price again because the short term moving average line(21DMA) is above the long term Moving average(200days).

❁ The compounded annual growth rate for gold was 18.62% for the year April'2005-November'2010 and as per the exponential growth rate formula, the predicted average yearly rate for gold in 2011 is ₹ 23348 and in 2012 is ₹ 23426.

CONCLUSION

Gold has traditionally been seen as a very conservative investment due to its relative scarcity, but it tends to be a very accurate reflector of short term fear about the economy in general. And based on the above said analysis, it is implied that gold is going to have bull trend in the future. So, people can go for gold investments with a short term stop loss of ₹ 18700 levels to earn a good return.

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