



An evaluation of financial performance analysis in selected Indian biotech companies

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Abstract

Being the world's third-largest industry by volume and thirteenth largest in terms of value, Indian Pharmaceutical industry is likely to become leader in manufacturing soon. In past 30 years Indian pharmaceutical industry has emerged as one of the major leader in drug production from almost nothing. Earlier multinational companies used to import drugs either in fully formulated or bulk form. The credit for this steep curve in development can be given to the twin benefit, firstly the increase in domestic consumption capacity of India and secondly to the various export opportunities available in India. It is one of the major contributors to Indian economy with a growth percentage of 7-8%. Indian pharmaceutical industry is expected to outperform the global pharmaceutical industry expected to grow at 5% per annum as it is assumed to grow at 15 per cent per annum between 2015 and 2020. Indian industry is expected to grow to US \$ 55 billion by 2020. In this paper we are going to discuss about Du point analysis on 3 leading companies in the pharmaceutical industry in India. Starting with Biocon Ltd, Jubliant Life Scinces Ltd and Panacea Biotech Ltd.

Keywords: biotech, ROA, finance, evaluation

1. Introduction

Being the world's third-largest industry by volume and thirteenth largest in terms of value, Indian Pharmaceutical industry is likely to become leader in manufacturing soon. In past 30 years Indian Biotech industry has emerged as one of the major leader in drug production from almost nothing. Earlier multinational companies used to import drugs either in fully formulated or bulk form. The credit for this steep curve in development can be given to the twin benefit, firstly the increase in domestic consumption capacity of India and secondly to the various export opportunities available in India. It is one of the major contributors to Indian economy with a growth percentage of 7-8%. Indian pharmaceutical industry is expected to outperform the global pharmaceutical industry expected to grow at 5% per annum as it is assumed to grow at 15 per cent per annum between 2015 and 2020. Indian industry is expected to grow to US \$ 55 billion by 2020.

In this paper we are going to discuss about Du point analysis on 12 leading companies in the pharmaceutical industry in India. Starting with Sun pharma, one of the leading company in India having highest assets, we extend our discussion to Biocon Ltd, Jubliant Life Scinces Ltd and Panacea Biotech Ltd. Literature Review

Du Pont model was created by F. Donaldson Brown in early 1900s for the assessment of company's profitability (Sheela and Karthikeyan, 2012). Du Pont impacts both profitability and efficiency of any firm. Brown developed a mathematical relationship between profitability and return on equity (ROE) which was determined by return on assets (ROA) that is $(\text{Net Income} / \text{Sales}) \times (\text{Sales} / \text{Total Assets}) = (\text{Net Income} / \text{Total Assets})$ i.e. ROA

Initially, maximizing ROA was a common goal of every corporate firms and then the realization that ROA was impacted by both profitability and efficiency led to the development of a system which control all operating

decisions of a firm. (Blumenthal, 1998). The first modification in Du Pont model shifts the focus from ROA to ROE which makes the model as very powerful tool for decision making within any firm. The latest modification in Du Pont model includes five combinations to find out ROE (Collier, Mc Gowan and Muhammad, 2006).

Du Pont analysis takes into account three indicators to measure firm profitability: ROA, ROE and ROI. Du Pont analysis is based on return on equity, with the components of this ratio being the net profit margin, the total asset turnover and the equity multiplier (McGowan and Stambaugh, 2012). Du Pont analysis is a common form of financial statement analysis which divide return on net operating assets into two multiplicative components: profit margin and asset turnover (B. McClure). These two accounting ratios measure different aspects and have different properties. Prior research has found that a change in asset turnover is positively related to future changes in earnings (M. Soliman). It contributes on sell-side analyst use of accounting information. Demmer did a literature review on Du Pont parts for predicting firm's future profitability, operating income and relevant information on return on future assets (2015). According to Demmer, accounting system influences both market reaction and future profitability.

For the evaluation of performance reports of companies and also for making significant decisions within any firm, profitability, assets, liabilities and equities are significant ways (Blessing and Onoja). Prendergast illustrates how a "modified Du Pont approach to ratio analysis can be used to drill down to the true cause of financial performance problems" in a small manufacturing business. S. Christina Sheela and Dr. K. Karthikeyan illustrate "Financial Performance of Pharmaceutical Industry in India using DuPont Analysis" and concluded that Cipla pharmaceuticals financial performance is high followed by Dr. Reddy's

Laboratories and then Ranbaxy Pharmaceutical. Saunders (2000) provides a model of financial analysis for financial institutions based on the DuPont system of financial analysis return on equity model and return on investment model.

Debasish Sur and Kaushik Chakraborty (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 in the world. He did his comparative analysis of 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.

2. Accounting Principles

Key Financial Ratios Used

- a. **Efficiency ratios:** Speed with which certain accounts are converted into sales or cash
 Total Asset Turnover: $\text{Net Sales} / \text{Total Assets}$
- b. **Solvency ratios:** Capability of a firm to meet its long-term debts
 Interest Coverage ratio: $\text{EBIT} / \text{Interest expenses}$
 Debt to equity ratio: $\text{Long term debt} / \text{Total equity}$
- c. **Profitability ratios:** Assess a business's ability to generate earnings compared to its expenses and other relevant costs incurred during a specific period of time
 Profit Margin: $\text{Profit after tax} / \text{Net Sales}$
 Return on Equity: $\text{Net Income} / \text{Average shareholders' equity}$
 Operating Profit Margin: $\text{EBIT} / \text{Net Sales}$

DuPont Analysis

Return on equity (ROE) is a closely-watched number among knowledgeable investors. It is a strong measure of how well a company's management creates value for its shareholders. The number can be misleading, however, as it is vulnerable to measures that increase its value while also making the stock riskier. Without a way of breaking down ROE components, investors could be duped into believing a company is a good investment when it's not. If ROE goes up, it is generally a good sign for the company as it is showing that the rate of return on the shareholders' equity is rising. The problem is that this number can also rise simply when the company takes on more debt, thereby decreasing shareholder equity. This would increase the company's leverage, which could be a good thing, but it will also make the stock riskier.

Both the three- and five-step equations provide deeper understanding of a company's ROE by examining what is really changing in a company rather than looking at one simple ratio. As always with financial statement ratios, they should be examined against the company's history and its competitors.

Three Point Analysis: The three-step equation breaks up ROE into three very important components

- Operating efficiency: As measured by profit margin
- Asset use efficiency: As measured by total asset turnover
- Financial leverage: As measured by the equity

$$\begin{aligned} \text{multiplier ROE} &= (\text{net profit margin}) * (\text{asset turnover}) * \\ &(\text{equity multiplier}) \\ &= (\text{net income} / \text{sales}) * (\text{sales} / \text{assets}) * (\text{assets} / \\ &\text{shareholders' equity}) \end{aligned}$$

If a company's ROE goes up due to an increase in the net profit margin or asset turnover, this is a very positive sign for the company. However, if the equity multiplier is the source of the rise, and the company was already appropriately leveraged, this is simply making things riskier. If the company is getting over-leveraged, the stock might deserve more of a discount despite the rise in ROE. The company could be under-leveraged as well. In this case it could be positive and show that the company is managing itself better. Even if a company's ROE has remained unchanged, examination in this way can be very helpful. Suppose a company releases numbers and ROE is unchanged. Examination with DuPont analysis could show that both net profit margin and asset turnover decreased, two negative signs for the company, and the only reason ROE stayed the same was a large increase in leverage. No matter what the initial situation of the company, this would be a bad sign.

Five Point Analysis: The five-step, or extended, DuPont equation breaks down net profit margin further. From the three-step equation we saw that, in general, rises in the net profit margin, asset turnover and leverage will increase ROE. The five-step equation shows that increases in leverage don't always indicate an increase in ROE.

$$\text{ROE} = [(\text{operating profit margin}) * (\text{asset turnover}) - (\text{interest expense rate})] * (\text{equity multiplier}) * (\text{tax retention rate})$$

For example, when looking at two peer companies, one may have a lower ROE. With the five-step equation, you can see if this is lower because: creditors perceive the company as riskier and charge it higher interest, the company is poorly managed and has leverage that is too low, or the company has higher costs that decrease its operating profit margin. Identifying sources like these leads to better knowledge of the company and how it should be valued.

3. Research Methodology

Problem Statement

The development of industries depends on several factors such as finance, personnel, technology, quality of the product and marketing. Out of these, financial and operating aspects assume a significant role in determining the growth of industries. All of the company's operations virtually affect its need for cash. Most of the data covering operational areas are however outside the direct responsibility of the financial executive. Unless the top management appreciates the value of a good financial and operating analysis, there will be continuing problems for the financial executives to find the profitability position of the concern.

In this context the researcher is interested in undertaking an analysis to find the financial performance of Pharmaceutical Industry and comparing the Return on Equity values using the data with those computed using DuPont's three point and five-point analysis.

The study covers a period of five years from the financial

year 2007-08 to 2016-17.

Objective of the Study

The following are the specific objectives of the study

- To study growth and development of Indian Biotech industry.
- To analyze the profitability position of selected biotech Companies in India by comparing their Return on Equity values.
- To analyze the factors influencing Return on Equity using DuPont's three-point and five-point analysis.

4. Statistics & Analysis

Return on Equity

The ROE Data for the 12 major pharmaceutical companies in India has been given in Table 1 and the same data has also been represented graphically. From the graph, it is clear that Divis Laboratories & Torrent Pharmaceuticals Ltd. have the maximum Mean ROE and it seems from the data that their shareholders are making the maximum profits. Surprisingly, Sun pharma, *Biocon Ltd*, *Jubliant Life Sciences Ltd* and *Panacea Biotech Ltd*. which has the highest assets amongst all Indian pharmaceutical companies, has the lowest Mean ROE and as evident from Table 1, their ROE value has been negative for the last few years. Also, except for Torrent Pharmaceuticals and *Biocon Ltd*, *Jubliant Life Sciences Ltd* and *Panacea Biotech Ltd.*, all other pharmaceutical companies in India have been witnessing a decline in their ROE values. Since ROE data may be deceiving as such, we'll look at the various components of ROE using DuPont's three-point and five-point analysis.

Table 1: Return on Equity (ROE)

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 44.0 | 26.6 | 8.6 |
| 2017 | 46.4 | 32.4 | 14.9 |
| 2016 | 49.6 | 33.7 | 14.7 |
| 2015 | 32.2 | 18.3 | 13.4 |
| 2014 | 27.3 | -1.7 | 13.2 |
| 2013 | 23.7 | 26.5 | 27.3 |
| 2012 | 17.4 | 32.4 | 17.5 |
| 2011 | 14.9 | 9.8 | 8.5 |
| 2010 | 14.0 | 27.1 | 39.4 |
| 2009 | 11.9 | 25.0 | 18.6 |
| Mean | 28.1 | 23.0 | 17.6 |

Source: BSE Data

DuPont's Three Point Analysis

Using DuPont's three-point analysis as explained above, we have broken down ROE into 3 components namely net profit margin, asset turnover ratio & equity multiplier.

Net Profit Margin

The PATM (Profit after Tax Margin) or the Net Profit Margin data for the 12 major pharmaceutical companies in India has been given in Table 2. The graph shows that Mean Net Profit Margin is highest for Divis Laboratories Ltd. which is a good sign and it seems that the company's management is working hard and has been successfully maximizing its shareholder's profits. But a deeper analysis shows that Divis Laboratories' Net Profit Margin has actually been decreasing over the years. Sun pharma has been witnessing negative Net Profit Margin for the last three years which seems to be the main reason behind its low

ROE. Torrent Pharmaceuticals has been growing very rapidly and so is their Net Profit margin. The same also reflects in their recent ROE values.

Table 2: Net Profit Margin

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 26.81 | 17.37 | 15.78 |
| 2017 | 22.40 | 18.39 | 15.88 |
| 2016 | 19.76 | 16.12 | 14.49 |
| 2015 | 11.96 | 8.91 | 13.90 |
| 2014 | 10.86 | -0.97 | 15.92 |
| 2013 | 10.03 | 14.04 | 28.70 |
| 2012 | 7.41 | 15.77 | 20.82 |
| 2011 | 6.63 | 4.33 | 11.92 |
| 2010 | 6.10 | 12.37 | 48.13 |
| 2009 | 5.55 | 11.57 | 17.85 |
| Mean | 12.75 | 11.79 | 20.34 |

Source: BSE Data

Asset turnover ratio

The Asset Turnover ratio for the 12 major pharmaceutical companies in India has been given in Table 3. Obviously, higher the value of Asset Turnover Ratio, more efficient is the company in converting its assets to sales. Biocon. has the highest Mean Asset Turnover Ratio and has in fact been consistently leading amongst all the major Indian pharmaceutical companies.

Table 3: Asset Turnover Ratio

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 1.26 | 0.84 | 0.45 |
| 2017 | 1.39 | 0.88 | 0.69 |
| 2016 | 1.44 | 0.94 | 0.72 |
| 2015 | 1.31 | 0.87 | 0.68 |
| 2014 | 1.12 | 0.74 | 0.59 |
| 2013 | 0.99 | 0.81 | 0.66 |
| 2012 | 0.85 | 0.76 | 0.58 |
| 2011 | 0.82 | 0.76 | 0.52 |
| 2010 | 0.96 | 0.69 | 0.59 |
| 2009 | 1.04 | 0.68 | 0.72 |
| Mean | 1.12 | 0.80 | 0.62 |

Source: BSE Data

Equity Multiplier

The equity multiplier or the financial leverage, defined as Total Assets divided by the Total Equity, for the 3 major pharmaceutical companies in India has been calculated from the respective balance sheets by dividing Total Assets by Total Debt and multiplying it with the debt to equity ratio and the same has been given in Table 4. The equity multiplier is indicative of the risk that the company has taken in terms of debt and is of particular interest to investors who wish to analyze the risks accompanying their investments and helps them take more informed decisions. From the shareholders' perspective, a higher equity multiplier is a good thing as it means increased assets for their same investment. From the perspective of the investors, however, higher equity multiplier means higher financial leverage and riskier financial status. From the graph, we can see. have the highest value of equity multiplier, much more than the rest of the companies. This is also a contributor in the increasing ROE value of Torrent Pharmaceuticals which implies that even though the shareholders seem to have maximized their profits, the high

gains are at the cost of high risk associated with the debt that the company has been taking.

Table 4: Equity Multiplier

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 1.09 | 1.63 | 0.21 |
| 2017 | 1.43 | 1.78 | 0.18 |
| 2016 | 1.75 | 1.84 | 0.35 |
| 2015 | 2.00 | 2.00 | 1.03 |
| 2014 | 2.28 | 2.26 | 1.17 |
| 2013 | 2.01 | 2.19 | 0.97 |
| 2012 | 2.51 | 2.26 | 0.73 |
| 2011 | 2.90 | 2.90 | 0.60 |
| 2010 | 2.53 | 2.83 | 0.91 |
| 2009 | 2.01 | 3.59 | 0.98 |
| Mean | 2.05 | 2.33 | 0.71 |

Source: BSE Data

Return on Equity using DuPont’s 3-point analysis:

ROE has been calculating the 3-point formula by multiplying the respective data from Table 2, Table 3 & Table 4 and has been shown in Table 5. The calculated Mean ROE values coincides with those obtained directly from the data. Torrent Pharmaceuticals still has the maximum Mean ROE while Sun Pharma has the lowest. been some variations if we see the individual entries in Table 5. One explanation is the possible variation in Equity Multiplier since it has been calculated using Total Assets and Total Debt from the Balance Sheet which may be different from the Debt to Equity ratio or the Asset Turnover ratio which have been directly picked up from the data.

Table 5: ROE using DuPont's 3-point analysis

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 36.86 | 23.81 | 1.47 |
| 2017 | 44.51 | 28.67 | 2.01 |
| 2016 | 49.73 | 27.94 | 3.66 |
| 2015 | 31.30 | 15.51 | 9.75 |
| 2014 | 27.78 | -1.62 | 11.01 |
| 2013 | 20.04 | 24.95 | 18.32 |
| 2012 | 15.83 | 27.20 | 8.75 |
| 2011 | 15.69 | 9.54 | 3.69 |
| 2010 | 14.83 | 24.16 | 25.90 |
| 2009 | 11.62 | 28.35 | 12.66 |
| Mean | 26.82 | 20.85 | 9.72 |

Source: BSE Data

Using DuPont’s five-point analysis as explained above, we have broken down ROE into 5 components namely operating profit margin, tax retention rate, interest expense rate, asset turnover ratio & equity multiplier. Asset turnover ratio and Equity multiplier ratio data have already been listed in Table 3 and Table 4 respectively.

Operating Profit Margin

Operating profit or the Earnings before interest & tax margin (EBITM) data for the 12 major pharmaceutical companies in India has been given in Table 6. Since EBITM doesn’t include interest and tax deduction, it gives a more

meaningful idea of the company’s expenditure and is a better parameter if we are to judge whether the company is able to get enough revenue considering its actual operating

Table 6: Operating Profit Margin

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 36.02 | 25.41 | 24.03 |
| 2017 | 32.89 | 25.14 | 18.87 |
| 2016 | 28.75 | 24.88 | 18.29 |
| 2015 | 21.53 | 14.60 | 17.56 |
| 2014 | 15.31 | 2.96 | 19.07 |
| 2013 | 14.56 | 20.34 | 32.38 |
| 2012 | 13.70 | 23.28 | 23.32 |
| 2011 | 14.88 | 8.26 | 13.55 |
| 2010 | 13.62 | 17.18 | 49.63 |
| 2009 | 12.11 | 15.52 | 20.20 |
| Mean | 20.34 | 17.76 | 23.69 |

Source: BSE Data

Tax retention rate

Tax retention rate is calculated from the Balance Sheet using the Tax rate (Tax retention rate = 1 – tax rate) and has been given in Table 7. The tax retention rate is more or less constant for all the companies. Even across companies, the tax retention rate doesn’t vary much.

Table 7: Tax Retention Rate

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 0.75 | 0.76 | 0.66 |
| 2017 | 0.69 | 0.78 | 0.84 |
| 2016 | 0.71 | 0.77 | 0.79 |
| 2015 | 0.62 | 0.88 | 0.79 |
| 2014 | 0.83 | 0.31 | 0.84 |
| 2013 | 0.90 | 0.74 | 0.89 |
| 2012 | 0.85 | 0.74 | 0.90 |
| 2011 | 0.82 | 0.80 | 0.91 |
| 2010 | 0.72 | 0.84 | 0.98 |
| 2009 | 0.75 | 0.99 | 0.93 |
| Mean | 0.76 | 0.76 | 0.85 |

Source: BSE Data

Interest expense rate

Interest expense rate is calculated by dividing the product of Asset Turnover Ratio and EBITM by Interest Coverage Ratio to obtain Interest / Assets and has been given in Table 8. The interest expense rate clearly indicates the company’s indebtness. It might also indicate the financial stability of the company as a lower interest may also be possible simply because the company is able to get loan at a low interest rate because the investors trust the company’s management and are eager to invest. From the graph, which has consistently been having a very low interest expense value and also one of the lowest equity multiplier is clearly very safe from investor’s perspective since they have been maintaining a low Debt to Equity ratio. This, however, might not be a very smart thing to do as this has resulted in a lower value of ROE and thus GSK is not able to generate high enough profits for its shareholders and should in fact leverage its

stability to gain debt and maximize ROE

Table 8: Interest Expense Rate

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 0.34 | 2.07 | 0.04 |
| 2017 | 0.51 | 1.41 | 0.02 |
| 2016 | 1.06 | 3.75 | 0.03 |
| 2015 | 2.86 | 3.90 | 0.04 |
| 2014 | 2.57 | 4.52 | 0.06 |
| 2013 | 3.40 | 1.05 | 0.04 |
| 2012 | 4.21 | 1.44 | 0.10 |
| 2011 | 5.58 | 2.14 | 0.27 |
| 2010 | 4.97 | 1.73 | 0.19 |
| 2009 | 4.88 | 2.62 | 0.66 |
| Mean | 3.04 | 2.46 | 0.15 |

Source: BSE Data

Return on Equity using DuPont’s 5-point analysis

ROE has been calculated using the 5-point formula by multiplying the respective data from Table 3, Table 4, Table 6, Table 7 & Table 8 and has been shown in Table 9. The calculated Mean ROE values using the five point analysis also coincides with those obtained directly from the data. Since the individual values coincide with those obtained from three-point analysis, the variations in individual entries in Table 9 can also be attributed to variation in Equity Multiplier since it has been calculated using Total Assets and Total Debt from the Balance Sheet which may be different from the Debt to Equity ratio or the Asset Turnover ratio which have been directly picked up from data.

Table 9: ROE using DuPont's 5. point analysis

| Year | Jubliant Life Sciences Ltd | Panacea Biotech Ltd | Biocon |
|------|----------------------------|---------------------|--------|
| 2018 | 36.86 | 23.81 | 1.47 |
| 2017 | 44.51 | 28.67 | 2.01 |
| 2016 | 49.73 | 27.94 | 3.66 |
| 2015 | 31.30 | 15.51 | 9.75 |
| 2014 | 27.78 | -1.62 | 11.01 |
| 2013 | 20.04 | 24.95 | 18.32 |
| 2012 | 15.83 | 27.20 | 8.75 |
| 2011 | 15.69 | 9.54 | 3.69 |
| 2010 | 14.83 | 24.16 | 25.90 |
| 2009 | 11.62 | 28.35 | 12.66 |
| Mean | 26.82 | 20.85 | 9.72 |

Source: BSE Data

6. Conclusion

On the basis of above discussion, it is safe to conclude that is the most profitable for its shareholders while is the least profitable on the basis of Return on Equity. Moreover, the growth in ROE value been tremendous. The three-point analysis had raised the possibility of risky from the investors perspective and thus indicated possibility of investors being uninterested in investing / giving loan to but the five-point analysis eliminates this possibility, owing to the 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 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. They should not, however, take loans as that might put them into a very risky situation. Also, the coinciding curves for Return on Equity from the data as well as the calculated values from DuPont’s three- point and five point analyses further verify their correctness and aptness of their application in the given context.

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