Report for the Ph.D. thesis titled

“A Study of Economic Value Added Based Performance Measurement of Selected Pharmaceutical Industry in India”

I have gone through the content of thesis written by Mr Falgun Patel (UID no.: U41000011510), batch 2014-15. Below is detailed observations of mine as a guide.

Chapter-1 : Introduction

Research scholar had provided detailed description of concept of financial management, financial performance and Economic Value Added (EVA). Advantages and Disadvantages of EVA are also discussed in detail in present chapter. Profile of selected pharmaceutical industries is also given at the end of chapter.

Chapter – 2 : Review of Literature :

This chapter deals the review of various literatures available in hard / soft copy at different sources like research journals, books and websites (internet) and presented in own way to grasp the research in detail.

Chapter – 3 : Research Methodology

Objectives and hypothesis of the research study are discussed here with detail description of universe (study population), sampling frame, sampling plan, data collection method and broad idea about analysis of collected data.

Details of methodology is as follows :

**Aim**

The aim of the present study is to study the performance of selected pharmaceutical industries using Return on Investment (ROI) and Economic Value Added (EVA).

**Objectives**

Following are the objectives for present study :

- To study ability of selected pharmaceutical industries in generating value for their shareholders.
• To evaluate performance of selected pharmaceutical industries using Return of Investment (ROI).
• To evaluate performance of selected pharmaceutical industries using Economic Value Added (EVA).
• To compare performance of selected pharmaceutical industries using ROI and EVA.
• To study overall performance of selected pharmaceutical industries.
• To study limitation in implementation of EVA.
• To provide suggestions for improving financial performance on the basis of analysis through EVA.

**Research Design**

The research design is the plan to be followed in order to realize the research objectives or hypothesis. It represents the master plan that specifies the methods and procedures for collecting and analyzing the required information. This study uses a descriptive (analytical) study design on the basis of secondary data collected from Bombay Stock Exchange (BSE) website. The purpose of descriptive study design is to answer the questions who, what, where, when and why. Frequency, average and other statistical calculations are used to describe the observations. This study is used to obtain information concerning the current status of the phenomena to describe what exists with respect to variables or conditions in a situation. The purpose of descriptive study is to collect detailed and factual information that describes an existing phenomenon.

**Sampling**

**Target Population:**

The target population of the study is all large scale pharmaceutical industries in India.

**Sampling Technique:**

The study applied “Simple Random Sampling Method”. A Simple Random Sampling method utilizes random number as a selection criteria. The sampling population in the present study is all pharmaceutical industries which are listed in BSE with Grade-A (large scale). The random sample ensures that all pharmaceutical industries have given a fair and equal chance of being selected in the study.
Sample Size:

For the present study, researcher has taken 10 large scale (Group-A) pharmaceutical industries from BSE website. The list of selected pharmaceutical industries is given below:

**List of selected Pharmaceutical Industries:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Pharmaceutical Industry</th>
<th>BSE Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CIPLA LTD</td>
<td>CIPLA</td>
</tr>
<tr>
<td>2</td>
<td>SUN PHARMACEUTIAL INDUSTRIES LTD</td>
<td>SUNPHARMA</td>
</tr>
<tr>
<td>3</td>
<td>BIOCON LTD</td>
<td>BIOCON</td>
</tr>
<tr>
<td>4</td>
<td>DR. REDDY'S LABORATORIES LTD</td>
<td>DRREDDY</td>
</tr>
<tr>
<td>5</td>
<td>CADILA HEALTHCARE LTD</td>
<td>CADILAHC</td>
</tr>
<tr>
<td>6</td>
<td>GLENMARK PHARMACEUTICALS LTD</td>
<td>GLENMARK</td>
</tr>
<tr>
<td>7</td>
<td>TORRENT PHARMACEUTICALS LTD</td>
<td>TORNTPHARM</td>
</tr>
<tr>
<td>8</td>
<td>GLAXO SMITHKLINE PHARMACEUTICALS LTD</td>
<td>GLAXO</td>
</tr>
<tr>
<td>9</td>
<td>AUROBINDO PHARMA LTD</td>
<td>AUROPHARMA</td>
</tr>
<tr>
<td>10</td>
<td>LUPIN LTD</td>
<td>LUPIN</td>
</tr>
</tbody>
</table>

Secondary record in form of balance sheet and profit & loss statement of each selected pharmaceutical industries will gathered from annual reports available on BSE web site. On BSE website annual reports are given for financial year 2009-10 to 2016-17. Hence in present study secondary data of last eight years for each selected industry will be taken. As on BSE India website, last eight years of annual reports were available, in present study was carried out on ten pharma companies with their last eight years annual reports.
Hypothesis

H_{01}: There is no significant difference in Total Equity between selected pharmaceutical companies

H_{11}: There is significant difference in Total Equity between selected pharmaceutical companies

H_{02}: There is no significant difference in Total Assets between selected pharmaceutical companies

H_{12}: There is significant difference in Total Assets between selected pharmaceutical companies

H_{03}: There is no significant difference in Total Liabilities between selected pharmaceutical companies

H_{13}: There is significant difference in Total Liabilities between selected pharmaceutical companies

H_{04}: There is no significant difference in Net Income After Tax between selected pharmaceutical companies

H_{14}: There is significant difference in Net Income After Tax between selected pharmaceutical companies

H_{05}: There is no significant difference in Net Income Before Tax between selected pharmaceutical companies

H_{15}: There is significant difference in Net Income Before Tax between selected pharmaceutical companies

H_{06}: There is no significant difference in Return on Investment (ROI) between selected pharmaceutical companies
H_{16}: There is significant difference in Return on Investment (ROI) between selected pharmaceutical companies

H_{07}: There is no significant difference in mean Economic Value Added (EVA) between selected pharmaceutical companies

H_{17}: There is significant difference in mean Economic Value Added (EVA) between selected pharmaceutical companies

H_{08}: There is no significant difference in mean Net Profit Margin between selected pharmaceutical companies

H_{18}: There is significant difference in mean Net Profit Margin between selected pharmaceutical companies

H_{09}: There is no significant difference in mean Return on Capital Employed (ROCE) between selected pharmaceutical companies

H_{19}: There is significant difference in mean Return on Capital Employed (ROCE) between selected pharmaceutical companies

H_{010}: There is no significant difference in mean Debt Equity Ratio between selected pharmaceutical companies

H_{110}: There is significant difference in mean Debt Equity Ratio between selected pharmaceutical companies

H_{011}: There is no significant difference in mean Asset Turnover Ratio between selected pharmaceutical companies

H_{111}: There is significant difference in mean Asset Turnover Ratio between selected pharmaceutical companies

H_{012}: There is no significant difference in mean Current Ratio between selected pharmaceutical companies
H_{112} : There is significant difference in mean Current Ratio between selected pharmaceutical companies

H_{013} : There is no significant difference in mean Quick Ratio between selected pharmaceutical companies

H_{113} : There is significant difference in mean Quick Ratio between selected pharmaceutical companies

H_{014} : There is no significant difference in mean Inventory Turnover Ratio between selected pharmaceutical companies

H_{114} : There is significant difference in mean Inventory Turnover Ratio between selected pharmaceutical companies

H_{015} : There is no significant difference in mean Dividend Payout Ratio between selected pharmaceutical companies

H_{115} : There is significant difference in mean Dividend Payout Ratio between selected pharmaceutical companies

H_{016} : There is no significant relation between EVA and ROI of selected pharmaceutical companies

H_{116} : There is significant relation between EVA and ROI of selected pharmaceutical companies
**Research Instrument**

In this research secondary data derived from annual reports of selected pharmaceutical industries were used. Various rates and ratios will be obtained from information given in annual reports.

**Type of Variables**

Researchers manipulate variables in order to test hypothesis and learn more about the factors or conditions that are changing during the course of an investigation. There are two types of variables in this study:

a) **Independent Variables**: Total Debt Ratio and Debt-Equity Ratio are considered as independent variables.

b) **Dependent Variables**: Economic Value Added (EVA), EVA to Capital Employed Ratio are considered as dependent variables.

**Computation of EVA**

Computation of EVA involves calculation of three figures...

1) Net Operating Profit Before Interest After Tax (NOPAT)

2) Capital Employed and

3) Weighted Average Cost of Capital (WACC) based on CAOM.

To compute market return long run averaged annualized daily return has been considered. The long run period should represent all cycles and abnormalities of the capital market.

Economic Value Added (EVA) = NOPAT – WACC X Capital Employed

where, Capital Employed = Net Block + Trading Investment + Net Current Assets

OR

Capital Employed = Total Assets – Current Liability

Return on Investment (ROI) = Net Profit / Total Investment X 100
Due to above reasons, researcher has decided to do a in-depth study and collect evidence to conclude which method of financial performance is better among ROI and EVA. Importance of present study is as follows:

- EVA acts as performance measure which is linked to shareholder value creation in all directions.
- It is useful in providing business knowledge to everyone.
- It is an efficient method for communicating to investors.
- It transforms the accounting information into economic quality which can be easily understood by non-financial managers.
- It is useful in evaluating Net Present Value (NPV) of projects in capital budgeting which is contradictory to IRR.
- Instead of writing value of firm in terms of discounted flow, it can be expressed in terms of EVA of project.

Chapter – 4: Observations and Results

This chapter deals with the data analysis using various statistical methods like trend analysis, hypothesis testing and interpretation of the statistical outcome. Descriptive statistics like Mean, Standard Deviation (SD) and Indices were obtained from given data. Paired t-test, One Way ANOVA test and Trend Analysis were employed to analyze the data. Trend analysis was presented in form of line diagrams. Data analysis was carried out with the help of MS Excel and statistical software “STATA/MP”. For each statistical test, corresponding p-values were obtained and on the basis of that, the last conclusion for rejection / acceptance of the particular hypothesis will be made. Researcher has put the level of significance (l.o.s.) at 5%. i.e. if the p-value is less than 0.05, reject the hypothesis otherwise accept it.

Present study was planned to study performance measurement of selected pharmaceutical industries in India using Economic Value Added (EVA). Total ten Group – A pharmaceutical industries. Secondary data related to selected companies were collected from annual reports of financial years 2009-10 to 2016-17. Annual reports and other related information were taken from official web site of Bombay Stock Exchange (BSE India). Following are major findings obtained from present study.
Chapter – 5 : Findings, Conclusion and Suggestions

Gross findings for each selected pharmaceutical company are provided along with overall conclusion on the basis of data analysis. Suggestions are also made for selected companies to get better financial performance in future. Overall conclusion of the study is as follows:

- EVA of Aurobindo Pharmaceuticals Ltd, Dr Reddy’s Laboratories Ltd, Lupin Ltd and Torrent Pharmaceuticals are highest which means these companies financial performance are better as compared to other selected companies.

- Net profit margin of Lupin Ltd, Cadila Ltd and Biocon Ltd were better which shows better profitability of these companies. As the statistical significance was not proved, all selected companies are having almost equal profitability. Return on capital employed is better for GSK Ltd, Lupin Ltd and Cadila Ltd. Hence the companies show greater performance of their assets.

- Trend of ROI and EVA for all selected pharmaceutical industries. Overall it can be seen that there is reverse correlation. It means the trend of ROI and EVA is reverse for majority of the industries. Only in Biocon Ltd and Sun Pharmaceutical Industries showed decreasing trend for both ROI and EVA. Biocon Ltd shows decreasing trend for all profitability ratios whereas Cadila shows decreasing trend for all ratios except total debt equity. AuroPharma, Glenmark Ltd, Lupin Ltd and Torrent Ltd showed increasing trend in ROCE. Except Sunpharma Ltd, Cadila and Torrent, all pharmaceutical industries showed increasing trend in asset turnover ratio.

- Auropharma Ltd and Torrent Ltd showed flat trend for current ratio and quick ratio whereas Biocon, Dr Reddy’s Ltd and Lupin showed increasing in both ratios. Inventory turnover ratio showed increasing trend for Auropharma Ltd, Biocon Ltd, whereas GSK Ltd showed flat trend. Dividend payout ratio showed increasing trend for Auropharma Ltd, Cadila Ltd and GSK Ltd whereas for Biocon Ltd, Cipla Ltd, Glenmark Ltd, Lupin Ltd, Sunpharma Ltd showed decreasing trend.

Suggestions :

- Almost all selected pharma companies are showing increasing trend in their total equity, total assets and total liabilities. With increase in total equity and assets, total liabilities also increases for all selected companies. It nullifies the total income of the
company and the profit become less as compared to income. Companies should try to minimise their liabilities so that income will translated in form of profit.

- Net profit margin of few companies is very less as compared to their income and assets. It gives bad impression on the market value of the company. These companies have to increase their net profit margin level. There is good correlation seen between ROCE and EVA. Thus instead of ROI, ROCE and EVA should be consider to study financial performance of the company.

- Debt equity ratio of Aurobindo Pharmaceuticals Ltd shows maximum value which means that the company has big debt in comparison to the equity. Company should take some concrete steps to minimize its debt. Torrent Pharmaceuticals Ltd also shows higher debt equity ratio. It has lower equity as compared to AuroPharmacompany. Hence Torrent has to increase equity and decrease debt so that the ratio will come under one.

- Majority of the companies obtain business units using Return on Investment (ROI) instead of Economic Value Added (EVA). ROI is a comprehensive measure in which any change directly affects financial statements. They have to use EVA as an alternative of ROI.

Benefits of study:

Majority of the companies obtain business units using Return on Investment (ROI) instead of Economic Value Added (EVA). ROI is a comprehensive measure in which any change directly affects financial statements. ROI is a common denominator that may be applied to any organizational unit responsible for profitability, regardless of size or type of business. The performance of different units may be compared directly to one another. ROI data are available for competitors and can be used as a basis for comparison.

I hereby declare that the thesis titled “A Study of Economic Value Added Based Performance Measurement of Selected Pharmaceutical Industry in India” to be submitted by Mr. FalgunkumarLaxmanbhai Patel for the degree of Doctor of Philosophy is his original work and the work has not formed the basis for the award of any degree, diploma, associate-ship or fellowship of similar other titles. It has not been submitted to any other University or Institution for the award of any degree or diploma. His work is satisfactory as per my knowledge and up to the mark for submission thesis for perusing Ph.D. degree in Commerce.