

A study on working capital management of pharmaceutical industry in india

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ABSTRACT: The Indian Pharmaceutical sector is highly fragmented with more than 20,000 registered units. It has expanded drastically in the last two decades. The pharmaceutical and chemical industry in India is an extremely fragmented market with severe price competition and government price control. The Pharmaceutical Industry in India meets around 705 of the country's demand for bulk drugs, drug intermediates, pharmaceutical formulation, chemicals, tablets, orals and injectibles. The Indian Pharmaceutical Industry is developing drastically every year. It is felt that there is the need to study the role of working capital on profitability of a Pharmaceutical company. Conventionally, it has been seen that if a company desires to take a greater risk for bigger profits and losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. Hence an attempt has been made to analyze the working capital position of the industry with the help of mean, standard deviation, co-efficient of variation, multiple regression, and analysis of variance. The increase in working capital will improve the financial performance in future.

Keywords: technology, medicines, sophisticated, antibiotics, fragmented.

INTRODUCTION

“The Indian Pharmaceutical Industry is a success story providing employment for millions and ensuring that essential drugs at affordable prices are available to the vast population of this sub-continent.”

The Indian Pharmaceutical Industry today is in the front rank of India's science-based industries with wide-ranging capabilities in the complex field of drug manufacture and technology. It ranks very high in the third world, in terms of technology, quality and range of medicines manufactured. From simple headache pills to sophisticated antibiotics and complex cardiac compounds, almost every type of medicine is now made indigenously 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 have been approved by the 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.

The Indian Pharmaceutical sector is highly fragmented with more than 20,000 registered units. It has expanded drastically in the last two decades. The leading 250 Pharmaceutical Companies control 70 percent of the market with market leader holding nearly 7 percent of the market share. It is an extremely fragmented market with severe price competition and government price control.

The Pharmaceutical Industry in India meets around 70 percent of the country's demand for bulk drugs, drug intermediates, pharmaceutical formulations, chemicals, tablets, capsules, orals and injectibles. There are about 250 large units and about 8000 Small-Scale Units, which form the core of the Pharmaceutical Industry in India (including 5 Central Public Sector Units). These units produce the complete range of pharmaceutical formulations, i.e., medicines ready for consumption by patients and about 350 bulk drugs, i.e., chemicals having therapeutic value and used for production of pharmaceutical formulations.

Following the de-licensing of the Pharmaceutical Industry, industrial licensing for most of the drugs and pharmaceutical products has been done away with. Manufacturers are free to produce any drug duly approved by the drug control authority. Technologically strong and totally self-reliant, the Pharmaceutical Industry in India has low costs of production, low R&D costs, innovative scientific manpower, strength of national laboratories and an increasing balance of trade. The Pharmaceutical Industry, with its rich scientific talents and research capabilities, supported by intellectual property protection regime is well set to take on the international market.

REVIEW OF LITERATURE

This chapter presents a review of previous studies relating to the research problem selected for the present study and enables the researcher to have an in-depth knowledge over the various concept of research problem. A review of the important studies and different concepts

relating to the financial performance has been presented. In this regard, the researcher has referred to various academic journals, magazines, books etc.

Rafuse (1996)¹ in his study “Working Capital Management” says that the working capital meets the short-term financial requirements of a business enterprise. It is a trading capital, not retained in the business in a particular form for longer than a year. The money invested in it changes form and substance during the normal course of business operations. The need for maintaining an adequate working capital can hardly be questioned. Just as circulation of blood is very necessary in the human body to maintain life, the flow of funds is very necessary to maintain business. If it becomes weak, the business can hardly prosper and survive. Working capital starvation is generally credited as a major cause if not the major cause of small business failure in many developed and developing countries.

Jarvis (1998)² in his report said that the success of a firm depends ultimately, on its ability to generate cash receipts in excess of disbursements. The cash flow problems of many small businesses are exacerbated by poor financial management and in particular the lack of planning cash requirements.

STATEMENT OF THE PROBLEM

The development of industries depends on several factors such as finance, personnel, technology, quality of the product and marketing. Out of these, financial and operating aspects assume a significant role in determining the growth of industries. All of the company's operations virtually affect its need for cash. Most of the data covering operational areas are however outside the direct responsibility of the financial executive. Unless the top management appreciates the value of a good financial and operating analysis, there will be continuing problems for the financial executives to find the working capital position of the concern.

¹ Rafuse.M.E, “Working Capital Management: An Urgent Need to Refocus”, *Journal of Management Decision*, Vol. 34, No 2, pp 59-63.

² Jarvis.R, Kitching.J, Curran.J and Lightfoot.G, “The Financial Management of Small Firms An Alternative Perspective”, *ACCA Research Report*, No. 49. 1998, pp 55-56.

In this context the researcher is interested in undertaking an analysis to find the financial performance of Pharmaceutical Industry. Hence, the present study entitled “a study on financial performance of Pharmaceutical Industry in India” has been undertaken.

OBJECTIVES OF THE STUDY

The following are the specific objectives of the study.

1. To analyze the working capital position of selected Pharmaceutical Companies in India.
2. To analyze the factors influencing the working capital of selected Pharmaceutical Companies in India.
3. To offer findings and suggestions and conclusion of this study.

SCOPE OF THE STUDY

The present study aims at assessing the working capital position of Pharmaceutical Industry in India. The study could help the company as well as the investors to understand its financial efficiency. It aims to help the management to find out its financial problems at present and the specific areas in the business, which might need some effort for more effective and efficient utilization of its resources.

METHODOLOGY

Sources of Data

Secondary data is used for the study. The required data for the study is collected and compiled from “PROWESS” database of Centre for Monitoring Indian Economy (CMIE) for the period from 2009-2010 to 2013-2014 which is a reliable and empowered corporate database. In addition to this, supportive data is collected from books, journals, annual reports and various news-papers.

Techniques of Analysis

Ratio analysis is a technique adopted to analysis and interpret general financial statements to assess the working capital position. Further a comprehensive analysis is carried by applying statistical techniques namely mean, standard deviation, co-efficient of variance, multiple regressions and analysis of variance.

Sample Design

As the complete source list of all the Pharmaceutical Companies is not available, the data for this study is selected based on convenience sampling method. Among the companies listed with major stock exchange of India namely, Bombay Stock Exchange and National Stock Exchange of India, 10 companies with consistent financial data are selected. Certain companies are excluded owing to irregular and/or inconsistent financial data support.

The following are the selected Pharmaceutical companies of this study

- ❖ Ranbaxy Laboratories Ltd
- ❖ Sun Pharma Industries
- ❖ Dr.Reddy's Laboratories Ltd
- ❖ Cadila Health Care
- ❖ Cipla
- ❖ Alpa
- ❖ Aurobindo
- ❖ Aventis Pharma
- ❖ Ipca Laboratories
- ❖ Glaxo Smith Kline

Period of the Study

The study covers a period of five years from the financial year 2009-2010 to 2013-2014.

ANALYSIS OF LIQUIDITY

The working capital can be measured with the help of the given ratios.

- ❖ Working Capital Turnover Ratio
- ❖ Working Capital to Net Worth
- ❖ Net Working Capital to Current Liabilities
- ❖ Net Sales to Net worth

Table 1 shows the working capital turnover ratios of Pharmaceutical Companies in India during the period from 2009-2010 to 2013-2014.

Table 1
Working Capital Turnover Ratio

(Rs. in crores)

| Company Name | Mean | S.D | C.V |
|--------------------------|----------------|----------------|-----------------|
| Ranbaxy | 1.6350 | 2.9936 | 183.0951 |
| Sun | 1.1498 | 0.3117 | 27.1150 |
| Dr.Reddy | 1.7142 | 0.2926 | 17.0735 |
| Cadila | 5.1033 | 1.8688 | 36.6199 |
| Cipla | 1.4569 | 0.1561 | 10.7213 |
| Aventis | 1.6994 | 0.2993 | 17.6153 |
| Alpa | 3.5990 | 0.7104 | 19.7411 |
| Aurobindo | 32.5123 | 69.0683 | 212.4374 |
| Ipca | 2.8201 | 0.6451 | 22.8759 |
| Glaxo Smith Kline | 0.8937 | 0.2698 | 30.1972 |

Source: Compiled and Calculated from the data published in CMIE

Table 1 reveals the working capital turnover ratio of selected Pharmaceutical Companies in India from 2009-2010 to 2013-2014. The working capital turnover ratio shows the fluctuating trend during the study period. This working capital ratio indicates the net working capital found by deduction from the total of the current assets and the total of current liabilities. The Aurobindo Pharma Ltd has the highest average working capital turnover ratio of 32.5123 per cent and the Glaxo Smith Kline has the lowest average working capital ratio of 0.8937 per cent.

The Aurobindo Pharma Ltd has the highest standard deviation of working capital turnover ratio of 69.0683 per cent. The Cipla has the lowest standard deviation of working capital turnover ratio of 0.1561 per cent and it is found to be stable in the working capital turnover ratio.

The Aurobindo Pharma Ltd has the highest co-efficient variance of working capital turnover ratio of 212.4374 per cent. The Cipla has the lowest co-efficient variance of working capital turnover ratio of 10.7213 per cent and it is found that there is a consistency in the working capital turnover ratio.

Table 2 shows the working capital to net worth ratios of Pharmaceutical Companies in India during the period from 2009-2010 to 2013-2014.

Table 2
Working Capital to Net worth Ratio

(Rs. in crores)

| Company Name | Mean | S.D | C.V |
|--------------------------|-----------------|----------------|-----------------|
| Ranbaxy | 31.3870 | 36.8669 | 117.4591 |
| Sun | 59.4046 | 35.7433 | 60.1693 |
| Dr.Reddy | 47.5384 | 11.7431 | 24.7024 |
| Cadila | 31.5478 | 6.8230 | 21.6275 |
| Cipla | 81.6265 | 18.7740 | 22.9999 |
| Aventis | 73.5704 | 5.2669 | 7.1591 |
| Alpa | 66.2781 | 46.2433 | 69.7716 |
| Aurobindo | 116.8468 | 26.9520 | 23.0661 |
| Ipca | 71.1775 | 12.6485 | 17.7704 |
| Glaxo Smith Kline | 136.4413 | 37.9751 | 27.8325 |

Source: Compiled and Calculated from the data published in CMIE

Table 2 reveals the working capital to net worth ratio of selected Pharmaceutical Companies in India from 2009-2010 to 2013-2014. The working capital to net worth ratio shows the fluctuating trend during the study period. This working capital to net worth ratio indicates the extent to which proprietor's funds are invested in networking capital. A high ratio of an indication of more amount of investment in networking capital. The ratio measures the extent to which a company's net worth is invested in liquidity, company's asset. It measures the amount of capital that remains for investment in other more fixed asset. The Glaxo Smith Kline has the highest average working capital to net worth ratio of 136.4413 per cent and the Ranbaxy Laboratories Ltd has the lowest average working capital to net worth ratio of 31.3870 per cent.

The Alpa has the highest standard deviation of working capital to net worth ratio of 46.2433 per cent. The Aventis Pharma Ltd has the lowest standard deviation of working capital to net worth ratio of 5.2669 per cent and it is found to be stable in the working capital to net worth ratio.

The Ranbaxy Laboratories has the highest co-efficient variance of working capital to net worth ratio of 117.4591 per cent. The Cipla has the lowest co-efficient variance of working

capital to net worth ratio of 7.1591 per cent and it is found that there is a consistency in the working capital to net worth ratio.

Table 3 shows the Net working capital to current liabilities ratios of Pharmaceutical Companies in India during the period from 2009-2010 to 2013-2014.

Table 3
Net working Capital to Current Liabilities Ratio
(Rs. in crores)

| Company Name | Mean | S.D | C.V |
|-------------------|--------|---------|----------|
| Ranbaxy | 0.705 | 0.6366 | 90.3053 |
| Sun | 3.9926 | 1.6959 | 42.476 |
| Dr.Reddy | 2.316 | 0.9179 | 39.6365 |
| Cadila | 0.7943 | 0.3050 | 38.4093 |
| Cipla | 8.5757 | 11.9686 | 139.5641 |
| Aventis | 3.9271 | 0.4077 | 10.3819 |
| Alpa | 1.2151 | 0.6782 | 55.8153 |
| Aurobindo | 2.7633 | 0.5004 | 18.1117 |
| Ipca | 2.0037 | 0.4583 | 22.8729 |
| Glaxo Smith Kline | 7.1766 | 2.1677 | 30.2051 |

Source: Compiled and Calculated from the data published in CMIE

Table 3 reveals the networking capital to current liabilities ratio of selected Pharmaceutical Companies in India from 2009-2010 to 2013-2014. The networking capital to current liabilities ratio shows the fluctuating trend during the study period. This working capital to current liabilities ratio indicates that the company is liquid and has the adequate working capital to meet its current liabilities in time. The Cipla has the highest average working capital to current liabilities ratio of 8.5757 per cent and the Ranbaxy Laboratories Ltd has the lowest average working capital to current liabilities ratio of 0.705 per cent.

The Cipla has the highest standard deviation of networking capital to current liabilities ratio of 11.9686 per cent. The Cadila Health Care Ltd has the lowest standard deviation of networking capital to current liabilities ratio of 0.3050 per cent and it is found to be stable in the networking capital to current liabilities ratio.

The Cipla has the highest co-efficient variance of networking capital to current liabilities ratio of 139.5641 per cent. The Aventis Pharma Ltd has the lowest co-efficient variance of networking capital to current liabilities ratio of 10.3819 per cent and it is found that there is a consistency in the networking capital to current liabilities ratio.

Table 4 shows the net sales to net worth ratios of Pharmaceutical Companies in India during the period from 2009-2010 to 2013-2014.

Table 4
Net Sales to Net worth Ratio

(Rs. in crores)

| Company Name | Mean | S.D | C.V |
|-------------------|---------|---------|----------|
| Ranbaxy | 1.3943 | 0.3140 | 22.5245 |
| Sun | 0.5969 | 0.2046 | 34.2927 |
| Dr.Reddy | 0.7897 | 0.0819 | 10.3766 |
| Cadila | 1.5199 | 0.2349 | 15.4549 |
| Cipla | 1.1747 | 0.2054 | 17.4858 |
| Aventis | 1.2394 | 0.1444 | 11.6554 |
| Alpa | 2.2885 | 1.4668 | 64.0940 |
| Aurobindo | 38.0897 | 81.0502 | 212.7876 |
| Ipca | 1.9454 | 0.1030 | 5.2978 |
| Glaxo Smith Kline | 1.1419 | 0.0895 | 7.8453 |

Source: Compiled and Calculated from the data published in CMIE

Table 4 reveals the net sales to net worth ratio of selected Pharmaceutical Companies in India from 2009-2010 to 2013-2014. The net sales to net worth shows the fluctuating trend during the study period. The amount of sales generated by a company after the deduction of returns, allowances for damaged or missing goods and any discounts allowed. For a company the net worth is known as shareholders equity and is determined by subtracting liabilities on the balance sheet from asset. The Aurobindo Pharma Ltd has the highest average net sales to net worth ratio of 38.0897 per cent and Sun Pharma Ltd has the lowest average net sales to net worth ratio of 0.5969 per cent.

The Aurobindo Pharma Ltd has the highest standard deviation of net sales to net worth ratio of 81.0502 per cent. The Dr.Reddy Laboratories Ltd has the lowest standard deviation of

net sales to net worth ratio of 0.0819 per cent and it is found to be stable in the net sales to net worth ratio.

The Aurobindo Pharma Ltd has the highest co-efficient variance of net sales to net worth ratio of 212.7876 per cent. The Ipca has the lowest co-efficient variance of net sales to net worth ratio of 5.2978 per cent and it is found that there is a consistency in the net sales to net worth ratio.

MULTIPLE REGRESSION ANALYSIS

Table 5 shows the Multiple Regression Analysis of Pharmaceutical Companies in India during the period of 2009-2010 to 2013-2014.

Table 5
Multiple Regression Analysis of Pharmaceutical Companies in India

| Company Name | Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------------------|-------|---------|----------|-------------------|----------------------------|
| Ranbaxy | 1 | .960(a) | .923 | .690 | 9.35209 |
| Sun | 1 | .974(a) | .976 | .674 | .04848 |
| Dr.Reddy | 1 | .991(a) | .982 | .930 | 2.13386 |
| Cadila | 1 | .989(a) | .977 | .909 | 2.28883 |
| Cipla | 1 | .973(a) | .946 | .785 | 1.02631 |
| Aventis | 1 | .692(a) | .479 | -1.083 | 3.03823 |
| Alpa | 1 | .967(a) | .934 | .737 | 1.46309 |
| Aurobindo | 1 | .992(a) | .985 | .939 | 1.59936 |
| Ipca | 1 | .950(a) | .902 | .609 | 1.82739 |
| Glaxo Smith Kline | 1 | .976(a) | .953 | .812 | 1.85395 |

a Predictors: (Constant), NWCL, WCT, WCNW

Table 5 represents the multiple regression analysis of Pharmaceutical Companies in India statistical significance of the model. The R² value at .923 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking

capital to current liabilities have 92.3 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Ranbaxy Laboratories Ltd statistical significance of the model. The R^2 value at .923 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 92.3 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Sun Laboratories Ltd statistical significance of the model. The R^2 value at .976 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 97.6 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Dr.Reddy's Laboratories Ltd statistical significance of the model. The R^2 value at .982 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 98.2 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Cadila statistical significance of the model. The R^2 value at .977 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 97.7 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Cipla statistical significance of the model. The R^2 value at .946 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 94.6 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Aventis Pharma Ltd statistical significance of the model. The R^2 value at .479 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 47.9 per cent influence on the dependent variable of net profit ratio which is not significant at 5 per cent level.

The Alpa statistical significance of the model. The R^2 value at .934 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 93.4 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Aurobindo Pharma Ltd statistical significance of the model. The R^2 value at .985 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 98.5 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Ipca Laboratories Ltd statistical significance of the model. The R^2 value at .902 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 90.2 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Glaxo Smith Kline statistical significance of the model. The R^2 value at .953 states that the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities have 95.3 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

ONE-WAY ANOVA

Table 6 exhibits the One Way ANOVA of the Ranbaxy Laboratories Ltd during the study period from 2009-2010 to 2013-2014.

Table 6
One Way ANOVA of the Ranbaxy Laboratories Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 3409.418 | 3 | 1136.473 | 3.321 | .047 |
| Within Groups | 5474.557 | 16 | 342.160 | | |
| Total | 8883.975 | 19 | | | |

Table 6 shows the one way ANOVA of the Ranbaxy Laboratories Ltd calculated F value of the variables such as 3.321 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 7 exhibits the one way ANOVA of the Sun Pharma Ltd during the study period from 2009-2010 to 2013-2014.

Table 7
One Way ANOVA of the Sun Pharma Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 12427.977 | 3 | 4142.659 | 12.940 | .000 |
| Within Groups | 5122.417 | 16 | 320.151 | | |
| Total | 17550.394 | 19 | | | |

Table 7 shows the one way ANOVA of the Sun Pharma Ltd calculated F value of the variables such as 12.940 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 8 exhibits the one way ANOVA of the Dr.Reddy's Laboratories Ltd during the study period from 2009-2010 to 2013-2014.

Table 8
One Way ANOVA of the Dr.Reddy's Laboratories Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 7917.399 | 3 | 2639.133 | 76.035 | .000 |
| Within Groups | 555.349 | 16 | 34.709 | | |
| Total | 8472.748 | 19 | | | |

Table 8 shows the one way ANOVA of the Dr.Reddy's Laboratories Ltd calculated F value of the variables such as 76.035 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 9 exhibits the one way ANOVA of the Cadila Health Care Ltd during the study period from 2009-2010 to 2013-2014.

Table 9
One Way ANOVA of the Cadila Health Care Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 3223.382 | 3 | 1074.461 | 85.624 | .000 |
| Within Groups | 200.778 | 16 | 12.549 | | |
| Total | 3424.160 | 19 | | | |

Table 9 shows the one way ANOVA of the Cadila Health Care Ltd calculated F value of the variables such as 85.624 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 10 exhibits the one way ANOVA of the Cipla during the study period from 2009-2010 to 2013-2014.

Table 10
One Way ANOVA of the Cipla

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 22927.001 | 3 | 7642.334 | 61.659 | .000 |
| Within Groups | 1983.117 | 16 | 123.945 | | |
| Total | 24910.118 | 19 | | | |

Table 10 shows the one way ANOVA of the Cipla calculated F value of the variables such as 61.659 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 11 exhibits the one way ANOVA of the Aventis Pharma Ltd during the study period from 2009-2010 to 2013-2014.

Table 11
One Way ANOVA of the Aventis Pharma Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 19074.769 | 3 | 6358.256 | 907.741 | .000 |
| Within Groups | 112.072 | 16 | 7.004 | | |
| Total | 19186.841 | 19 | | | |

Table 11 shows the one way ANOVA of the Aventis Pharma Ltd calculated F value of the variables such as 907.741 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 12 exhibits the one way ANOVA of the Alpa during the study period from 2009-2010 to 2013-2014.

Table 12
One Way ANOVA of the Alpa

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 15331.347 | 3 | 5110.449 | 9.545 | .001 |
| Within Groups | 8566.255 | 16 | 535.391 | | |
| Total | 23897.602 | 19 | | | |

Table 12 shows the one way ANOVA of the Alpa calculated F value of the variables such as 9.545 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 13 exhibits the one way ANOVA of the Aurobindo Pharma Ltd during the study period from 2009-2010 to 2013-2014.

Table 13
One Way ANOVA of the Aurobindo Pharma Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 35617.565 | 3 | 11872.522 | 3.936 | .028 |
| Within Groups | 48264.961 | 16 | 3016.560 | | |
| Total | 83882.526 | 19 | | | |

Table 13 shows the one way ANOVA of the Alpa calculated F value of the variables such as 3.936 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 14 exhibits the one way ANOVA of the Ipca Laboratories Ltd during the study period from 2009-2010 to 2013-2014.

Table 14
One Way ANOVA of the Ipca Laboratories Ltd

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 17815.331 | 3 | 5938.444 | 147.885 | .000 |
| Within Groups | 642.494 | 16 | 40.156 | | |
| Total | 18457.825 | 19 | | | |

Table 14 shows the one way ANOVA of Ipca calculated F value of the variables such as 147.885 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

Table 15 exhibits the one way ANOVA of the Glaxo Smith Kline during the study period from 2009-2010 to 2013-2014.

Table 15
One Way ANOVA of the Glaxo Smith Kline

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|-----------------------|-----------|--------------------|----------|-------------|
| Between Groups | 66830.421 | 3 | 22276.807 | 61.585 | .000 |
| Within Groups | 5787.563 | 16 | 361.723 | | |
| Total | 72617.984 | 19 | | | |

Table 15 shows the one way ANOVA of the Glaxo Smith Kline calculated F value of the variables such as 61.585 which are more than the table value of 3.238 at 5 per cent significant level. So, there is a significant relationship between working capital ratios.

SUMMARY OF FINDINGS

Working Capital Turnover Ratio

The Aurobindo has the highest average working capital turnover ratio of 32.5123 per cent and Glaxo Smith Kline has the lowest average working capital ratio of 0.8937 per cent.

The Aurobindo has the highest standard deviation of working capital turnover ratio of 69.0683 per cent. The Cipla has the lowest standard deviation of working capital turnover ratio of 0.1561 per cent and it is found to be stable in the working capital turnover ratio.

The Aurobindo has the highest co-efficient variance of working capital turnover ratio of 212.4374 per cent. The Cipla has the lowest co-efficient variance of working capital turnover ratio of 10.7213 per cent and it is found that there is a consistency in the working capital turnover ratio.

Working Capital to Net worth Ratio

The Glaxo Smith Kline has the highest average working capital to net worth ratio of 136.4413 per cent and Ranbaxy Laboratories Ltd has the lowest average working capital to net worth ratio of 31.3870 per cent.

The Alpa has the highest standard deviation of working capital to net worth ratio of 46.2433 per cent. The Aventis Pharma has the lowest standard deviation of working capital to

net worth ratio of 5.2669 per cent and it is found to be stable in the working capital to net worth ratio.

The Ranbaxy Laboratories has the highest co-efficient variance of working capital to net worth ratio of 117.4591 per cent. The Cipla has the lowest co-efficient variance of working capital to net worth ratio of 7.1591 per cent and it is found that there is a consistency in the working capital to net worth ratio.

Net working Capital to Current Liabilities Ratio

The Cipla has the highest average working capital to current liabilities ratio of 8.5757 per cent and Ranbaxy Laboratories Ltd has the lowest average working capital to current liabilities ratio of 0.705 per cent.

The Cipla has the highest standard deviation of networking capital to current liabilities ratio of 11.9686 per cent. The Cadila has the lowest standard deviation of networking capital to current liabilities ratio of 0.3050 per cent and it is found to be stable in the networking capital to current liabilities ratio.

The Cipla has the highest co-efficient variance of networking capital to current liabilities ratio of 139.5641 per cent. The Aventis Pharma has the lowest co-efficient variance of networking capital to current liabilities ratio of 10.3819 per cent and it is found that there is a consistency in the networking capital to current liabilities ratio.

Net Sales to Net worth Ratio

The Aurobindo has highest average net sales to net worth ratio of 38.0897 per cent and Sun Pharma has lowest average net sales to net worth ratio of 0.5969 per cent.

The Aurobindo has the highest standard deviation of net sales to net worth ratio of 81.0502 per cent. The Dr.Reddy Laboratories Ltd has the Lowest standard deviation of net sales to net worth ratio of 0.0819 per cent and it is found to be stable in the net sales to net worth ratio.

The Aurobindo has the highest co-efficient variance of net sales to net worth ratio of 212.7876 per cent. The Ipca has the lowest co-efficient variance of net sales to net worth ratio of 5.2978 per cent and it is found that there is a consistency in the net sales to net worth ratio.

MULTIPLE REGRESSIONS FOR WORKING CAPITAL ANALYSIS

In Ranbaxy Laboratories Ltd, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .960(R) with R Square .923. It means that all the independent variables have contributed 92.3 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Sun Pharma Ltd, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .974(R) with R Square .976. It means that all the independent variables have contributed 97.6 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Dr.Reddy's Laboratories Ltd, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .991(R) with R Square .982. It means that all the independent variables have contributed 98.2 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Cadila Health Care Ltd, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .989(R) with R Square .977. It means that all the independent variables have contributed 97.7 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Cipla, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .973(R) with R Square .946. It means that all the independent variables have contributed 94.6 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Aventis Pharma, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .692(R) with R Square .479. It means that all the independent variables have contributed 47.9 per cent on dependent variable of net profit ratio and it is not significant at 5 percent level.

In Alpa, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .967(R) with R Square .934. It means that all the independent variables have contributed 93.4 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Aurobindo, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .992(R) with R Square .985. It means that all the independent variables have contributed 98.5 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Ipca , the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .950(R) with R Square .902. It means that all the independent variables have contributed 97.8 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Glaxo Smith Kline, the multiple regression between net profit ratio and the three independent variables that is working capital turnover ratio, working capital to net worth, and networking capital to current liabilities is found to be .976(R) with R Square .953. It means that all the independent variables have contributed 95.3 per cent on dependent variable of net profit ratio it is significant at 5 percent level.

ONE WAY ANOVA FOR WORKING CAPITAL

The hypothesis is not accepted in Ranbaxy Laboratories Ltd, Sun Pharma Ltd, Dr.Reddy's Laboratories Ltd, Cadila Health Care Ltd, Cipla, Aventis Pharma, Alpa, Aurobindo, Ipca, and Glaxo Smith Kline. Hence, there is a significant relationship between working capital ratios.

SUGGESTIONS

- ❖ An optimum investment in working capital should be determined and firm should ensure a proper balance between profitability and liquidity. Frequency review of current assets and current liabilities may help the management to moderate short-term liquidity issues.
- ❖ Fixed assets should promptly be used in order to ensure efficient management of working capital.

CONCLUSION

The financial health plays a significant role in the successful management of a company. The analysis practically reveals that working capital turnover ratio, working capital to net worth, net working capital to current liabilities, and net sales to net worth, have significant effect on the net profit ratio of the selected pharmaceutical companies during the study period. However, the working capital of the selected pharmaceutical companies in India during the study period is satisfactory. During the period of study there were a few ups and downs in the working capital but it did not affect the operations of the company to a great extent. If the Pharmaceutical Industry has to perform well, it has to invest more capital and has to do more sales, only then it will improve its performance level.

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