**International Journal of Multidisciplinary Research and Development**
**Online ISSN: 2349-4182, Print ISSN: 2349-5979, Impact Factor: RJIF 5.72**
**www.allsubjectjournal.com**
**Volume 3; Issue 4; April 2016; Page No. 321-324**

# Financial Performance of select Pharmaceutical Companies in India using DuPont Analysis

**[1] A Geethalakshmi, [2] Dr. K Jothi**
[1] Ph.D Research Scholar, Department of Commerce, Karpagam University, Cbe-21.
[2] Associate Professor, Department of Commerce, Karpagam University, Cbe-21.

**Abstract**
DuPont analysis (ROI and ROE)) is an important tool for judging the operating financial performance. It is an indication of the earning power of the firm. DuPont Model which is based on analysis of Return on Equity (ROE) & Return on Investment (ROI). The return on equity disaggregates performance into three components: Net Profit Margin, Total Asset Turnover, and the Equity Multiplier. Return on Investment consists of Assets Turnover and Profit Margin. The return on investment consists of Assets Turnover (Operating Income X Total Assets) and Profit Margin (EBIT X Operating Income). This study attempts basically to measure the financial performance of the Pharmaceutical companies taking Cipla, Dr. Reddy's Laboratories, for the period 2006-2007 to 2015-2016. In conclusion, ROE & ROI 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

**Keywords:** Pharmaceutical companies, Financial Performance, DuPont Analysis, Return on equity, Return on Investment

## 1. Introduction
The model was created by F. Donaldson Brown who came up with the model when he was assigned to clean up the finances in General Motors and has ever since been an important model for financial analysis. Remarkably it has not been used in the security community for risk prioritization or impact analysis. The original DuPont method of financial ratio analysis was developed in 1918 by an engineer at DuPont who was charged with understanding the finances of a company that DuPont was acquiring. He noticed that the product of two often-computed ratios, net profit margin and total asset turnover, equals return on assets (ROA).
The DuPont Model is a useful tool in providing both an overview and a focus for such analysis. It can be used as a compass in the process by directing the analyst toward significant areas of strength and weakness evident in the financial statements. This study attempts basically to measure the financial performance of the Pharmaceutical Industry in India.

### Statement of the Problem
Many equity investors look into return on equity for judging whether company is generating good return on the investment of the shareholders. However 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.

### Research methodology
### Objectives of the Study
- To measure the financial performance of the Pharmaceutical ROI pharmaceutical companies in India.
- To find out the ratios of ROE and ROI pharmaceutical companies in India.

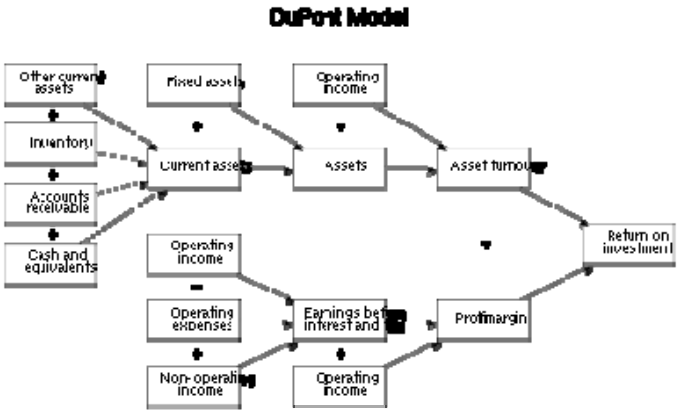
### Sources of Data
Secondary data is used for the study.

### Period of the Study
The study covers a period of ten years from the financial year 2006-2007 to 2015-2016

### Tools used
DuPont analysis

### Sample Design
The data for this study is selected based on convenience sampling method.

### DuPont Model
DuPont Mode (Return on Equity) = Net Profit margin *Asset turnover ratio* Equity Multiplier, DuPont model is a tool to start off with financial statement analysis because it is based on return on equity. Return on Equity (ROE) is therefore most crucial ration which indicates the rate at which owner capital is increasing. DuPont ratio is made up of 3 major component i.e. profitability, operating efficiency and leverage.




Return on equity (ROE) measures the rate of return for ownership interest (shareholders' equity) of common stock owners. It measures the efficiency of a firm at generating

profits from each unit of shareholder equity, also known as net assets or assets minus liabilities. ROE shows how well a company uses investments to generate earnings growth. ROEs 15-20% are generally considered good.

If a company's ROE goes up due to an increase in the net profit margin or asset turnover, it is a positive sign for the company. However, if the ROE is increasing due to equity multiplier, it may not be a good sign indicating that company ROE is increasing due to excess leverage.

Even if a company's ROE has remained unchanged, assessment in this way can be very helpful. Suppose a company's net profit margin and asset turnover decreased, that implies that ROE stayed the same due to a large increase in equity multiplier or leverage which is not a good sign for a company.

A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. ROI measures the amount of return on an investment relative to the investment's cost. To calculate ROI, the benefit (or return) of an investment is divided by the cost of the investment, and the result is expressed as a percentage or a ratio.

**Net profit margin**

Net Profit margin of a firm shows how much earning is generated from a single rupee of asset. Net profit margin depends upon the amount of competition faces by the organization. In a competitive market the lower margin would be there, whereas company with high profit margin indicates that they have a product or service with a price premium. Net profit margin varies from firm to firm. Therefore it is important to compare the ROE's and others financial ratio of different firm in the same industry as similar business constraint will be exit for each of the firm in that industry

**Asset turnover ratio**

Asset turnover means how much sales a company generate from the each rupee of asset. It helps to measure effectiveness of management. The majority of high profit margin company also tends to have lower asset turnover. On the other hand low margin organization tends to have high turnover ratio, as they are highly depended upon high sales volume to increase profit. By improving the asset management policies, a firm can increase it equity returns

**Equity multiplier**

The last and important component of DuPont model is equity multiplier which shows how the firm can take the benefit from debt to finance its asset. A higher equity multiplier indicates high financial leverage, which means the firm relying more on borrowed loan to finance its asset. The organization can increase its ROE by increasing equity multiplier.

**Review of literature**

Mihaela Herciu, Claudia Ogrean & Lucian Belasco (2011) The present paper aims to demonstrate that in most cases the most profitable companies are not the most attractive for investors – through Du Pont Analysis method. In order to do this, we take into account the top 20 most profitable companies in the world in 2009 (according to Fortune). By using Du Pont analysis we came to the results that the ranking is not preserved when indicators (ratios) such as ROA (return on assets) or ROI (return on Investment), ROE (return on equity) or ROS (return on sales) are taken into consideration**.**

Dr. Ahmed Arif Almazari (2012) This study attempts basically to measure the financial performance of the Jordanian Arab commercial bank for the period 2000-2009 by using the DuPont system of financial analysis which is based on analysis of return on equity model and return on investment model. The return on equity model disaggregates performance into three components: net profit margin, total asset turnover, and the equity multiplier. It was found that the financial performance of Arab Bank is relatively steady and reflects minimal volatility in the return on equity. Net profit margin and total asset turnover exhibit relative stability for the period from 2001 to 2009.The equity multiplier also show almost stable indicators for the period from2001-2005 and the ratios declined from 2006-2009 which indicates that the Arab bank had less financial leverage in the recent years, which means the bank is relying less on debt to finance its assets.

Debasish Sur and kaushik Chakra borty (2006) in his study financial performance of Indian Pharmaceutical Industry: The Indian Pharmaceutical Industry has been playing a very significant role in increasing the life expectancy and in decreasing the mortality rate. It is the 5th largest in terms of volume and 14th largest in value terms I the world. The comparative analysis the financial performance of Indian pharmaceutical industry for the period 1993 to 2002 by selecting six notable companies of the industry. The comparison has been made from almost all points of view regarding financial performance using relevant statistical tools.

T. Vanniarajan and C. Samuel Joseph (2007) in his study An Application of DuPont Control chart in Analyzing the financial performance of Banks. The liberalization 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.

**DuPont Analysis Computation**

The DuPont analysis computes variables from the income statement and balance sheet to determine a firm's return on equity (ROE) & return on Investment (ROI). The formula is as follows:

**ROE = Profit Margin (Net Profit/Sales) X Asset Turnover (Sales/Total Assets) X Equity Multiplier (Total Assets/Total Equity)**

**ROI = Assets Turnover (Operating Income X Total Assets) X Profit Margin (EBIT X Operating Income.**

**Table 1:** Showing ROE for Cipla pharmaceutical

| Year | Total Assets | Common stock Equity | Financial leverage | NPM | TAT | ROA | ROE= FL*ROA |
|---|---|---|---|---|---|---|---|
| 2006-2007 | 2616.06 | 1553.63 | 1.68 | 18.17 | 0.86 | 15.63 | 26.31 |
| 2007-2008 | 3458.33 | 1983.27 | 1.74 | 20.38 | 0.86 | 17.53 | 30.56 |
| 2008-2009 | 4413.74 | 3236.27 | 1.36 | 18.75 | 0.82 | 15.38 | 20.97 |
| 2009-2010 | 5733.21 | 3755.82 | 1.53 | 16.69 | 0.73 | 12.18 | 18.60 |
| 2010-2011 | 6859.7 | 4350.75 | 1.58 | 14.84 | 0.76 | 11.28 | 17.78 |
| 2011-2012 | 8443.93 | 5914.09 | 1.43 | 19.29 | 0.66 | 12.73 | 18.18 |
| 2012-2013 | 7643.42 | 2039.49 | 3.75 | 10.4 | 1.14 | 11.86 | 44.43 |
| 2013-2014 | 9985.61 | 2809.13 | 3.55 | 13.74 | 1.15 | 15.80 | 56.17 |
| 2014-2015 | 11319.3 | 3895.89 | 2.91 | 18.65 | 0.83 | 15.48 | 44.97 |
| 2015-2016 | 12674.76 | 2976.69 | 4.26 | 16.29 | 0.92 | 14.99 | 63.81 |
| MEAN | 7314.81 | 3251.50 | 2.38 | 16.72 | 0.87 | 14.28 | 34.18 |
| STD.DEV | 3355.87 | 1299.53 | 1.12 | 3.03 | 0.16 | 2.09 | 17.00 |

**Interpretation**

From the above table ROE is reveals that mean value is 34.18, Std. dev is 17.00.

**Table 2:** Showing ROI for Cipla pharmaceutical

| Year | Operating Income | Total assets | Asset Turnover | EBIT | Operating Income | Profit Margin | ROI |
|---|---|---|---|---|---|---|---|
| 2006-2007 | 505.29 | 2616.06 | 0.19 | 581.32 | 505.29 | 1.15 | 0.22 |
| 2007-2008 | 693.89 | 3458.33 | 0.20 | 806.09 | 693.89 | 1.16 | 0.23 |
| 2008-2009 | 821.83 | 4413.74 | 0.19 | 922.51 | 821.83 | 1.12 | 0.21 |
| 2009-2010 | 852.17 | 5733.21 | 0.15 | 987.09 | 852.17 | 1.16 | 0.17 |
| 2010-2011 | 1244.84 | 6859.7 | 0.18 | 1105.33 | 1244.84 | 0.89 | 0.16 |
| 2011-2012 | 1380.93 | 8443.93 | 0.16 | 1506.64 | 1380.93 | 1.09 | 0.18 |
| 2012-2013 | 1658.85 | 7643.42 | 0.22 | 1486.15 | 1658.85 | 0.90 | 0.19 |
| 2013-2014 | 2197.85 | 9985.61 | 0.22 | 2129.28 | 2197.85 | 0.97 | 0.21 |
| 2014-2015 | 2133.05 | 11319.3 | 0.19 | 2025.78 | 2133.05 | 0.95 | 0.18 |
| 2015-2016 | 2161.7 | 12674.76 | 0.17 | 1822.54 | 2161.7 | 0.84 | 0.14 |
| MEAN | 1365.04 | 7314.81 | 0.19 | 1337.27 | 1365.04 | 1.02 | 0.19 |
| STD.DEV | 646.94 | 3355.87 | 0.02 | 536.42 | 646.94 | 0.13 | 0.03 |

**Interpretation**

From the above table ROI is reveals that mean value is 0.19, Std. dev is 0.03.

**Table 3:** Showing ROE for Reddy's Laboratories

| Year | Total Assets | Common stock Equity | Financial leverage | NPM | TAT | ROA | ROE= FL*ROA |
|---|---|---|---|---|---|---|---|
| 2006-2007 | 2982.01 | 2074.08 | 1.44 | 4.23 | 0.51 | 2.16 | 3.10 |
| 2007-2008 | 3984.97 | 2262.14 | 1.76 | 10.54 | 0.5 | 5.27 | 9.28 |
| 2008-2009 | 5958.19 | 4373.36 | 1.36 | 31.11 | 0.63 | 19.60 | 26.70 |
| 2009-2010 | 6661.83 | 4811.81 | 1.38 | 14.21 | 0.5 | 7.11 | 9.84 |
| 2010-2011 | 7357.5 | 5259.1 | 1.40 | 14.02 | 0.54 | 7.57 | 10.59 |
| 2011-2012 | 8361 | 5914.6 | 1.41 | 19.25 | 0.53 | 10.20 | 14.42 |
| 2012-2013 | 8219.7 | 3511.8 | 2.34 | 13.25 | 1.33 | 17.62 | 41.25 |
| 2013-2014 | 9533.6 | 4140.1 | 2.30 | 12.83 | 1.38 | 17.71 | 40.77 |
| 2014-2015 | 12001.4 | 4888.5 | 2.46 | 14.69 | 1.2 | 17.63 | 43.28 |
| 2015-2016 | 13470.3 | 4637.8 | 2.90 | 15.55 | 1.22 | 18.97 | 55.10 |
| MEAN | 7853.05 | 4187.33 | 1.88 | 14.97 | 0.83 | 12.38 | 25.43 |
| STD.DEV | 78530.50 | 41873.29 | 18.76 | 149.68 | 8.34 | 123.83 | 254.33 |

**Interpretation**

From the above table ROI is reveals that mean value is 25.43, Std. dev is 254.33.

**Table 4:** Showing ROI for Reddy's Laboratories

| Year | Operating Income | Total Assets | Asset Turnover | EBIT | Operating Income | Profit Margin | ROI |
|---|---|---|---|---|---|---|---|
| 2006-2007 | 163.21 | 2982.01 | 0.05 | 154.8 | 163.21 | 0.95 | 0.05 |
| 2007-2008 | 317.07 | 3984.97 | 0.08 | 413.05 | 317.07 | 1.30 | 0.10 |
| 2008-2009 | 1327.35 | 5958.19 | 0.22 | 1561.3 | 1327.35 | 1.18 | 0.26 |
| 2009-2010 | 582.7 | 6661.83 | 0.09 | 779.99 | 582.7 | 1.34 | 0.12 |
| 2010-2011 | 758 | 7357.5 | 0.10 | 970.2 | 758 | 1.28 | 0.13 |
| 2011-2012 | 1088.5 | 8361 | 0.13 | 1342.5 | 1088.5 | 1.23 | 0.16 |
| 2012-2013 | 3493.6 | 8219.7 | 0.43 | 1910 | 3493.6 | 0.55 | 0.23 |
| 2013-2014 | 3250.8 | 9533.6 | 0.34 | 2265 | 3250.8 | 0.70 | 0.24 |
| 2014-2015 | 2719.5 | 12001.4 | 0.23 | 2773 | 2719.5 | 1.02 | 0.23 |
| 2015-2016 | 2431.1 | 13470.3 | 0.18 | 3007.8 | 2431.1 | 1.24 | 0.22 |
| MEAN | 1613.18 | 7853.05 | 0.19 | 1517.76 | 1613.18 | 1.08 | 0.18 |
| STD.DEV | 1249.14 | 3264.68 | 0.12 | 969.70 | 1249.14 | 0.27 | 0.07 |

**Interpretation**

From the above table ROI is reveals that mean value is 0.18, Std. dev is 0.07.

**Conclusion**

In this article to 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. From the above analysis it is found that Cipla pharmaceutical ROE and ROI has highest returns on equity and Investment by 34.18 and 0.19 followed by Dr. Reddy's Laboratories ROE is 25.43and ROI is 0.18. The company profitability for most investors is a landmark in terms of earnings they could obtain by placing capital. Profits earned by a company, 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. ROE & ROI 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

**References**


1. Griffin JJ, Mahon JF. The corporate social performance and corporate financial performance debate, Business and Society 1997; 36(1):5-31.
2. De Wet JHVH, du Toit E. Return on equity: A popular, but flawed measure of corporate financial performance, S. Afr. J Bus Manage. 2007; 38(1):59-69.
3. McClure B. ROA and ROE Give Clear Picture o Corporate Health http://www.investopedia.com/articles/basics/05/052005
4. McClure B. ROA and ROE Give Clear Picture o Corporate Health http://www.investopedia.com/articles/basics/05/052005.
5. Oster young J, Constand R. Financial ratios in large public and small private firms, Journal of Small Business Management. 1992, 35-47.