

A STUDY ON FINANCIAL PERFORMANCE OF INDIAN PHARMACEUTICAL COMPANIES USING DUPONT ANALYSIS

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Abstract: This study attempts to measure the financial performance of the Indian Pharmaceutical industry taking into consideration the top six Indian Pharma companies for a period of five years i.e. from 2015-16 to 2019-20. In order to achieve the objectives of this study, ratios are computed using the five-step DuPont model. DuPont analysis is one of those useful techniques put in use to portion the diverse drivers of return on equity. The grouping of a variety of components of ROE helps investors by focusing on the vital drivers of the financial performance individually, to recognize the strengths and weaknesses. Financial statement analysis is basically a study of the association among a variety of financial aspects in a business disclosed by a set of statements and examination of these trends as shown in a series of statements. A detailed financial analysis of all six companies using the DuPont system shows that no sample unit is able to maintain a good profit margin throughout the study period.

Keywords: DuPont analysis, financial performance, Return on Equity (ROE), Ratio analysis, profitability, Indian Pharmaceutical Companies, five-step DuPont model.

INTRODUCTION:

The pharmaceutical industry plays a vital role in promoting and sustaining development in the field of medicines. From uncomplicated pills to contemporary antibiotics and worldly wise cardiac compounds, almost every sort of medicine is now made. India has a reputed and rapidly growing presence in global pharmaceuticals. India acts as a major provider of medicines across the globe. This study is conducted to evaluate the Return on Equity (ROE) through the DuPont model analysis of the sample units. To examine the financial performance of sample companies that symbolize the Indian Pharmaceutical Industry by using DuPont Analysis and to find out how fundamentally strong they are. Indian pharma industry is one of the most preferred sectors by the investors because it is considered as one of the world's main and fastest-growing sectors. Therefore, while making an investment in the pharmaceutical sector; a comprehensible analysis is needed. This study provides adequate information for prospective investors in taking a rational and informed investment decision. The information from this study will be helpful to the sample units of pharma industries to map the coming near future with a vision of improving their performance particularly the ROE.

RESEARCH METHODOLOGY

OBJECTIVES OF STUDY:

- To look over the financial performance of selected companies representing the Indian Pharmaceutical Industry.
- To assess the impact of various components of DuPont Model on Return on Equity using five-step DuPont Model.
- To assess the interrelationship of every component of DuPont Model with each other.

HYPOTHESIS:

H₀₁ - Pre-interest and pre-tax profit margin of selected Indian pharma companies does not differ significantly during the study period.

H₀₂ - Asset turnover ratio of selected Indian pharma companies does not differ significantly during the study period.

H₀₃ - Interest burden ratio of selected Indian pharma companies does not differ significantly during the study period.

H₀₄ - Tax efficiency ratio of selected Indian pharma companies does not differ significantly during the study period.

H₀₅ - Financial leverage ratio of selected Indian pharma companies does not differ significantly during the study period.

H₀₆ - Return on Equity of selected Indian pharma companies does not differ significantly during the study period.

DATA SOURCE:

To test the hypothesis, this study used secondary data taken from published annual reports, official websites of selected pharmaceutical companies in India namely Sun Pharmaceutical Industries Limited, Dr. Reddy's Laboratories, Divis Laboratories Limited, Cipla Limited, Aurobindo Pharma Limited and Torrent Pharmaceuticals Limited. The DuPont model used helps in grouping of a variety of components of ROE which helps investors to focus on the vital drivers of the financial performance individually, to recognize the strengths and weaknesses.

SAMPLE FRAMEWORK:

Out of all the pharmaceutical companies in India, six pharmaceutical companies are selected by considering the market capitalization. They are Sun Pharmaceutical Industries Limited, Dr. Reddy's Laboratories, Divis Laboratories Limited, Cipla Limited, Aurobindo Pharma Limited and Torrent Pharmaceuticals Limited.

TOOLS AND TECHNIQUES:

Ratio analysis was used in this study and the ratios EBIT margin, Assets turnover, Interest burden, Tax efficiency, financial leverage are used to compute ROE. Other statistical tools like average, standard deviation, coefficient of variance are used along with ANOVA test to test the hypotheses of the study.

DATA ANALYSIS AND RESULTS**Hypothesis Testing using ANOVA:**

The data related to the return on equity is taken for analysis after computing the required ratios with the help of annual reports of respective sample units.

1. Significant relation between pre-interest and pre-tax profit margin of selected Indian pharma companies:

ANOVA Summary					
Source	Degrees of Freedom	Sum of Squares	Mean Square	F-Stat	F-Limit
Between Groups	5	0.1875	0.0375	5.3113	2.62
Within Groups	24	0.1695	0.0071		
Total	29	0.357			

As per above ANOVA table, the calculated value of F-Test is 5.3113, with degree of freedom being $V_1 = 5$ and $V_2 = 24$, which is higher than the table value of 2.62, hence null hypothesis is rejected & so concluded that there is significant difference in pre-interest and pre-tax profit margin i.e. the profit earning efficiency among selected samples during the study period.

2. Significant relation between asset turnover ratios of selected Indian pharma companies:

ANOVA Summary					
Source	Degrees of Freedom	Sum of Squares	Mean Square	F-Stat	F-Limit
Between Groups	5	0.7983	0.1597	15.9483	2.62
Within Groups	24	0.2403	0.01		
Total	29	1.0385			

As per the above ANOVA table, the calculated value of F-Test is 15.9483, with degree of freedom $V_1 = 5$, $V_2 = 24$, which is higher than the table value 2.62, hence null hypothesis is rejected & concluded that there is significant difference in the asset turnover ratio among sample units during the study period.

3. Significant relation between interest burden ratios of selected Indian pharma companies:

ANOVA Summary					
Source	Degrees of Freedom	Sum of Squares	Mean Square	F-Stat	F-Limit
Between Groups	5	0.2079	0.0416	0.3243	2.62
Within Groups	24	3.0766	0.1282		
Total	29	3.2845			

As per the above table, calculated value of F-test is 0.3243, with degree of freedom $V_1=5$ & $V_2=24$, which is lower than table value 2.62. So, the null Hypothesis (H_0) is accepted and thereby concluded that interest burden ratio does not differ significantly among selected samples during the study period.

4. Significant relation between tax efficiency ratios of selected Indian Pharma companies:

ANOVA Summary					
Source	Degrees of Freedom	Sum of Squares	Mean Square	F-Stat	F-Limit
Between Groups	5	0.313	0.0626	14.6705	2.62
Within Groups	24	0.1024	0.0043		
Total	29	0.4154			

Above ANOVA table shows the calculated value of F-Test as 14.6705, with degree of freedom $V_1=5$ & $V_2=24$, which is greater than the table value of F-Test which is 2.62, that's why null Hypothesis(H_0) is rejected & H_1 is accepted & so concluded that tax efficiency differs significantly among selected samples during the study period.

5. Significant relation between financial leverage ratios of selected Indian Pharma companies:

ANOVA Summary					
Source	Degrees of Freedom	Sum of Squares	Mean Square	F-Stat	F-Limit
Between Groups	5	76442.4163	15288.4833	26.387	2.62
Within Groups	24	13905.4719	579.3947		
Total	29	90347.8881			

As per above table calculated value of F-Test is 26.387, with degree of freedom $V_1=5$ & $V_2=24$, which is higher than the table value of F-Test 2.62. It means that NULL Hypothesis is rejected & so concluded that leverage ratio differs significantly among select samples during the study period.

6. Significant relation between return on equity of selected Indian Pharma companies:

ANOVA Summary					
Source	Degrees of Freedom	Sum of Squares	Mean Square	F-Stat	F-Limit
Between Groups	5	76442.4163	15288.4833	26.387	2.62
Within Groups	24	13905.4719	579.3947		
Total	29	90347.8881			

As per the above table, calculated value of F-test is 9.6996, with degree of freedom $V_1=5$ & $V_2=24$, which is higher than the table value 2.62. So here Null Hypothesis (H_0) is rejected and thereby concluded that Return on Equity differs significantly among selected samples during the study period.

FINDINGS:

The findings from ANOVA test:

S. No	Component	F-Ratio	H_0/H_1	Acceptance/ Rejection	Findings
1	Profit earning efficiency	5.3113	H_0	Rejected	Significant difference between ratios
2	Assets turnover	15.9483	H_0	Rejected	Significant difference between ratios
3	Interest burden	0.3243	H_0	Accepted	No significant difference between ratios
4	Tax efficiency	14.6705	H_0	Rejected	Significant difference between ratios
5	Financial leverage	26.387	H_0	Rejected	Significant difference between ratios
6	Return On Equity	9.6996	H_0	Rejected	Significant difference between ratios

The findings from the study are as follows:

- In case of profit earning efficiency ratio, the average earning efficiency of DIVIS is higher among all other samples and lower in case of SUNPHARMA. All the sample units except SUNPHARMA are having fluctuating trend whereas SUNPHARMA has an upward trend.
- In case of Assets turnover ratio, the average asset turnover ratio is better in CIPLA than other samples, whereas SUNPHARMA has the lowest average asset turnover ratio. SUNPHARMA shows the increasing trend and CIPLA shows a decreasing trend in the asset turnover ratio, while other sample units show a fluctuating trend.
- In case of interest burden ratio, DIVIS has the highest average interest burden ratio and TORNTPHARM has lowest average interest burden ratio. All the selected sample units except DIVIS are showing fluctuating trend throughout the study period, whereas DIVIS shows no trend with a variance of 0.
- In case of the tax efficiency ratio, SUNPHARMA shows the highest average tax burden ratio and DIVIS shows the lowest average tax burden during the study period. All the selected sample units are showing fluctuating trend in tax efficiency ratio throughout the study period.
- In case of financial leverage ratio, the average leverage ratio is highest for AUROPHARMA and lowest in the case of CIPLA during the study period. DIVIS and AUROPHARMA show an upward trend in the figure while the other sample units show a fluctuation in their trends.
- In case of ROE, all the selected samples except SUNPHARMA have fluctuating trend during the study period, whereas SUNPHARMA has an upward trend. The highest average ROE can be seen in AUROPHARMA while the lowest average in SUNPHARMA.

CONCLUSION:

In this study, it is found that AUROPHARMA has the highest average return on equity among the selected samples with a low variance. So it can be concluded that AUROPHARMA has a higher growth than any other sample unit.

From the analysis of various components, it is concluded that there is significant difference between ratios for all the components except Interest burden. However, it is found that each and every component (i.e. EBIT margin, assets turnover, interest burden, tax efficiency, leverage) affects the return on equity, which means the strength of evidence falls short to prove an effect with respect to interest burden.

There is no difference in the return on equity calculated by using five-step and three-step DuPont Models.

Overall performance of all the selected samples except Sunpharma, with special reference to Return on Equity and its trend show fluctuating trend. Sunpharma has an upward trend but it has negative returns during the first two years of the study period. One can interpret that no sample unit is able to maintain a good profit margin throughout the study period i.e. 2015-16 to 2019-20.

All the sample units need to improve its performance to expect good returns in future. Thus an attempt has been made to give the suggestions to the selected sample units which can be useful for the further research works.

SUGGESTIONS:

1. In order to improve the profit margin, the companies can increase the sales income in various ways like increasing their sales price or creating new demand when there is a tough competition. They can even minimize the unnecessary costs to the extent possible.
2. In case of assets turnover ratio, the companies can try to increase their assets efficiency by selling those assets which are not in use and find new ways to utilize the existing assets. Companies should choose the correct promotion mix to increase sales and it should opt for the maximum production capacity to maximize sales which in turn increases the EBIT and assets efficiency.
3. To reduce the interest burden, it is suggested that the additional capital should not be brought from the borrowed funds. The amount of interest to be paid should be minimized.
4. To maintain a better tax efficiency ratio, the companies are suggested to maintain sufficient reserves for the payment of taxes and reduce the operating expenses to a possible extent. So companies should take proper decisions to reduce the tax by investing the returns in better source which benefits the company and lowers the taxable income.
5. An increase in leverage ratio results in creating more interest burden and risk on the part of owners. The companies should not borrow more funds; instead rely on owner's fund.

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REFERENCES:**Books:**

1. I. M. Pandey (1998) "Financial Management", Mumbai, Vikas publishing house Pvt Ltd
2. Kishore Ravi M (2002) Taxmann's "Cost Accounting & Financial Management", Delhi, Taxmann Publication pvt.ltd.
3. Machiraja M. R. (2008), "International Financial Management", Mumbai, Himalaya Publishing House Pvt. Ltd.
4. Khan M.Y. & Jain P. K. (2008) "Cost Accounting & Financial Management", New York, US, McGraw Hill Education
5. Chandra Prasanna,(2014) "Financial Management", New York, US, McGraw Hill Education Kothari C. R.(2009), "Research Methodology", Mumbai , New Age International Publishers, second revised edition

Websites:

1. https://en.wikipedia.org/wiki/Pharmaceutical_industry_in_India
2. <https://www.sunpharma.com/investors/annualreports>
3. <https://www.drreddys.com/investors/reports-and-filings/annual-reports/>
4. <https://www.divisilabs.com/investor-relations/reports-and-filings/annual-reporting/>
5. <https://www.cipla.com/investors/annual-reports>
6. <https://www.aurobindo.com/investors/results-reports-presentations/annual-reports/>
7. <http://www.torrentpharma.com/index.php/investors/financial?fy=2018-19>
8. <https://www.moneycontrol.com/>