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A STUDY ON FINANCIAL PERFORMANCE OF SELECT PHARMACEUTICAL PERFORMANCE USING THE DUPONT ANALYSIS IN INDIA

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ABSTRACT

DuPont analysis is an important tool for judging the operating financial performance of any organization. It is an indication of the earning power of the firm. DuPont model which is based on analysis of Return on equity and Return on Investment. The return on equity disaggregates performance into three components net profit, total asset turnover, and equity multiplier. Return on investment consists of assets turnover and profit margin. The study attempts to measure the financial performance of pharmaceutical companies such as Cipla, Sun pharmaceuticals, Dr. Reddy's Laboratories, Lupin, Aurobindo pharma for the period of 2013-14 to 2022-23.

Keywords: Pharmaceutical Companies, DuPont , Return on Investment, Return onEquity

1. Introduction

In today's dynamic business environment, it is important for the professionals to be prepared to apply their skills both within and outside the specific management function. Managers may be called upon to provide insights regarding issues such as strategic financial planning, measuring the success of a business strategy or determining the viability of an acquisition candidate. Even so, the normal duties involved in credit assessment and management call for the credit manager to be equipped to conduct financial analysis in a rapid and meaningful way. The DuPont ratio is a useful tool in providing both an overview and a focus for such analysis. The DuPont ratio can be used as a compass in this process by directing the analysts toward significant areas of strength and weakness evident in the financial statements. According to the Du-Pont analysis is an important tool for judging the operating financial performance. It is an indication of the earning power of the firm. It is observed that most of the firms would like to improve their RONA. However, in this competitive world, RONA is always under pressure.

DuPont Analysis

DuPont Model comes from DuPont Corporation that started using this formula in 1920s. With this method, assets are measured at their gross book value rather than at net book value in order to produce a higher return on equity (ROE). It is also known as "Du Pont identity". According to Soliman (2004), the DuPont model makes a more accurate profitability forecast by identifying the specific profitability ratios that played influential roles in past performance. This is an attempt to isolate the causes of strength and weakness in the firm's performance. DuPont focuses on expense control, asset utilization and debt utilization. The original DuPont model is used to analyse profitability as well as the strategic position of firms and is based on balance sheet (e.g., assets, and equity) and income statement accounts (e.g., sales revenues, and operating income).

DuPont profitability model ingredients

DuPont method or the DuPont Identity also known as the DuPont formula, DuPont analysis, DuPont Model or DuPont equation, is a method for assessing a company's return on equity (ROE) and return on investment (ROI) breaking its into two parts. This formula is used to discover if there are significant differences between how the performance of the companyis assessed.

1.1Return on Investment (ROI)

For a given use of money in an enterprise, the ROI (return on investment) is how much profit or cost saving is realized. An ROI calculation is sometimes used along with other approaches to develop a business case for a given proposal. The overall ROI for an enterprise is sometimes used as a way to grade how well a company is managed. It has been observed that although a high profit margin is a test of better performance a low margin does not necessarily imply a lower rate of return on investments of a form has higher investment/assets turnovers. Therefore, the over-all operating efficiency of a firm can be assessed on the basis of a combination of the investment (ROI) ratio. The earning power of a firm may be defined as the over-all profitability of an enterprise. In reality, most organizations use one or more "financial metrics" which they refer to individually or collectively as "ROI".

ROI = PAT/Investment or Total Share Capital

1.2Return on Equity (ROE)

Return on Equity (ROE) measures the rate of return on the ownership interest. It measures a firm's efficiency on generating profits from every unit of shareholder's equity. Finally, ROE shows how well a company uses investment funds to generate earnings growth. ROE describes the size of return an owner receives from investing capital into the firm. New investment into a firm is discouraged if a firm's ROE is less than the required rate of returnof an investor.

Return on Equity explains why the level of return changes from year to year or why two company's return on equity differs If a company uses relatively more liabilities to finance assets, the Equity Multiplier will rise and hold other factors constant and the firm's Return on Equity will increase. The Return on Equity model disaggregates performance into the three components that determine Return on Equity: net profit margin, total asset turnover, and the Equity Multiplier. Return on Equity analysis provides a system for planning (budgeting) in addition to analyzing the financial institution's performance. By analyzing each component of the ROE equation, insight is gained into whether a company's return is based on high profitability, proficient management of assets, or leverage for risk. Firms can be compared within an industry utilizing the Du Pont analysis's financial ratios through a cross sectional analysis or a time series basis.

Return on equity (ROE) measures profitability and how effectively a company uses shareholder money to make a profit. ROE is expressed as a percentage of common stock shareholders. It's calculated by taking net income (income less expenses and taxes) figured before paying common share dividends and after paying preferred share dividends. Divide the result by total shareholders' equity: Net income (expenses and taxes before paying common share dividends and after paying preferred share dividends) / total shareholders' equity = return on equity.

ROE = Net Income/ Total share holders' equityNet Income = PAT - PD

Return-on-equity or ROE is a metric used to analyze investment returns. It's a measure of how effectively a company uses shareholder equity to generate income. You might consider a good ROE to be one that increases steadily over time. This could indicate that a company does a good job using shareholder funds to increase profits. That can in turn increase shareholder value.

2. Statement of Problem:

Return on equity is a metric used by any equity investors to determine if a business provides a reasonable return on its shareholders investment. However ROE is looking at deeper understanding of return on equity of financial performance of organization. Many equity investors look into return on equity for judging whether company is generating good return on the investment of the shareholders. It may not be prudent to look at ROE instead one should go for DuPont analysis in order to have a better understanding about the return on equity.

3. Objectives of the study:

1.To study the DuPont model is to used to investigate the financial performance ofselect pharmaceutical companies

2.To compare the return on investment and return on equity relationship between theperformance pharmaceutical companies.

4. Research Methodology:

Secondary Data: the secondary data collected form balance sheets of select pharmaceuticals companies and journals, websites. Etc,.

Period of the Study:

The study is confined to a ten years period i.e., from 2013-14 to 2022-23 for the analysisof the Performance of Pharmaceutical companies.

Tools : DuPont analysis, Mean variance, Correlation and T- Test

5. Review of Literature:

T. Vanniarajan and C. Samuel Joseph (2007) :In his study An Application of DuPont Control chart in Analyzing the financial performance of Banks. The liberlization of the finance sector in India is exposing Indian banks to a new economic environment it is characterized by increased competition and new regulatory requirements. Indian and foreign banks are exploring growth opportunities in India by introducing new products for different customer segments, many of which were not conventionally viewed as customer for the Banks have, in the last ten years, witnessed new shareholders. All banks are in a position to evaluate its performance compared to others. In general, the performance of the banks may be viewed on three dimensions namely structural, operational and efficiency factors are suggested by India Bank Association.

S. Christina Sheela Dr. K. Karthikeyan (2012): The study is tried to demonstrate with the help of profitability ratios like ROI and ROE that the comparison of performance and condition of a company against its competitors, analyzing trends in the returns of a company in the context of trends of the components and forecasting the returns of a company based on forecasts of the components. the above analysis it is found that Cipla pharmaceutical ROE and ROI has highest returns on equity and Investment by 23.10 and

0.21 followed by Dr. Reddy's Laboratories ROE is 17.00 and ROI is 0.18. The third position secured by Ranbaxy Laboratories ROE is 16.16 and ROI by 0.13. This shows Cipla is concentrating on its financial performance by reducing its expenses and cost.As a conclusion, the Du Pont analysis that we made (by calculating ROI and ROE) for the top 3 most profitable pharmaceutical companies in India emphasize that absolute measurementsare not relevant every time.

Rogova [2014]: DuPont analysis effectively proved that factors of efficiency which had, in turn, impacted the investment appeal of Russian oil-extracting companies. It was found that a strong advantage of ROE was the possibility of its disaggregation into different profitability ratios, with ROE indicating profitability and efficiency from the shareholders' point of view.

Akanksha Puwar , Kashish Jalan , Ashim Garg (2018): In his discussion, it is safe to conclude that Torrent Pharmaceuticals is the most profitable for its shareholders while Sun Pharma is the least profitable on the basis of Return on Equity. Moreover, the growth in ROE value of Torrent Pharmaceuticals has been tremendous. The three-point analysis had raised the possibility of Torrent Pharmaceuticals being risky from the investors perspective and thus indicated possibility of investors being uninterested in investing / giving loan to Torrent Pharmaceuticals but the five-point analysis eliminates this possibility, owing to the low interest expense rates in spite of the high value of debt (indicated by high equity multiplier). Thus, the investors are in fact ready to invest in Torrent Pharmaceuticals at a very low interest rate. This deeper analysis thus confirms their profitability position. The same analysis has also led to the conclusion that Sun Pharma has been loss making for its investors. However, it is still not on the verge of being bankrupt because of the low equity multiplier and interest expenses which indicate that although loss making, Sun Pharmacy is not very unstable yet and can recover if they focus on increasing the Operating Profit Margin by increasing the revenue relative to their operating expenses.

Md. Nurul Kabir Biplob, Shah Alam, Md. Monzur Hossain [2018]: A DuPont Analysis of Return on Common Stockholder's Equity in Pharmaceutical Industry of Bangladesh' was conducted Five ways DuPont decomposition of pharmaceutical companies from 2011 to 2015 was used. This model evaluates better how well a company is operating and how profit is earned relative to sales, total assets etc. An analysis of the study presents the best one among selected pharmaceutical companies.

6.Data Analysis:

Table-6.1

Return on Investment of select Pharmaceutical companies during the period of2013-14 to 2022-23

Year	Sun Pharmaceutical Industries Ltd	Cipla Ltd	Aurobindo Pharma Ltd.	Dr Reddy's Laboratories Ltd	LupinLtd
2022-23	7.05	15.57	21.00	31.37	4.67
2021-22	-0.42	18.33	24.83	19.51	-2.08
2020-21	8.92	15.30	53.13	26.28	13.87
2019-20	13.38	14.38	31.96	35.35	8.03
2018-19	3.40	11.72	26.11	15.39	17.00
2017-18	1.27	9.12	30.94	6.83	19.84
2016-17	-0.10	6.06	29.13	16.70	46.27
2015-16	-4.46	9.10	27.80	15.88	42.66
2014-15	-7.12	7.35	51.93	19.71	35.73
2013-14	-13.66	8.65	40.21	22.71	35.00

(Source: compiled from Annual Reports)

Table-6.2

Return on Equity of select Pharmaceutical companies during the period of 2013-14to 2022-23

Year	Sun Pharmaceutical Industries Ltd	CiplaLtd	Aurobindo Pharma Ltd.	Dr Reddy's Laboratories Ltd	LupinLtd
2022-23	87.91	100.65	225.74	210.73	124.73
2021-22	68.95	85.27	204.10	178.93	131.16
2020-21	53.99	87.61	280.14	170.07	123.26
2019-20	58.53	84.04	233.31	151.55	126.94
2018-19	48.24	80.37	212.61	130.89	128.70
2017-18	42.24	72.82	176.66	115.22	112.94
2016-17	34.17	67.73	166.29	124.37	140.77
2015-16	33.43	77.16	159.85	122.53	126.57
2014-15	39.73	64.01	279.53	120.11	110.49
2013-14	14.52	60.16	246.50	116.09	104.31

(Source: compiled from Annual Reports)

DuPont analysis using (ROI & ROE) of Select Sun Pharmaceutical company for aperiod of 2013-14 to 2022-23

Ho1: There is no significant difference between the (RoE)and (RoI) of Sunpharmaceuticals Ltd.

Ha1: There is a significant difference between the (RoE)and (RoI) of Sun pharmaceuticalsLtd.

Table-6.3

Du Pont analysis (ROI & ROE) of Sun Pharmaceutical Ltd for a period of2013-14 to 2022-23

t-Test: Paired Two Sample for Means		
	RoI	RoE
Mean	0.83	48.17
Variance	63.55	422.69
Observations	10	10
Pearson Correlation	0.71	
Hypothesized Mean Difference	0	
df	9	
t Stat	-9.37	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.83	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.26	

(Source: compiled from Annual Reports)

From the above table 6.3. reveals that the RoI and RoE of Sun Pharmaceuticals Ltd Mean value 0.83 and 48.17. Variance 63.55 and 422.69, the person correlation between RoI and RoE 0.71 positive correlation. The one and two tail test the p value is 0.000 at 5% (0.05) significant level. Hence it concludes that there is a significant difference between RoI andRoE of sun pharmaceuticals Ltd.

Du Pont analysis using (ROI & ROE) of Select Cipla Ltd. Pharmaceutical company for a period of 2013-14 to 2022-23

Ho2: There is no significant difference between the (RoE)and (RoI)of Cipla Ltd. Ha2: There is a significant difference between the (RoE)and (RoI) of Cipla Ltd.

Table-6.4

Du Pont analysis (ROI & ROE) of Cipla Ltd for a period of 2013-14 to 2022-23

t-Test: Paired Two Sample for Means		
	RoI	RoE
Mean	11.56	77.98
Variance	16.92	149.70
Observations	10	10
Pearson Correlation	0.83	
Hypothesized Mean Difference	0	
df	9	
t Stat	-23.03	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.83	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.26	

(Source: compiled from Annual Reports)

From the above table 6.4 reveals that the RoI and RoE of Cipla Ltd Mean value 11.56 and 77.98. variance 16.92 and 149.70, the person correlation between RoI and RoE 0.83 positive correlation. The one and two tail test the p value is 0.000 at 5% (0.05) significant level . Hence it concludes that there is a significant difference between RoI and RoE of Cipla Ltd.

DuPont analysis using (ROI & ROE) of Select Aurobindo Pharmaceutical companyfor a period of 2013-14 to 2022-23

Ho3: There is no significant difference between the (RoE)and (RoI)of Aurobindo PharmaLtd.

Ha3: There is a significant difference between the (RoE)and (RoI) of Aurobindo PharmaLtd.

Table-6 5

Du Pont analysis (ROI & ROE) of Aurobindo Pharma Ltd. for a period of 2013-2014 to 2022-2023

t-Test: Paired Two Sample for Means		
	RoI	RoE
Mean	33.70	218.47
Variance	124.01	1859.80
Observations	10	10
Pearson Correlation	0.75	
Hypothesized Mean Difference	0	
df	9	
t Stat	-16.44	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.83	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.26	

(Source: compiled from Annual Reports)

From the above table 6.5 reveals that the RoI and RoE of Aurobindo Pharma Ltd. Mean value 33.70 and 218.47. variance 124.01 and 1859.80, the person correlation between RoI and RoE 0.75 positive correlation the one and two tail test the p value is 0.000 at 5% (0.05) significant level . Hence it concludes that there is a significant difference between RoI andRoE of Aurobindo Pharma Ltd.

DuPont analysis using (ROI & ROE) of Select Dr.Reddy's Laboratories Pharmaceutical company for a period of 2013-14 to 2022-23

Ho4: There is no significant difference between the (RoE)and (RoI)of Dr Reddy's Laboratories Ltd.

Ha4: There is a significant difference between the (RoE)and (RoI) Dr Reddy's Laboratories Ltd

Table-6.6

Du Pont analysis (ROI & ROE) of Dr Reddy's Laboratories Ltd for a period of2013-14 to 2022-23

t-Test: Paired Two Sample for Means		
	RoI	RoE
Mean	20.98	144.05
Variance	69.45	1067.18
Observations	10	10
Pearson Correlation	0.63	
Hypothesized Mean Difference	0	
df	9	
t Stat	-13.81	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.83	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.26	

(Source: compiled from Annual Reports)

From the above table 6.6 reveals that the RoI and RoE of Dr Reddy's Laboratories Ltd. Mean value 20.98 and 14.05. Variance 69.45 and 1067.18, the person correlation between RoI and RoE 0.63 positive correlation the one and two tail test the p value is 0.000 at 5% (0.05) significant level . Hence it concludes that there is a significant difference between RoI and RoE of Dr Reddy's Laboratories Ltd.

Ho5: There is no significant difference between the (RoE)and (RoI)of Lupin Ltd. Ha5: There is a significant difference between the (RoE)and (RoI) Lupin Ltd

Table-6.7
Du Pont analysis (ROI & ROE) of Lupin Ltd for a period of 2013-2014 to 2022-2023

t-Test: Paired Two Sample for Means		
	RoI	RoE
Mean	22.09	122.98
Variance	282.71	117.02
Observations	10	10
Pearson Correlation	-0.12	
Hypothesized Mean Difference	0	
df	9	
t Stat	-15.14	
P(T<=t) one-tail	0.000	
t Critical one-tail	1.83	
P(T<=t) two-tail	0.000	
t Critical two-tail	2.26	

(Source: compiled from Annual Reports)

From the above table 6.7 reveals that the RoI and RoE of Lupin Ltd. Mean value 22.09 and 122.98 Variance 282.71 and 117.02, the person correlation between RoI and RoE -0.12 negative correlation the one and two tail test the p value is 0.000 at 5% (0.05) significant level. Hence it concludes that there is a significant difference between RoI and RoE of Lupin Ltd.

Findings:

It is observed from the study that the mean value of Return on investment of Aurobindo Pharma is 33.70 more than the Sun pharma, Cipla Ltd., Lupin Ltd, and Dr. Reddy's Laboratories companies.

It is observed from the study that the mean value of Return on Equity of Aurobindo Pharma is 218.47 more than the Sun pharma, Cipla Ltd., Lupin Ltd, and Dr. Reddy's Laboratoriescompanies.

It is observed from the study that the variance value of Return on investment of Lupin Ltd is 282.71 more than the Sun pharma, Cipla Ltd., Aurobindo Pharma and Dr. Reddy's Laboratories companies.

It is observed from the study that the variance value of Return on Equity of Aurobindo Pharma Ltd is 1859.80 more than the Sun pharma, Cipla Ltd., Lupin Ltd and Dr. Reddy's Laboratories companies.

Conclusion:

The profitability ratios like Return on Investment and Return on equity that the comparison of the performance and condition of organizations against its competitors analyzing the in returns of organizations it found that Aurobindo pharmaceuticals Return on equality and return on investment has highest returns and followed by Dr. Reddy's Laboratories. The organizations profitability for most investors is a landmark in terms of earnings they could obtain by placing capital. Profits earned by the organization taken the absolute amount, provides an overview of a company's activity without giving details about the extent to which the company manages dividends , debts, liabilities or other indicators. ROI and ROE is the most comprehensive measure of profitability of a firm. It considers the operating and investing decisions made as well as the financing and tax related decisions.

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