



## **“A STUDY OF IMPACT OF LEVERAGE ON COST OF CAPITAL OF THE SELECTED PHARMACEUTICAL COMPANIES OF INDIA”**

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### **SUBJECT:**

### **ABSTRACT:**

Leverage is the very important component of financial decision making process. First researcher want to know the performance of pharmaceutical companies on the basis of leverage and cost of capital of the selected companies. So in this research paper researchers have taken two variables which is leverage and cost of capital of the pharmaceutical companies of India. In this study population is 20 top pharmaceutical companies but researcher have taken only 5 sample in this study which is first top five pharmaceutical companies on the basis of total assets and market capitalisation. The main variable in the study is operating leverage, financial leverage and cost of capital of the pharmaceutical companies of the India. So here purpose of the study is researcher want to know is there impact of leverage on cost of capital and performance of pharmaceutical companies of India, So that on the basis of objective researcher set 6 hypothesis. Researcher want to know the correlation between two variable so test apply CORRELATION. The second objective is to know the impact of leverage on cost of capital so researcher has used SIMPLE REGRESSION analysis. Researcher has find there is no significant relationship between leverage and cost of capital. Researcher has also find there no impact of leverage on cost of capital.

**Key words :- Leverage, Cost of capital, Correlation etc.**

**Introduction:** The term leverage indicates the ability of any companies and its shows the effect of the investment technique in the financial management in which we are study the influence on the earnings for equity shareholders. The leverage refers to the use of fixed cost in an attempt to increase of profitability. The leverage indicates to ability of the any firm. So here mainly three types of leverage are there its operating leverage , financial leverage, combined leverage and second components cost of capital so here cost of capital is the return expected by the capital providers to the business as a their contribution in the company. So cost of capital is used for making investment decision, designing capital structure, evaluating the performance, for the formulating dividend policy. According to financial management here for determinants of cost of capital first is the cost of equity, cost of debenture, cost of pref. share capital , long term loan, last is retained earnings.

### **REVIEW OF LITERATURE:-**

**Sanjay bhayani(2011).** An empirical analysis of financial leverage, earnings and dividend: A case study of maruti suzuki india ltd.” Researcher found that there is a correlation between degree of financial leverage[DFL] and EPS the difference significant where as result of correlation coefficient at 5% level of significance showed that the difference is significant DFL,PS,EPS,DPS.

**Mukesh c. Ajmere(2012).** “Leverage Analysis and Its impact on share price and earnings of the selected steel companies of India-An empirical study” found that The major objective of

this paper is to analyze and understand the impact of leverage on the Market price of shares of the firm. This paper investigates the relationship between the leverage (financial leverage, operating leverage, operating leverage and combined leverage) and the earning per share and market price of share. In this study, selected Steel companies are taken for analysis an hypothesis are examined with the help of one-way ANOVA and t-test.

**Sunita Sukhija(2011)**. "A study of leverage and profitability position of selected Textile companies"found that the leverage position in textile industries in india and examine the impact of leverage on EPS of the textile companies of india. So according to leverage overall leverage of lakshmi Mills ltd is higher profits indicates. Ensuring that any small change will lead to more reflection, the mean of EPS for Raymond Ltd. Is high as compared to the other five companies. Visaka Industries Ltd. shows an average performance during the study period.

**Amit Kumar Arora(2013)**. "Leverage' an analysis and its impact of Profitability: A case study of Marico Industry Ltd. The study reveals that overall leverage of Lakshmi Mills Co. Ltd is maximum indicating higher profits and also ensuring that any small change will lead to more reflection, the mean of EPS for Raymond Ltd. Is high as compared to the other five companies. Visaka Industries Ltd. shows an average performance during the study period.

**Jacob Sagi, U.C.Berkely and Mark Seasholes(2002)**. "The presence of financial leverage to the increased expected returns and future cash flows". They have exemplified that if a firm is operating in an industry that is subject to frequent changes in the business prospects, such a firm despite being able to use leverage successfully, will not pass on the increased profits to investors. The precautionary motive of holding cash takes over. The more volatile the nature of industry, the more reluctant the firm will be in sharing of the profits available for distribution. This however ensures that the future cash flows are taken care of. The paper also touches upon many other aspects such as real options and momentum and asset pricing which are not pertinent to this research work.

#### **OBJECTIVES OF THE STUDY:-**

The study should be undertaken to achieve the following objective:

- To examine the correlation of three leverage with cost of capital
- To analyze the impact of leverage on cost of capital of the selected pharmaceutical companies.

#### **RESEARCH DESIGN:**

##### **Title of the study:-**

"A study of impact of leverage on cost of capital of the selected pharmaceutical companies".

##### **Period of the study:-**

The study is made for a period of five years from 2013-14 to 2017-18

#### **HIPOTHISIS OF THE STUDY:-**

- **H<sub>0</sub>**:-There is **no** significant relationship between **Degree of operating leverage** and **cost of capital** of selected pharmaceutical companies during the study period.
- **H<sub>1</sub>**:-There is **a** significant relationship between **Degree of operating leverage** and **cost of capital** of selected pharmaceutical companies during the study period.
- ❖ **H<sub>0</sub>**:-There is **no** significant relationship between **Degree of financial leverage** and **cost of capital** of selected pharmaceutical companies during the study period.
- ❖ **H<sub>1</sub>**:-There is **a** significant relationship between **Degree of financial leverage** and **cost of capital** of selected pharmaceutical companies during the study period.

- **H<sub>0</sub>**:-There is **no** significant impact of the **Degree of Operating Leverage** on **cost of capital** of selected pharmaceutical companies during the study period.
- **H<sub>1</sub>**:-There is **a** significant impact of the **Degree of Operating Leverage** on **cost of capital** of selected pharmaceutical companies during the study period.
- ❖ **H<sub>0</sub>**:-There is **no** significant impact of the **Degree of financial Leverage** on **cost of capital** of selected pharmaceutical companies during the study period.
- ❖ **H<sub>1</sub>**:-There is **a** significant impact of the **Degree of financial Leverage** on **cost of capital** of selected pharmaceutical companies during the study period.

**DATA ANALYSIS :-**

**CORRELATION OF DOL WITH COST OF CAPITAL( COC )**

**CORRELATION RESULT**

**TABLE:1.1**

Industries	Correlation	Result
Sun pharma	-0.27	Negative
Cipla ltd	+0.87	Positive
Aurobindo	-0.033	Negative
Lupin ltd	-0.0073	Negative
Dr. Reddy labs.	-0.82	Negative

**ANALYSIS:-**

The above table shows the correlation. The sun pharma during the study period is -0.27 which is negative. It means relationship between DOL and Cost of Capital is average effective. Which suggest there is minimum effect of DOL on Cost of Capital if increase in DOL then cost of capital will fall down but not total opposition. It is less opposition. And in case of Cipla ltd is highly correlated leverage with cost of capital because correlation is +0.87 so it indicates high correlation between two variables ( leverage and cost of capital ) in given case. And in case of Aurobindo pharmaceutical companies is high negative correlated with the cost of capital and lupin is also same situation negative correlation between degree of operating leverage and cost of capital. In the period of the study Dr.Reddy is high negative correlated with the cost of capital during the study period.

**IMPACT OF DOL ON COST OF CAPITAL( COC )**

**Degree of operating leverage TABLE :1.2**

COMPANY	DEGREE OF OPERATING LEVERAGE AND COST OF CAPITAL				
	R <sup>2</sup>	Line equation	p.value	Segt 5%	H <sub>0</sub> accept/reject
Sun pharma	0.0728	Y=14.67-0.26x	0.6605	0.05	Accepted
Cipla	0.7563	Y=7.3422+2.77x	0.0553	0.05	Accepted
Aurobindo	0.0010	Y=14.66-0.13x	0.9578	0.05	Accepted
Lupin	0.0005	Y=11.25-0.146x	0.9907	0.05	Accepted
Dr.reddy	0.6683	Y=17.83-2.53x	0.0909	0.05	Accepted

**ANALYSIS:-**

The above table indicates the regression analysis of selected pharmaceutical companies. As per the above table we observe that p-value (significance F) in Anova table is more than 0.05 at the level of 5% significance. Therefore the H<sub>0</sub> (null hypothesis) is accepted. It concludes that there is no significant impact of leverage on cost of capital. In case of Cipla ltd, P-value is near by 0.05 so it significantly impacts on cost of capital but in case of lupin ltd, their p-value is

much more than so it is less impact on cost of capital. in other case same situation there is no impact of leverage on cost of capital.

**CORRELATION OF DFL WITH COST OF CAPITAL( COC )**

**CORRELATION RESULT**

**TABLE: 1.3**

Companies	Correlation	Result
Sun pharma	+0.20	Positive
Cipla ltd	-0.39	Negative
Aurobindo	-0.22	Negative
Lupin ltd	+0.21	Positive
Dr. Reddy labs.	-0.13	Negative

**ANALYSIS:-**

As per the above table correlation of degree of financial leverage with cost of capital low correlated to each other. As per the correlation sunpharma ltd is positive correlation +0.20 during the study period and lupin is also positive during the study period and other pharmaceutical companies negative relationship with cost of capital. on the basis of degree of financial leverage is fixed charge is fixed so no more changes in the study period. Cipla company is negative correlated to the cost of capital when cost of capital is increase at that time no change in cost of capital. R= -0.39 in case of cipla but lupin correlation is positive R = 0.21.

**IMPACT OF DFL ON COST OF CAPITAL( COC )**

**Degree of financial leverage**

**TABLE: 1.4**

COMPANY	DEGREE OF FINANCIAL LEVERAGE AND COST OF CAPITAL				
	R <sup>2</sup>	Linear equation	p.value	Segt 5%	H <sub>0</sub> accept/reject
Sun pharma	0.0382	Y=13.23+0.314x	0.7524	0.05	Accepted
Cipla	0.1505	Y=25.62-11.44x	0.5187	0.05	Accepted
Aurobindo	0.0440	Y=18.79-4.217x	0.7343	0.05	Accepted
Lupin	0.0440	Y=-18.88+29.09x	0.7347	0.05	Accepted
Dr.reddy	0.0175	Y=37.83-24.94x	0.8317	0.05	Accepted

**ANALYSIS:-**

The above table indicate the regression analysis of selected pharmaceutical companies. As per the above table we observe that p-value(significance F) in Anova table is more than 0.05 at the level of 5% significance. Therefore the H<sub>0</sub>(null hypothesis is accepted its conclude that there is no significant impact of leverage on cost of capita. In case of financial leverage and its impact on cost of capital is same because of financial leverage is relationship between EBIT and EBT so its consider fixed charges so no major impact of leverage on cost of capital. The degree of financial leverage is no more different in all companies in the selected study period so here no difference in the impact of leverage on cost of capital. When the leverage is increase at that time cost of capital is decrease because correlation is negative between two variable.

**FINDINGS ON THE BASIS OF CO-RELATION:-**

**Corelation between leverage and cost of capital**

**TABLE: 5.3.5**

TYPES OF LEVERAGE	COMPANIES	CO-RELATION	RESULT

<b>Degree Of operating leverage with cost of capital</b>	Sun pharma ltd	-0.27	Negative
	Cipla ltd	+0.87	Positive
	Aurobindo ltd	-0.033	Negative
	Lupin ltd	-0.0073	Negative
	Dr.reddy labs.	-0.82	Negative
<b>Degree of financial leverage with cost of capital</b>	Sun pharma ltd	+0.20	Positive
	Cipla ltd	-0.39	Negative
	Aurobindo ltd	-0.22	Negative
	Lupin ltd	+0.21	Positive
	Dr.reddy labs.	-0.13	Negative

**FINDINGS ON THE BASIS OF REGRESSION ANALYSIS:-**

**Regression between leverage and cost of capital**

**TABLE: 5.3.6**

<b>Types of leverage</b>	<b>Companies</b>	<b>p-value</b>	<b>5% seg<sup>t</sup> level</b>	<b>Hypothesis(H<sub>0</sub>) (accepted /rejected)</b>	<b>Remark</b>
<b>Degree Of operating leverage with cost of capital</b>	Sun pharma ltd	0.6605	0.05	Accepted	There is no significant impact of DOL on COC
	Cipla ltd	0.0553	0.05	Accepted	There is no significant impact of DOL on COC
	Aurobindo ltd	0.9578	0.05	Accepted	There is no significant impact of DOL on COC
	Lupin ltd	0.9907	0.05	Accepted	There is no significant impact of DOL on COC
	Dr.reddy labs.	0.0909	0.05	Accepted	There is no significant impact of DOL on COC
<b>Degree of financial leverage with cost of capital</b>	Sun pharma ltd	0.7524	0.05	Accepted	There is no significant impact of DFL on COC
	Cipla ltd	0.5187	0.05	Accepted	There is no significant impact of DFL on COC
	Aurobindo ltd	0.7343	0.05	Accepted	There is no significant impact of DFL on COC
	Lupin ltd	0.7347	0.05	Accepted	There is no significant impact of DFL on COC
	Dr.reddy labs.	0.8317	0.05	Accepted	There is no significant impact of DFL on COC

**GENERAL FINDINGS:-**

- The trend of sun pharma company is very flexible in case of degree of operating leverage.
- The trend of operating leverage aurobindo company is high in the year of 2013-14 but after than decreasing during the study period.
- Degree of operating leverage indicate the relationship between contribution and EBIT in all the companies variable cost is very flexible so contribution is also flexible this also effect on degree of operating leverage of the selected pharmaceutical companies.
- The trend of degree of financial leverage is very sensitive in the company of sun pharma ltd. Because their performance is increase at high degree of performance.
- In case of financial leverage performance are same because not wider change in interest, through interest expensis its fixed level so all companies performance of degree of financial leverage is near by 1.01.
- Combined leverage is the combination of operating leverage and financial leverage.
- Combined leverage is very high in the year 2015-16 in the company of sun pharma ltd.
- The cost of capital is in between 10.7% to 15.7% in all the companies.
- There is no relationship between Cost of capital and leverage.
- There is relationship between positive as well as negative between leverage and cost of capital.
- Dr. reddy labs. Only in one company impact of leverage on cost of capital because in case null hypothesis is rejected. So its concluded that there is a significant impact of leverage on cost of capital.

**SUGGESTIONS:-**

**Sun pharmaceutical ltd.:-**

- The operating leverage of the firm is neagtive effect on the EPS. Hence firm should not increase of the fixed operating cost bearing assets in the firm and the decrease the fixed operating cost for increasing the EBIT of the firm.
- Sun pharmaceutical companies fixed cost is high so that profit is decrease, so first suggestions to sun pharma to reduce their fixed cost.
- Degree of financial leverage sun pharma company is 1.02 so first company should improve their financial leverage.

**Cipla ltd.:-**

- The financial leverage of cipla ltd is very low because of financial charges are more and EBIT is low so that first company should reduces financial charges.
- The variable cost of cipla ltd is increase during the study period 2013-14 to 2017-18. So that company should reduce thire variable cost.
- The cipla ltd cost of capital is continuose increase so it is not good sign of the company.

**Aurobindo pharma ltd.:-**

- Theaurobindo pharmaceutical ltd. should improve thire degree of operating leverage.
- The aurobindos cost of capital is very high during the study period so must be reduce their cost of capital.
- The aurobindos corelation is negative so first company should convert in to positive corelation.

**Lupin ltd :-**

- The lupin ltd. Degree of operating, financial, combined leverage of the company is low, so that improve leverage through the study of income statement in the period of study.

- Only variable cost though company can improve their contribution.
- Companies sales increase so already companies profit increase.
- Company should improve assets and capitalisation rate.

**Dr. Reddy labs:-**

- Dr. reddy company can improve profit through the increase of sales.
- Dr. reddy company cost of capital high in the year of 2015-16 so company can reduce cost of capital through the more use of debt. As per the NI approach.
- The all leverage is low in all year so companies should improve leverage.

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