A STUDY ON FINANCIAL PERFORMANCE 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 expended 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. There are approximately 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) Looking ahead, the worldwide pharma market is estimated to more than double to $1.3 billion by the year 2020. The Indian Pharmaceutical Industry is developing drastically every year. Hence an attempt has been made to analyze the solvency position of the industry with the help of mean, standard deviation, co-efficient of variation, multiple regression, and analysis of variance. The increase in solvency will not only yield greater efficiency but also improve financial performance in future.

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

INTRODUCTION

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"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,

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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.

Kumar.P (1985),[1] in his study on "corporate growth and profitability in the larger Indian companies", has examined the relationship between profitability and growth in 83 large companies in India's corporate sector during 1969-79. The study reveals a significant inter-study. The very low value of R^2 in all the cases shows that only a small fraction of the growth of firms in India corporate sector has been explained by profitability.

Gopalakrishna Pillai (1986),[2] in his study, "Growth and profitability of diversified companies", has found out that the growth rates of diversified group of companies were higher and further that the profitability parameters of non- diversified group was substantially below those of diversified group. Therefore, diversification strategy certainly helps a company to attain its goals of profitability and as such it is a recommendable policy for a growth strategy.

Jarvis (1998) [3] 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.

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[1] Kumar. P, "Corporate Growth and profitability in the: Large Indian companies", *Margin*, Vol. 17, No.4, July 1985,pp 52-55 .

[2] Gopala Krishna pillai,S. (1986)"Growth and profitability of diversified companie", an unpublished **Ph.d, Thesis**, University of Bombay, Bombay 1986.

[3] 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.

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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 solvency position of the concern.

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 solvency of selected Pharmaceutical Companies in India.
2. To analyze the factors influencing the solvency 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 solvency 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 2004-2005 to 2013-2014. which is a reliable and empowered corporate database. In

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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 profitability 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 ten years from the financial year 2004-2005 to 2013-2014..

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ANALYSIS OF SOLVENCY

The solvency can be measured with the help of the given ratios.

- ❖ Interest Coverage Ratio

- ❖ Proprietary Ratio

- ❖ Fixed Asset to Net Worth Ratio

- ❖ Current Asset to Proprietors Fund Ratio

- ❖ Current Liabilities to Proprietary Fund Ratio

Table 1 shows the interest coverage ratios of Pharmaceutical Companies in India during the period from 2004-2005 to 2013-2014.

Table 1

Interest Coverage Ratio

(Rs. in crores)

Company Name	Mean	S.D	C.V
Ranbaxy	-0.71	3.39	-474.78
Sun	598.08	808.02	135.1
Dr.Reddy	23.33	11.09	47.54
Cadila	4.93	4.17	84.73
Cipla	45.05	22.27	49.44
Aventis	560.51	592.96	105.79
Alpa	4.11	2.68	65.14
Aurobindo	4.17	4.5	107.74
Ipca	8.57	7.26	84.74
Glaxo Smith Kline	1273.79	737.98	57.94

Source: Compiled and Calculated from the data published in CMIE

Table 1 reveals the interest coverage ratio of selected Pharmaceutical Companies in India from 2004-2005 to 2013-2014. The interest coverage ratio shows the fluctuating trend during the

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study period. The method of interest coverage ratio also known as debt services ratio. Net income to debt service ratio or simply debt service ratio used to test the debt-servicing capacity of a firm. The Glaxo Smith Kline has the highest average interest coverage ratio of 1273.79 per cent and the Ranbaxy Laboratories Ltd has the lowest negative average interest coverage ratio of -0.17 per cent.

The Sun Pharma Ltd has the highest standard deviation of interest coverage ratio of 808.02 per cent. The Alpa has the lowest standard deviation of interest coverage ratio of 2.68 per cent it is found to be stable in the interest coverage ratio.

The Sun Pharma Ltd has the highest co-efficient variance of interest coverage ratio of 135.1 per cent. The Ranbaxy Laboratories Ltd has the lowest negative co-efficient variance of interest coverage ratio of -474.78 per cent and it is found that there is a consistency in the interest coverage ratio.

Table 2 shows the proprietary ratios of Pharmaceutical Companies in India during the period from 2004-2005 to 2013-2014.

Table 2

Proprietary Ratio

(Rs. in crores)

Company Name	Mean	S.D	C.V
Ranbaxy	0.42	0.09	21.86
Sun	0.84	0.33	39.52
Dr.Reddy	0.78	0.14	17.42
Cadila	0.61	0.06	9.92
Cipla	0.91	0.07	7.3
Aventis	0.95	0.06	6.46
Alpa	0.75	0.2	26.89
Aurobindo	0.44	0.06	13.54
Ipca	0.67	0.07	10.05
Glaxo Smith Kline	1.01	0.31	30.61

Source: Compiled and Calculated from the data published in CMIE

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Table 2 reveals the the proprietary ratio of selected Pharmaceutical Companies in India from 2004-2005 to 2013-2014. The proprietary ratio shows the fluctuating trend during the study period. The proprietary ratio of the ratio of shareholders funds to total assets. It is an important ratio for determining long-term solvency of a firm. The Glaxo Smith Kline has the highest average proprietary ratio of 1.01 per cent and the Ranbaxy Laboratories Ltd has the lowest average proprietary ratio of 0.42 per cent.

The Sun Pharma Ltd has the highest standard deviation of proprietary ratio of 0.33 per cent. The Cadila,Aventis Pharma Ltd,Aurobindo has the lowest standard deviation of proprietary ratio of 0.06 per cent it is found to be stable in the proprietary ratio.

The Sun Pharma Ltd has the highest co-efficient variance of proprietary ratio of 39.52 per cent. The Aventis Pharma Ltd has the lowest co-efficient variance of proprietary ratio of 6.46 per cent and it is found that there is a consistency in the proprietary ratio.

Table 3 shows the fixed asset to net worth ratios of Pharmaceutical Companies in India during the period from 2004-2005 to 2013-2014.

Table 3

Fixed Asset to Net worth Ratio

(Rs. in crores)

Company Name	Mean	S.D	C.V
Ranbaxy	0.65	0.33	50.46
Sun	0.22	0.1	44.49
Dr.Reddy	0.42	0.25	58.49
Cadila	0.69	0.27	40.04
Cipla	0.64	1.1	172.51
Aventis	0.22	0.05	21.59
Alpa	3.99	5.35	134.24
Aurobindo	0.54	0.4	74.74
Ipca	0.81	0.64	78.08
Glaxo Smith Kline	0.11	0.07	62.59

Source: Compiled and Calculated from the data published in CMIE

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Table 3 reveals the fixed asset to net worth ratio of selected Pharmaceutical Companies in India from 2004-2005 to 2013-2014. The fixed asset to net worth ratio shows the fluctuating trend during the study period. The fixed asset to net worth ratio is establishes the relationship between fixed assets and proprietor's funds. This ratio indicates the extent to which the fixed assets are financed by owner's funds. The Alpa has the highest average fixed asset to net worth ratio of 3.99 per cent and the Glaxo Smith Kline has the lowest average fixed asset to net worth ratio of 0.11 per cent.

The Alpa has the highest standard deviation of fixed asset to net worth ratio of 5.35 per cent. The Aventis Pharma Ltd has the lowest standard deviation of fixed asset to net worth ratio of 0.05 per cent it is found to be stable in the fixed asset to net worth ratio.

The Cipla has the highest co-efficient variance of fixed asset to net worth ratio of 172.51 per cent. The Aventis Pharma Ltd has the lowest co-efficient variance of fixed asset to net worth ratio of 21.59 per cent and it is found that there is a consistency in the fixed asset to net worth ratio.

Table 4 shows the current asset to proprietors fund ratios of Pharmaceutical Companies in India during the period from 2004-2005 to 2013-2014.

Table 4

Current Asset to Proprietors Fund Ratio

(Rs. in crores)

Company Name	Mean	S.D	C.V
Ranbaxy	1.25	0.47	37.87
Sun	0.77	0.76	98.48
Dr.Reddy	0.67	0.14	20.78
Cadila	0.59	0.2	33.7
Cipla	0.72	0.32	44.59
Aventis	0.85	0.23	26.94
Alpa	1.13	1.15	101.32
Aurobindo	1.41	0.3	21.15
Ipca	0.96	0.17	17.45
Glaxo Smith Kline	1.31	0.56	42.77

Source: Compiled and Calculated from the data published in CMIE

Table 4 reveals the the current asset to proprietors fund ratio of selected Pharmaceutical Companies in India from 2004-2005 to 2013-2014. The current asset to proprietors fund shows the fluctuating trend during the study period. The current asset to proprietors fund ratio of

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establishes the relationship between current assets and shareholders funds. The purpose of this ratio of to calculate the percentage of shareholders funds invested in current assets. The Glaxo Smith Kline has the highest average current asset to proprietors fund ratio of 1.31 per cent and the Cadila has the lowest average current asset to proprietors fund ratio of 0.59 per cent.

The Alpa has the highest standard deviation of current asset to proprietors fund ratio of 1.15 per cent. The Dr.Reddy's Laboratories Ltd has the Lowest standard deviation of fixed current asset to proprietors fund ratio of 0.14 per cent it is found to be stable in the current asset to proprietors fund ratio.

The Alpa has the highest co-efficient variance of current asset to proprietors fund ratio of 101.32 per cent. The Ipca Laboratories Ltd has the lowest co-efficient variance of current asset to proprietors fund ratio of 17.45 per cent and it is found that there is a consistency in the current asset to proprietors fund ratio.

Table 5 shows the current liabilities to proprietors fund ratios of Pharmaceutical Companies in India during the period from 2004-2005 to 2013-2014.

Table 5

Current Liabilities to Proprietors Fund Ratio

(Rs. in crores)

Company Name	Mean	S.D	C.V
Ranbaxy	0.99	0.79	80.29
Sun	0.16	0.12	77.23
Dr.Reddy	0.33	0.15	45.25
Cadila	0.46	0.08	16.66
Cipla	0.2	0.09	43.42
Aventis	0.23	0.04	17.27
Alpa	0.57	0.58	101.2
Aurobindo	0.43	0.06	13.67
Ipca	0.36	0.05	12.46
Glaxo Smith Kline	0.21	0.04	19.86

Source: Compiled and Calculated from the data published in CMIE

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Table 5 reveals the earnings per share ratio of selected Pharmaceutical Companies in India from 2004-2005 to 2013-2014. The earnings per share ratio show a fluctuating trend during the study period. This fluctuation indicates whether or not the earning power of the company has decreased. The Ranbaxy Laboratories Ltd has the highest average earnings per share is 0.99 per cent and Sun Pharma Ltd has the lowest average earnings per share is 0.16 per cent.

The Ranbaxy Laboratories Ltd has the highest standard deviation of earnings per share ratio of 0.79 per cent. The Aventis Pharma ,Glaxo Smith Kline has the lowest standard deviation of earnings per share ratio of 0.04 per cent and it is found to be stable in earnings per share ratio.

The Alpa has the highest co-efficient of earnings per share ratio of 101.2 per cent. The Ipca Laboratories Ltd has the lowest co-efficient variance of earnings per share ratio of 12.46 per cent and it is found that there is a consistency in earnings per share ratio than the other Pharmaceutical Companies.

MULTIPLE REGRESSION ANALYSIS

Table.6 shows the Multiple Regression Analysis of Pharmaceutical Companies in India during the period of 2004-2005 to 2013-2014.

Table.6

Multiple Regression Analysis of Pharmaceutical Companies in India

Company Name	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Ranbaxy	1	.746(a)	.556	-.774	10.71955
Sun	1	.996(a)	.991	.965	1.41285
Dr.Reddy	1	.967(a)	.936	.742	8.53176
Cadila	1	.993(a)	.986	.945	1.25410
Cipla	1	.967(a)	.934	.737	1.46309
Aventis	1	.933(a)	.871	.485	4.63285
Alpa	1	.980(a)	.961	.843	1.69670
Aurobindo	1	.960(a)	.922	.690	1.17284
Ipca	1	.995(a)	.990	.959	.44787
Glaxo Smith Kline	1	.927(a)	.859	.438	2.19088

a Predictors: (Constant), FANW, ICR, PR

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Table.6 Ranbaxy Laboratories Ltd statistical significance of the model. The R^2 value at .556 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 55.6 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

Sun PharmaLtdstatistical significance of the model. The R^2 value at .991 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 99.1 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

Dr.Reddy's Laboratories Ltdstatistical significance of the model. The R^2 value at .936 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 93.6 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Cadila Health Care Ltd statistical significance of the model. The R^2 value at .986 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 98.6 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 .934 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 93.4 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 .871 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 87.1 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

The Alpa statistical significance of the model. The R^2 value at .961 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 96.1 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 .922 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 92.2 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

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The Ipca Laboratories Ltd statistical significance of the model. The R^2 value at .990 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 99.0 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 .859 states that the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio, have 85.9 per cent influence on the dependent variable of net profit ratio which is significant at 5 per cent level.

ONE-WAY ANOVA

Table 7 exhibits the One Way ANOVA of the Ranbaxy Laboratories Ltd during the study period from 2004-2005 to 2013-2014.

Table 7

One Way ANOVA of the Ranbaxy Laboratories Ltd

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4549.402	4	1137.350	12.418	.000
Within Groups	1831.851	20	91.593		
Total	6381.253	24			

Table 7 shows the one way ANOVA of the Ranbaxy Laboratories Ltd calculated F value of the variables such as 12.418 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 8 exhibits the one way ANOVA of the Sun Pharma Ltd during the study period from 2004-2005 to 2013-2014.

Table 8

One Way ANOVA of the Sun Pharma Ltd

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	212.633	4	53.158	28.998	.000
Within Groups	36.664	20	1.833		
Total	249.297	24			

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Table 8 shows the one way ANOVA of the Sun Pharma Ltd calculated F value of the variables such as 28.998 which are more than the table value of 2.0867 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 9 exhibits the one way ANOVA of the Dr.Reddy's Laboratories Ltd during the study period from 2004-2005 to 2013-2014.

Table 9

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

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.370	4	.592	5.507	.004
Within Groups	2.152	20	.108		
Total	4.521	24			

Table 9 shows the one way ANOVA of the Dr.Reddy's Laboratories Ltdcalculated F value of the variables such as 5.507 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 10 exhibits the one way ANOVA of the Cadila Health Care Ltd during the study period from 2004-2005 to 2013-2014.

Table 10

One Way ANOVA of the Cadila Health Care Ltd

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1389262.345	4	347315.586	3.182	.108
Within Groups	3183147.483	20	159157.374		
Total	4572409.828	24			

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Table 10 shows the one way ANOVA of the Cadila Health Care Ltdcalculated F value of the variables such as 3.182 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 11 exhibits the one way ANOVA of the Cipla during the study period from 2004-2005 to 2013-2014.

Table 11

One Way ANOVA of the Cipla

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.685	4	4.671	4.394	.010
Within Groups	21.260	20	1.063		
Total	6561.982	24			

Table 11 shows the one way ANOVA of the Cipla calculated F value of the variables such as 4.394 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 12 exhibits the one way ANOVA of the Aventis Pharma Ltd during the study period from 2004-2005 to 2013-2014.

Table 12

One Way ANOVA of the Aventis Pharma Ltd

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	40.386	4	10.096	5.700	.003
Within Groups	35.425	20	1.771		
Total	75.811	24			

Table 12 shows the one way ANOVA of the Aventis Pharma Ltd calculated F value of the variables such as 5.700 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

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Table 13 exhibits the one way ANOVA of the Alpa during the study period from 2004-2005 to 2013-2014.

Table 13

One Way ANOVA of the Alpa

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5004077.847	4	1251019.462	13.060	.000
Within Groups	1915843.458	20	95792.173		
Total	6919921.305	24			

Table 13 shows the one way ANOVA of the Alpacalculated F value of the variables such as 13.060 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 14 exhibits the one way ANOVA of the Aurobindo Pharma Ltd during the study period from 2004-2005 to 2013-2014.

Table 14

One Way ANOVA of the Aurobindo Pharma Ltd

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2095611.496	4	523902.874	6.378	.002
Within Groups	1642844.845	20	82142.242		
Total	3738456.341	24			

Table 14 shows the one way ANOVA of the Aurobindo Pharma Ltdcalculated F value of the variables such as 6.378 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 15 exhibits the one way ANOVA of the Ipca Laboratories Ltd during the study period from 2004-2005 to 2013-2014.

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Table 15

One Way ANOVA of the Ipca Laboratories Ltd

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5548.274	4	1387.069	27.366	.000
Within Groups	1013.708	20	50.685		
Total	6561.982	24			

Table 15 shows the one way ANOVA of the Ipca Laboratories Ltd calculated F value of the variables such as 27.336 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

Table 16 exhibits the one way ANOVA of the Glaxo Smith Kline during the study period from 2004-2005 to 2013-2014.

Table 16

One Way ANOVA of the Glaxo Smith Kline

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	67.749	4	16.937	33.569	.000
Within Groups	10.091	20	.505		
Total	77.840	24			

Table 16 shows the one way ANOVA of the Glaxo Smith Kline calculated F value of the variables such as 33.569 which are more than the table value of 2.866 at 5 per cent significant level. So, there is a significant relationship between solvency ratios.

SUMMARY OF FINDINGS

Interest Coverage Ratio

The Glaxo Smith Kline has the highest average interest coverage ratio of 1273.79 per cent and the Ranbaxy Laboratories Ltd has the lowest average interest coverage ratio of -0.71 per cent.

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The Sun Pharma Ltd has the highest standard deviation of interest coverage ratio of 808.02 per cent. The Alpa has the lowest standard deviation of interest coverage ratio of 2.68 per cent it is found to be stable in the interest coverage ratio.

The Aurobindo Pharma Ltd has the highest co-efficient variance of interest coverage ratio of 107.74 per cent. The Ranbaxy Laboratories Ltd has the lowest co-efficient variance of interest coverage ratio of -474.78 per cent and it is found that there is a consistency in the interest coverage ratio.

Proprietary Ratio

The Glaxo Smith Kline has the highest average proprietary ratio of 1.01 per cent and the Ranbaxy Laboratories Ltd has the lowest average proprietary ratio of 0.42 per cent.

The Sun Pharma has the highest standard deviation of proprietary ratio of 0.33 per cent. The Cadila, Aventis Pharma, Aurobindo Pharma Ltd has the lowest standard deviation of proprietary ratio of 0.06 per cent it is found to be stable in the proprietary ratio.

The Sun Pharma has the highest co-efficient variance of proprietary ratio of 39.52 per cent. The Aventis Pharma Ltd has the lowest co-efficient variance of proprietary ratio of 6.46 per cent and it is found that there is a consistency in the proprietary ratio.

Fixed Asset to Net worth Ratio

The Alpa has the highest average fixed asset to net worth ratio of 3.99 per cent and the Glaxo Smith Kline has the lowest average fixed asset to net worth ratio of 0.11 per cent.

The Alpa has the highest standard deviation of fixed asset to net worth ratio of 5.35 per cent. The Aventis Pharma has the lowest standard deviation of fixed asset to net worth ratio of 0.05 per cent it is found to be stable in the fixed asset to net worth ratio.

The Cipla has the highest co-efficient variance of fixed asset to net worth ratio of 172.51 per cent. The Aventis Pharma Ltd has the lowest co-efficient variance of fixed asset to net worth ratio of 21.59 per cent and it is found that there is a consistency in the fixed asset to net worth ratio.

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Current Asset to Proprietors Fund Ratio

The Aurobindo Pharma has the highest average current asset to proprietors fund ratio of 1.41 per cent and the Cadila Health Care has the lowest average current asset to proprietors fund ratio of 0.59 per cent.

The Alpa has the highest standard deviation of current asset to proprietors fund ratio of 1.15 per cent. The Dr.Reddy's Laboratories Ltd has the Lowest standard deviation of fixed current asset to proprietors fund ratio of 0.14 per cent it is found to be stable in the current asset to proprietors fund ratio.

The Alpa has the highest co-efficient variance of current asset to proprietors fund ratio of 101.32 per cent. The Ipca Laboratories has the lowest co-efficient variance of current asset to proprietors fund ratio of 17.45 per cent and it is found that there is a consistency in the current asset to proprietors fund ratio.

Current Liabilities to Proprietors Fund Ratio

The Ranbaxy Laboratories Ltd has the highest average current liabilities to proprietors fund ratio of 0.99 per cent and the Sun Pharma Ltd has lowest average current liabilities to proprietors fund ratio of 0.16 per cent.

The Ranbaxy Laboratories Ltd has the highest standard deviation of current liabilities to proprietors fund ratio of 0.79 per cent. The Aventis Pharma has the Lowest standard deviation of current liabilities to proprietors fund ratio of 0.04 per cent it is found to be stable in the current liabilities to proprietors fund ratio.

The Alpa has the highest co-efficient variance of current liabilities to proprietors fund ratio of 101.20 per cent. The Ipca Laboratories has the lowest co-efficient variance of current liabilities to proprietors fund ratio of 12.46 per cent and it is found that there is a consistency in the current liabilities to proprietors fund ratio.

MULTIPLE REGRESSIONS FOR SOLVENCY ANALYSIS

In Ranbaxy Laboratories Ltd, the multiple regression between net profit ratio and the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .746(R) with R Square .556. It means that all the independent variables have contributed 55.6 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

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In Sun Pharma Ltd, the multiple regression between net profit ratio and the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .996(R) with R Square .991. It means that all the independent variables have contributed 99.1 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 interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .967(R) with R Square .936. It means that all the independent variables have contributed 93.6 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 interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .993(R) with R Square .986. It means that all the independent variables have contributed 98.6 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 interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio 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 Aventis Pharma, the multiple regression between net profit ratio and the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .933(R) with R Square .871. It means that all the independent variables have contributed 87.1 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

In Alpa, the multiple regression between net profit ratio and the three independent variables that is interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .980(R) with R Square .961. It means that all the independent variables have contributed 96.1 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 interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is

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found to be .960(R) with R Square .922. It means that all the independent variables have contributed 92.2 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 interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .995(R) with R Square .990. It means that all the independent variables have contributed 99.0 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 interest coverage ratio, proprietary ratio, and fixed asset to net worth ratio is found to be .927(R) with R Square .859. It means that all the independent variables have contributed 85.9 per cent on dependent variable of net profit ratio which is significant at 5 percent level.

ONE WAY ANOVA FOR SOLVENCY

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 solvency ratios.

SUGGESTIONS

- ❖ Pharmaceutical companies have to increase their short-term solvency positions.
- ❖ The companies should utilize an innovative technology and it may increase the product range. This will increase the export sales. The result will be increasing the foreign exchange earnings.
- ❖ The companies may concentrate on their cost of production, investment in fixed assets and their sales turnover to improve their profitability.

CONCLUSION

The financial health plays a significant role in the successful management of a company. the analysis practically reveals that interest coverage ratio,proprietary ratio, fixed asset to net worth ratio, current assets to proprietors fund,and current liabilities to proprietors fund have significant effect on the net profit ratio of the selected pharmaceutical companies during the

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study period. However, solvency 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 solvency 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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