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AN EMPIRICAL STUDY OF CAPITAL STRUCTURE DETERMINANTS OF ELECTED PHARMACEUTICALS COMPANIES IN INDIA

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Abstract

Choice of capital structure is very important from the starting stage. Various determinants are affecting the Capital structure. Effort is been made in this research paper of knowing the position of capital structure, solvency, profitability & liquidity of the elected pharmaceuticals companies. Study of research is Empirical in nature. Analysis is been done by using various ratio, for capital structure & solvency aspects debt-equity ratio & Interest coverage ratio respectively. For profitability aspects gross profit margin, operating profit margin, Net Profit margin, Return on equity and Return on assets. For liquidity, Current ratio is calculated. Ten pharmaceutical companies have been elected as sample & collected data from the financial report of the elected companies. Time span of five years from 2013-14 to 2017-18 was consider. The result discloses that Davis and Lupin companies are performing well in solvency, profitability and liquidity aspects. Sun Pharma and Piramal's performance is unsatisfactory in regards to Solvency, profitability and liquidity aspects.

Keywords: *Capital Structure, Determinants, Solvency, Profitability, Liquidity, Debt-Equity Ratio.*

Introduction

Capital is key factor for any kind of business, whether big or small. Company's capital structure choice of requirement of capital is generally made of size and nature of the business. Company has to maintain sufficient level of capital to earn high profit, so that to provide high dividend to shareholder and there by value of shareholder increase. If the company fails to maintain proper level of capital then company has to face low profitability, market price decline, un-utilized or mis-utilized of resource etc. (Paramasivas & Subramasivas, 2009)

Total capital required for financing companies fixed assets is known as capitalization. This capitalization collected through long term sources like common stock equity share, preferred stock and debenture. The financial mixer of this long term sources which makes capitalization is known as Debt-equity structure. Debt-equity structure is also known as capital structure. Generally capital structure is made of two types, one is creditor-ship stock and other is common stock. In common stock includes equity share, preferred stock, No par stock and deferred stock (Founder Share). Every long term source has its own merit and

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demerit. In common equity share, dividend is paid on the basis of earning of company and dividend is higher than other sources. Common stock share has no financial binding on company. While in debenture stock, preferred stock and bonds the compensation in form of Interest/Dividend is paid on fixed percentage, which is fixed in advance and lower then common stock dividend. This fixed bearing long term source has financial obligation on company. (Paramasivas & Subramasivas, 2009)

People use this two term interchangeable, Financial Structure and Capital Structure as they consider them same. But in reality both have vast difference between these two terms. In Financial Structure long term sources as well as short term sources are taken into consideration. While in Capital Structure only long term sources are taken into consideration. In short, Capital Structure comprise of Common Stock Equity Share, Preferred Stock, Debenture, Bond etc. Company has to take suitable comprise of common stock equity share and creditor-ship stock after considering various determinants of capital structure like tangibility, profitability, growth, liquidity, firm size etc in respect of minimize cost of the firm and maximize earning for shareholders and their by maximizing market share for company. The mixture of long term sources which increases the earning for shareholders and decreases the overall cost of financing for firm is called optimum capital structure. (Paramasivas & Subramasivas, 2009)

Indian pharmaceutical industry is supplying 50 % of global demand of various vaccines, 40 % of generic demand to US and 25 % of other medicine to UK to satisfy global demand. Rank second to world share in the record of pharmaceuticals and biotech workforce in various countries. On the whole value of pharmaceutical sector in 2017 is US$ 33 billion. Mass of Indian drug is supplied to US, and also in 200 different counties. Global export of generic drug is 20 % (in quantity). Government is also planning for project capital investment of US$ 640 million to make stronger pharmaceutical infrastructure and to enhance discovery. . Government desires to make India a main center for end to end drug discovery for the 'pharma vision 2020'and to keep in one of the top 10 list in medicine spending. For the growth of pharma industries in India, Making Cost effective by increases expenditure in R & D activities, Increase Economic growth by health insurance, Increase growth of private investment in R & D and Acquisition. (IBEF)

Review of Literature

Anitha Mary C and Harini M (2018) research study on analyzing the capital structure of Tata steel company. Objective of Study is to understand the capital structure, examine and analyze profitability ratio and finding out various factor determining financial performance of company. For analysis, study period was limited to five year from 2012 to 2017 because of the objective of study to understand on current problem. Secondary data were collected and used from published and unpublished financial statement of Tata steel, website like moneycontrol.com and other data from books, journal, annual report and various newspapers were used. Analysis of the study of financial statement is done through various capital ratio and profitability ratio. Interest coverage ratio, total debt equity ratio, financial coverage ratio, capital gearing ratio and total assets turnover ratio is been used for analysis capital ratio. In profitability ratio include operating profit margin, gross profit margin, net profit margin, return on capital employed, return on net worth, return on assets and return on long term funds. Finding and Conclusion of study was that Tata steel company is that result of the entire ratio is positive and sufficient. (Anaitha & Harini, 2018)

Shalini R & Mohua Biswas (2017) researcher study is descriptive and analytical in nature. Research is made on capital structure of elected Indian oil and gas companies. For analysis, researcher elected sample of 5 Indian oil and gas companies on the basis of market capitalization and which were listed in BSE. Research Span is of 5 years i.e. 2006-07 to 2015-16. Determinant used for analysis, one dependent determinant (financial leverage) and independent determinant (firm size, growth rate, tangibility, liquidity, profitability, non-debt tax shield. Statistical tools used in study were mean, standard deviation, Karl Pearson's Correlation analysis and multiple regression analysis to find out impact of capital structure determinant. Conclusion of study says that growth and size determinant has very much impact on financial leverage then other determinants. (R & Biswas, 2017)

Shalini R & Dr. Mahua Biswas (2017) analysis is descriptive in nature and focus on empirical view of study of factors determining the capital Structure decisions of elected ten pharmaceutical companies in India (As per market capitalization). Secondary Data was collected from annual reports of elected companies. Time span of study was of five year from 2011-2012 to 2015-2016. Various factors were compared with debt equity ratio. Factor like profitability, liquidity, size, tangibility and business risk is compared with debt equity to reach at some conclusion. Study concludes that there is not much statistically significant on profitability, liquidity and business risk factors, but there is vast statistically significance on size and tangibility. (R & Biswas, An Empirical Study on the Capital Structure Decisions of Selected Pharmacueticals Companies in India, 2017)

Harbinger Singh and Parveen Kumar researchers (2014) research is done to assess the capital structure position of top three public sector oil refinery distributor in India. Top oil refinery was elected as samples were Hindustan Petroleum Corporation Ltd; Indian Oil Corporation Ltd & Bharat Petroleum Corporation Ltd. Analytical research is done by collecting secondary data from the Annual reports and other published data of oil refinery distributor. Time range of five year from 1999 to 2008 was taken into consideration for research. Mean growth rate and co- efficient of variations were used for analyses. Logical and clear understanding of research different ratio as Debt to Equity Ratio, Shareholder funds to Total Assets Ratio, Liquidity Ratio, Fixed Assets Turnover Ratio, Interest coverage ratio, capital gearing ratio and financial leverage. Outcome of the research study is that all the three companies is applying financial leverage in capital structure and achieved the objective of improved dividend for equity investor. Result also revealed that BPCL is deal with debt to equity ratio so properly and also deal with reserve capital greater as contrast to HPCL & IOCL. Researcher also Suggest that, company can increase the debt portion in debt-equity ratio and their by increase the earning to optimum level for shareholder. (Singh & kumar, 2014)

N. Suresh Babu & G.V. Chalam (2014) research is to investigate empirically impact of profitability, growth, tangibility, risk, non-debt tax, size and liquidity on leverage on Indian textile industry. Objective of research is to find out the determinants of financial leverage and also to study their relationship with the determinants. Data for research collected from corporate data base CMIE and refer various relevant magazines, research papers, journals and news papers for research. Period of study is taken 14 years from 1997-98 to 2010-2011. Used financial leverage compare with profitability, liquidity, size, growth, tangibility and business risk to extract results. Statistical tools like correlation analysis, multiple regressions, T test, F test and ANOVA used for getting to a conclusion. Calculation of these statistical tools is done with the help of SPSS software. At the end researcher conclude that there is negative or statistically insignificance between leverage and size, growth, risk & non debt determinant. Also conclude that there is positive relationship or statistically significance between leverage and profitability & tangibility determinant. (N & Chalam, 2014)

Dr. Pavan Kumar (2012) researcher makes attempt of analyzing of capital structure of elected 5 automobile companies in India. The objective of the study was to know position of capital structure of companies, to find out long term profitability of elected companies, to evaluate the change in proportion of debt equity portion and give suggestion on framing effective capital structure. Time span for research was of 5 year from 2008 to 2012. Data collected from annual reports of elected companies, analyzing statistical tools used was leverage, cost of capital and various accounting ratios. In leverage, operating leverage, financial leverage and combine leverage was considered. In cost of capital, includes cost of equity and cost of debt. And accounting ratio includes debt-equity ratio, Long term debt equity ratio, Interest coverage ratio, fixed assets turnover ratio, return on net worth, net profit margin, return on long term funds, return on capital employed, capital gearing ratio, proprietary ratio & earning yield ratio. Conclusion was on the basis of comparing every company aspects with each other's was taken into consideration. (Kumar, 2012)

Objective of the Study

- To study the position of Capital Structure, Solvency, Profitability & Liquidity aspects of elected pharmaceuticals companies in India.

Research Methodology

This Research Study is empirical in nature. Research is to study the position of Capital Structure, solvency, profitability and liquidity aspects of elected pharmaceuticals in India. Various Accounting ratios like Debt-Equity Ratio, Interest Coverage Ratio, Gross Profit Margin, Operating Profit Margin, Net profit Margin, Return on Equity, Return on Assets and Current Ratio are used for Research analysis. Data collected from Annual reports of elected companies and some websites were used for analysis of various accounting ratios of elected companies. Time span for Study is of 5 years from 2013-14 to 2017-18. Population of the research is register pharmaceutical companies of India in NSE/BSE. For analysis and interpretation, sample of ten pharmaceutical companies has been taken on the bases of market capitalization and sample elected on basis of data availability by the means of convenient sampling technique. Sun Pharmaceutical Industries Ltd, Dr. Reddy's Laboratories Ltd, Cipla Ltd, Divis Laboratories Ltd, Aurobindo Pharma Ltd, Piramal Enterprises Ltd, Biocon Ltd, Lupin Ltd, Candila healthcare Ltd and Torrent pharmaceuticals Ltd were the elected sample companies.

Results and Discussion

To match with the objective following ratio analysis is been used after collecting data by different website and utilize statistical tool like mean & standard deviation extracted from MS excel.

Table 1: Debt- Equity Ratio

(Figures in times)

Companies /Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	0.33	0.24	0.26	0.23	0.34	0.28	0.05148
Cipla	0.09	0.12	0.09	0.03	0.01	0.068	0.04604
Dr.Reddy	0.29	0.29	0.27	0.2	0.22	0.254	0.04159
Divis	0.01	0.01	0.01	0.01	0.01	0.01	0
Aurobindo	0.7	0.54	0.55	0.34	0.37	0.5	0.14714
Piramal	0.64	0.33	1.02	0.54	0.56	0.618	0.25223
Biocon	0.04	0.03	0.06	0.02	0.01	0.032	0.01924
Lupin	0.02	0	0.03	0.04	0	0.018	0.01789
Candela	0.39	0.28	0.16	0.42	0.34	0.318	0.10305
Torrent	0.42	0.84	0.48	0.5	1.13	0.674	0.30328

Source: Compiled from annual reports of companies.

Table 1 shows debt-equity ratio of elected companies. As per above table, we can say that Company means value of Torrent, piramal, Aurobindo, Candela and Dr. Reddy are using more debt than other elected companies. Torrent is using highest debt in structure. There is unstable flow of every company except Torrent and Davis. Torrent shows an increasing trend. Davis Company is using only equity in structure. Torrent, Piramal, Aurobindo and Candela has high standard deviation, which state that company has face higher change in proportion than other companies. Highest variation is of Torrent Company.

Table 2: Interest Coverage Ratio

(Figures in times)

Companies /Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	5.05	-1.83	-0.88	0.92	2.11	1.074	2.69986
Cipla	15.22	12.32	12.86	31.28	168.14	47.964	67.6306
Dr.Reddy	32.35	33.29	31.34	28	12.1	27.416	8.79157
Divis	491.77	573.37	592.44	617.99	917.81	638.68	163.04
Aurobindo	6.26	15.68	10.37	49.24	45.3	25.37	20.3167
Piramal	0.52	2.13	2.29	1.78	1.76	1.696	0.69558
Biocon	455	563.63	237.05	142.11	306.8	340.92	168.888
Lupin	150.55	656.55	160.44	143.05	54.97	233.11	240.439
Candela	23.25	35.22	95.48	58.86	24.43	47.448	30.4229
Torrent	17.4	5.61	15.13	5.72	2.91	9.354	6.4585

Source: Compiled from annual reports of companies.

Table 2 is about Interest coverage ratio of elected companies. Interest coverage ratio shows that companies ability to cover up its fixed financial interest in compare to EBIT. If the ratio shows above the ideal ratio 1.5 to 2 then it has better interest coverage ratio.

All the companies mean is good except sun pharma & piramal. Divis, Biocon, Lupin, cipla & candila having good earning to cover fixed interest as per the mean data. Highest safely level is of Divis as per mean. As Standard deviation of companies like lupin, biocon, divis, cipla, candela is more than other companies, which means there is high variation or in stability in ratio.

Table 3: Gross Profit Margin

(Figures in %)

Companies /Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	-3	-15.2	-11.8	-4.01	-3.9	-7.582	5.54834
Cipla	17.75	15.08	13.29	10.18	14.62	14.184	2.76317
Dr.Reddy	24.47	18.98	17.19	10.39	5.93	15.392	7.29839
Divis	36.86	33.27	34.38	32.66	29.04	33.242	2.84523
Aurobindo	24.37	24.77	23.87	21.73	22.54	23.456	1.2798
Piramal	-0.66	14.81	39.47	46.23	33.54	26.678	19.2433
Biocon	15.84	13.46	12.04	17.04	7.52	13.18	3.72118
Lupin	30.17	31.13	32.81	32.63	16.82	28.712	6.73677
Candela	16.81	25.02	33.49	2.17	23.29	20.156	11.683
Torrent	29.16	19.08	44.63	18.67	12.32	24.772	12.6321

Source: Compiled from annual reports of companies.

In table 3 shows gross profit margin of elected companies, all companies having sufficient gross earning except sun, biocon, cipla and Dr.Reddy. Highest profit Margin is of Divis and Lowest is of Sun pharma. As on the other side Standard deviation of Piramal has highest variation in earning, while Aurobindo, Divis and Cipla has lower standard deviation, which states that higher stability in gross earning.

Table 4: Operating Profit Margin

(Figures in %)

Companies/Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	0.6	-6.96	-5.71	1.48	1.55	-1.808	4.17296
Cipla	21.2	19.35	16.94	14.82	19.27	18.316	2.47043
Dr.Reddy	28.38	23.88	23.55	17.95	14.2	21.592	5.54643
Divis	40.52	37.67	37.56	35.73	32.77	36.85	2.85246
Aurobindo	26.99	27.79	26.74	24.71	25.99	26.444	1.163
Piramal	3.47	18.51	41.73	48.73	36.93	29.874	18.5217
Biocon	21.48	19.17	18.11	22.86	13.15	18.954	3.74443
Lupin	32.57	34.58	35.53	35.53	20.69	31.78	6.31619
Candela	19.96	29.03	36.64	9.93	28.33	24.778	10.1867
Torrent	31.52	24.26	48.55	24.54	21.35	30.044	10.9998

Source: Compiled from annual reports of companies.

In Table 4 show operating profit margin of elected companies. All companies average earning is almost good except sun pharma. High earning is of Divis, Lupin, torrent, piramal, aurobindo & candela. Highest is of Divis and lowest or negative earning of sun pharma. Standard deviation of Piramal interprets that company has high variation and aurobindo has lowest standard deviation state that company has good stability.

Table 5: Net Profit Margin

(Figures in %)

Companies/Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	-99.99	-18.38	-14.09	-0.29	-6.24	-27.798	40.9565
Cipla	14.8	11.65	12.06	9.05	12.89	12.09	2.08688
Dr.Reddy	19.86	16.77	13.26	14.24	6.05	14.036	5.14329
Divis	31.49	27.46	29.76	26.17	22.78	27.532	3.35676
Aurobindo	16.48	18.73	17.74	17.76	17.59	17.66	0.79978
Piramal	-20.07	15.52	30.17	20.62	15.76	12.4	19.0962
Biocon	14.97	16.11	16.01	20.06	9.85	15.4	3.65989
Lupin	25.99	24.58	25.23	24.87	13.33	22.8	5.32013
Candela	22.35	24.05	28.97	20.48	18.77	22.924	3.91728
Torrent	22.65	17.93	32.04	18.59	11.34	20.51	7.61499

Source: Compiled from annual reports of companies.

In Table 5, stated Net profit margin of elected companies. Average net earnings of sun pharma are negative and lowest in list and also having highest variation in earning. All companies have sufficient earning but Divis and candela having highest average earning. Lowest variation/ greater stability in the earning of Aurobindo.

Table 6: Return on Equity

(Figures in %)

Companies/Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	-38.13	-6.48	-4.99	-0.1	-2.5	-10.44	15.6691
Cipla	13.76	10.65	12.2	7.61	10.4	10.924	2.29147
Dr.Reddy	20.71	15.79	11.67	11.93	4.8	12.98	5.86046
Divis	26.09	23.78	25.46	19.47	14.59	21.878	4.82449
Aurobindo	29.21	28.29	23.69	20.23	18.15	23.914	4.84878
Piramal	-4.05	3.25	8.71	5.38	2.42	3.142	4.69758
Biocon	13.65	13.98	6.14	7.94	3.53	9.048	4.62697
Lupin	33.3	26.55	23.76	21.25	8.51	22.674	9.10716
Candela	24.89	28.08	32.46	10	14.08	21.902	9.50537
Torrent	33.29	23.03	47.01	19.17	10.57	26.614	14.0199

Source: Compiled from annual reports of companies.

Above Table 6 gives information of return on Net worth of elected companies. Average return of aurobindo, Torrent, Lupin, Divis & candela is higher. Standard deviation of all the companies is unstable except Cipla. Highest and lowest variation is of Sun Pharma & Cipla Respectively. Sun pharma has high instability and Cipla having greater stability in return on net worth.

Table 7: Return on Assets

(Figures in %)

Companies/Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	-20.44	-3.93	-3.13	-0.06	-1.45	-5.802	8.31904
Cipla	10.74	7.77	9.59	6.24	8.59	8.586	1.71882
Dr.Reddy	13.32	10.2	7.71	8.41	3.31	8.59	3.66231
Divis	20.92	18.92	22.03	16.93	12.77	18.314	3.66123
Aurobindo	13.66	14.82	12.94	13.1	11.47	13.198	1.21516
Piramal	-2.18	2.26	3.97	3.04	1.41	1.7	2.36646
Biocon	10.25	10.83	5.19	6.95	3.08	7.26	3.29918
Lupin	26.41	21.77	19.88	17.6	7.19	18.57	7.1391
Candela	14.47	17.32	22.83	5.99	8.96	13.914	6.68463
Torrent	17.59	9.57	23.91	10.61	4.07	13.15	7.70074

Source: Compiled from annual reports of companies.

Table 7 is showing the returns on assets ratio. Average return on assets of Lupin, Davis, aurobindo, candela and Torrent shows higher percentage. While average return of sun, piramal, Biocon, Dr.reddy and cipla having low percentage. Highest average return is of Davis and lowest average return is of sun pharma and piramal. Standard Deviation of all the companies is good except Sun, Torrent, lupin and candela, which shows the other companies have good control and stability in return then sun, Torrent, Lupin and Candela.

Table 8: Liquidity Ratio

(Figures in times)

Companies/Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mean	St. Dev.
Sun	0.79	0.53	0.68	0.78	0.81	0.718	0.11649
Cipla	1.92	1.66	2.03	2.33	2.57	2.102	0.3552
Dr.Reddy	1.96	1.81	1.74	1.83	1.68	1.804	0.1055
Divis	2.5	2.36	3.51	3.07	3.07	2.902	0.46944
Aurobindo	1.37	1.35	1.33	1	0.98	1.206	0.19781
Piramal	0.61	1.38	0.94	0.77	0.93	0.926	0.28745
Biocon	1.95	2.98	2.26	3.02	2.5	2.542	0.46154
Lupin	2.81	2.54	2.98	2.36	3.04	2.746	0.29014
Candela	1.35	1.19	1.47	1.03	1.61	1.33	0.22804
Torrent	2.02	1.57	1.51	2.25	0.98	1.666	0.49257

Source: Compiled from annual reports of companies.

Table 8 shows liquidity ratio of elected companies. Ideal liquidity ratio is 2:1, where current assets are double then current liability. Here we see from the above table that average liquidity ratio of Divis, Lupin, Biocon & Cipla companies have greater which interprets that company has ability to pay all its current liability. We can also interpret that Companies manage its cash flow well. Sun and Piramal has lowest ratio, which means that they may faces the situation of scarcity of cash at the time of paying its short term obligation.

Conclusion & Suggestions

- Divis & Lupin Company is performing well in Solvency, Profitability & Liquidity aspects.
- Divis & Lupin Company can increase debt proportion in structure to further increase the earning for the company; thereby they increase shareholder value by paying higher dividend to shareholder.
- Sun pharma performance is very unsatisfactorily in profitability as well as liquidity aspects; huge care should be taken by them on increasing sales or decreasing expenses so that profitability of company increases to the level to become stable in all aspects. Also takes huge care of cash management to solve the problem of liquidity, otherwise company will face wind-up circumstances.
- Piramal is also performing very unsatisfactorily in solvency, profitability & liquidity aspects. Piramal should reduce the proportion of debt capital, because company is not in position to cover its fixed charges. Also company profitability & liquidity is low, to cope up with profitability & liquidity aspect, company should manage their sales as well as their short term source.

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