CHAPTER - I

INTRODUCTION AND DESIGN OF THE STUDY

INTRODUCTION

India is emerging as a global manufacturing hub, and it has all the requisites skills in products, process and capital engineering, due to its long manufacturing history and technical education system. In India, skilled man power is cheap and is attracting a number of companies, spanning diverse industries, making India a global manufacturing power and house. India with its vast design skills has attracted a lot of outsourcing technological orders.

According to an analysis carried out by the United Nations Industrial Development Organisation (UNIDO) based on 2007 figures mentioned in the International year book of Industrial Statistics 2009, India ranks top among the 'twelve' major producers of Manufacturing Value Added (MVA) products. In textiles, the country is ranked fourth after China, USA and Italy, while in electrical machinery and apparatus, it is ranked fifth. It holds sixth position in the basic metals category; seventh in chemicals and chemical products; tenth in leather, leather products, refined petroleum products and nuclear fuel, twelfth in machines, equipments and motor vehicles, fifteenth in paper and paper products.

In 1970, India's economic policies have been marked by deregulation, decontrol and progressive liberalization and it assesses the impact of policy reforms on total productivity growth in India’s energy intensive sectors such as Aluminium, Cements, Fertilizer, Iron and Steel, Glass, Paper.

The paper industry is an important one and this millennium is the millennium of knowledge. Hence, demand for paper would go on increasing in times to come. In view of paper industry’s strategic role for the society and also for the overall industrial growth it is necessary that the paper industry should perform well\(^2\). After Globalization, the Government has completely delicensed the paper industry, to enhance the productivity. The entrepreneurs are now required to file an Industrial Entrepreneur Memorandum with the Secretariat for Industrial Assistance for setting up a new paper mill or substantial expansion of existing mill in permissible locations.

The Paper industry is a priority sector for Foreign Collaboration and Foreign Equity Participation. Several fiscal incentives have also been provided to the paper industry, particularly to those which are based on non-conventional raw material.

There are about 1,000 paper mills in India but most of them are having small capacities. In India, a paper mill of 50,000 tonnes p.a or higher capacity

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is recognised as a large mill. There are only 20 companies in India which have the capacity of more than 50,000 tonnes p.a. The large mills account for only 35% of the total production of paper. The setting up of large paper mill in India is not feasible as they find it difficult to procure the main raw material wood, in required quantities.

**Analysis of Financial Performance**

Finance is regarded as the life blood of a business enterprise. It is the basic foundation of all kinds of economic activities. It is the market key which provides access to all the sources for being employed in manufacturing and merchandising activities. So, efficient management of every business firms is closely linked with efficient management of finances. The financial management is concerned with the proper management of funds. The finance manager must see that the funds are procured in a manner that the risk, cost and control considerations are properly balanced in a given situations and there is optimum utilization of funds.

The performance of a company can be analysed in many ways. Financial performance is the operating efficiency of a company in terms of a financial parameter. It can be judged in respect to market place, technology adoption, competitiveness, environmental protection and strategic positioning. The performance in the above areas would be naturally reflected in the

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financial statement of the respective company. By analyzing these financial statements and evaluating the relationship between the various components, a company's financial position and performance could be easily interpreted. The financial efficiency of a company can be measured in terms of solvency, stability, liquidity, capitalization, turnover ability, coverage ability, profitability, leverages, cost of capital and operating cycle.

The efficiency of the business is measured by the amount of profit generated during the financial year. The profit may be measured by studying the profitability of investment in it. The profitability of the business depends on the cost incurred for the production of goods. If the cost increases, the profit of the business is reduced. Moreover, the future development of the company can be designed according to the expenses and investment level. So, the analysis of the cost structure is very important for the manufacturing companies.

Corporate liquidity is another vital factor in business. If sufficient liquidity is not maintained, then the company involved faces the financial embarrassment of renegotiating its obligations to creditors. So, it is important to analyse the liquidity and profitability position of the company.

The survival of the company depends on its performance in the past years. The company having a sound financial position and proper utilization of resources alone will survive and perform well. Today's good performer can

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become sick tomorrow, if proper care is not exercised to evaluate its performance. The quantitative and qualitative financial performance should be closely monitored to avoid industrial sickness and to ensure consistent growth.

SIGNIFICANCE OF THE STUDY

Paper industry is high energy intensive industry. The fortune of paper industry is closely linked to the buoyancy in the economic development of a country. The paper industry provides employment to more than 0.12 million people directly and 0.34 million people indirectly.

The importance of paper and paper products in the modern life is so obvious that no other manufactured products possess such a diversity of use. The study of paper industry is particularly important for two main reasons viz.,

1. In a number of industrializing countries, the paper industry was among the earliest to be established. Since it satisfies basic needs in many of the countries, the industry has subsequently occupied an important position in the economy in terms of its contribution to national output, employment and exports.

2. Poor profitability is another challenge faced by the paper industry. Under capacity utilization, high cost of production, industrial disputes and

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5 http://www.ipma.co.in/paper-industry-overview.asp.
financial management / constraints are the factors that can be attributed to poor profitability of the industry. In future, the healthy development and rapid growth of this industry is very important especially for the Indian economy. Hence, an attempt is made by the researcher to study the financial performance of select large scale paper companies in India.

STATEMENT OF THE PROBLEM

In the knowledge based society, paper plays a crucial role for effective communication especially, in the transformation of information in written form from one person to another. The Government and other authorities accept only the written documents as valid evidences for all the purposes of administration. The written communication has been proved to be effective and authenticated in the legal and official proceedings. In the News and Information broadcasting industry also, print media has been successful from time immemorial. In the field of advertising, despite the introduction of new electronic media and various innovative advertisements, the advertisements through paper have a niche of their own. Paper is also used as a substitute product for polythene which pollutes the environment across the globe. Thus paper is an essential product which plays a crucial role in all walks of life.

The Indian Paper Industry faced turbulent time during the post liberalization era of the economy. As a consequence, trade barriers over the countries were reduced. However, the future of paper industry is governed by
international trends. The performance of the Indian Paper Industry is greatly influenced by global economic factors. Under these circumstances, the paper industry was engulfed in a great crisis due to variety of reasons. Despite the core sector status accorded to the paper industry, it is unfortunate that it is in deep operational and financial crisis. The industry is currently passing through periods of trials and tribulations.

The thin profitability coupled with a weak financial base has made things more difficult for these mills to tide over the current crisis. The crisis is pronounced in Small & Medium paper companies and Large paper companies in most states. Many of the companies are continuously incurring losses and in some of them, the losses have been continuing from their very inception. Unfortunately, in certain cases, the entire net worth has been completely wiped out due to continuous operating losses. A majority of the companies are in perpetual financial crisis and for them securing additional funds is becoming almost impossible.

The financial health of paper companies are severely affected by a plethora of problems such as acute shortage of working capital, uncertainties in availability of raw material, shortage of coal and power, obsolete technology, under-utilisation of capacity, inability to meet interest commitments, non-repayment of loans, non-provision for depreciation, demand recession, absence of effective chemical recovery system, absence of sound infrastructural support, lack of research and development, high cost of
production, and managerial incompetence. These factors ultimately have an adverse impact on profitability and financial health of the companies. This has encouraged the researcher to study the financial performance of select large scale paper companies in India. Based on the above issues, the researcher has probed the following questions.

- How and when did the Indian paper industry originated?
- What could be the trend efficiency of the Paper companies in India?
- What is the Liquidity and Solvency position of the paper companies in India?
- What is the Profitability position of the paper companies in India?
- Are the Financial Health of the paper companies better or not?

**SCOPE OF THE STUDY**

The study aims to make an analysis of financial performance of select large scale paper companies in India. The study have used the financial facts of the selected companies from 1997-98 to 2011-12. The financial performance of the sample companies is evaluated in terms of liquidity, profitability and financial health to its shareholders. The scope of financial performance is very wide and the study is based on accounting information.
OBJECTIVES OF THE STUDY

The following are the main objectives of the study:

➢ To study the profile of the Indian paper industry with a view to discuss their achievement since their inception.
➢ To analyse the cost structure of select large scale paper companies in India.
➢ To measure the liquidity position of select large scale paper companies in India.
➢ To study the profitability position and determinants of the profitability of select large scale paper companies in India.
➢ To assess the financial health of select large scale paper companies in India.

HYPOTHESES OF THE STUDY

To fulfil the objectives of the study, the following hypotheses have been formulated and tested

➢ There is no significant difference between cost structure of sample companies to net sales.
➢ There is no significant difference in the trends of liquidity position of sample companies on the improvement path.
➢ There is no significant difference in the trends of profitability position of selected companies on the improvement path.
METHODOLOGY

Sample Selection

There are 19 large scale paper companies in India. As on 31st March 2012, the Bombay Stock Exchange has declared the list of top 19 large scale paper companies based on their total assets. The list of large scale paper companies in India is furnished in table 1.1

TABLE 1.1

LIST OF PROMINENT PAPER COMPANIES IN INDIA

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andhra Pradesh Paper Mills Limited</td>
</tr>
<tr>
<td>2</td>
<td>Pudumjee Paper Mills Limited</td>
</tr>
<tr>
<td>3</td>
<td>Rama Paper Mills Limited</td>
</tr>
<tr>
<td>4</td>
<td>Seshasayee Paper and Board Limited</td>
</tr>
<tr>
<td>5</td>
<td>Shreyans Paper Mills Limited</td>
</tr>
<tr>
<td>6</td>
<td>Sirpur Paper Mills Limited</td>
</tr>
<tr>
<td>7</td>
<td>Star Paper Mills Limited</td>
</tr>
<tr>
<td>8</td>
<td>Tamil Nadu Newsprint and Papers Limited</td>
</tr>
<tr>
<td>9</td>
<td>West Coast Paper Mills Limited</td>
</tr>
<tr>
<td>10</td>
<td>Orient Paper Mills Limited</td>
</tr>
<tr>
<td>11</td>
<td>Ballarpur Paper Mills Limited</td>
</tr>
<tr>
<td>12</td>
<td>Mysore Paper Mill Limited</td>
</tr>
<tr>
<td>13</td>
<td>J.K Paper Mills Limited</td>
</tr>
<tr>
<td>14</td>
<td>Hindustan Newsprint Limited</td>
</tr>
<tr>
<td>15</td>
<td>Hindustan Paper Corporation Limited</td>
</tr>
<tr>
<td>16</td>
<td>Pudumji Industries Limited</td>
</tr>
<tr>
<td>17</td>
<td>Ruby Macons Limited</td>
</tr>
<tr>
<td>18</td>
<td>Satia Paper Mills Limited</td>
</tr>
<tr>
<td>19</td>
<td>Emami Paper Mills Limited</td>
</tr>
</tbody>
</table>

Source: Bombay Stock Exchange Limited.
The following criteria were used to select paper companies among these 19 companies:

- Those companies which are started before 1997-98.
- Those companies that are continuously functioning till the end of the study period.

Out of large scale paper companies listed, ten companies were excluded from the study for not fulfilling the above mentioned criteria. Hence the remaining nine companies have been considered for the study which is shown in Table 1.2.

<table>
<thead>
<tr>
<th>S. No</th>
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<td>9</td>
<td>West Coast Paper Mills Limited</td>
</tr>
</tbody>
</table>

**PERIOD OF STUDY**

The present study covers a period of 15 years starting from 1997-98 to 2011-12 in order to evaluate the financial performance of select large scale paper companies in India.
**SOURCES OF DATA**

The data used for the present study is secondary data. The required data of the sample companies were collected from the compilation made by the Centre for Monitoring Indian Economy (CMIE) for the period 1997-98 to 2011-2012. Prowess database of CMIE is the most reliable and empowered corporate data base. It contains a highly normalized database built on a sound understanding of disclosures on where over 7,000 companies in India. The database provides financial statements, ratio analysis, fund flows, returns and risk on the stock market. The information has also been collected from the Stock Exchange Official Directory, Centre for Industrial and Economic Research (CIER’S) Industrial Data book, Publications of Indian Pulp and Paper Technical Association (IPPTA) and from official websites of the selected companies. The various journals and periodicals on finance related to the paper industry have also been reviewed.

**FRAME WORK OF ANALYSIS**

To analyse the financial performance of the select large scale paper companies in India, the ratio analysis, statistical tools and models have been applied.
I. RATIO ANALYSIS

Ratio analysis is one of the techniques of financial analysis where ratios are used as a yard stick for evaluating the financial condition and performance of a company. Analysis and interpretation of various accounting ratios gives a skilled and experienced analyst of better understanding of the financial condition and performance of the company. Ratio analysis is regarded as one of the best tools of analysis for comparing the time series accounting data of different firms. Hence, it has been extensively used in present study. Various ratios are computed in order to analyse the liquidity, profitability, short-term, long-term financial strength and its various components that have been explained at the relevant places in the study. However, in this study the use of ratios has not been made in the course of analysis directly. To make the analysis and interpretations more precise and accurate the values of Mean, Standard Deviation and Co-efficient of Variation have been computed from the ratios, that alone have been presented in tabular form.

II. STATISTICAL TOOLS USED

1. Arithmetic mean

Mean is a central tendency representing the arithmetic average of a set of observations. It gives a single value to describe the whole data. It has been
obtained by adding the values of all observations and dividing it by the number of observations. It is calculated by the following formula:

\[ \bar{X} = \frac{\sum x}{N} \]

Where \( \sum x \) = Sum of Variables

\( N \) = Number of Observations.

2. **Standard deviation**

Standard deviation is the square root of variance; it is a measure of dispersion in the same units as original data. Higher the standard deviation, greater is the dispersion. The formula

\[ \sigma = \sqrt{\frac{\sum X^2}{N} - U^2} \]

Where \( \sigma \) = Standard Deviation

\( \sum X^2 \) = Square of Sum of Variables

\( N \) = Number of Observations

\( U \) = Square of Mean.

This is used to compare the standard deviation of various ratios.

3. **Co-efficient of Variation**

It is a relative measure of dispersion, comparable across distribution, which expresses the standard deviation as a percentage of the mean. It is used in problems, which requires to compare the variability of two or more than
two series. The series, for which the co-efficient of variance is greater, is said to be more variable or conversely less consistent, less stable or less homogenous. It is calculated by the following formula:

\[ C.V = \frac{\sigma}{X} \times 100 \]

Where \( \sigma \) - Standard Deviation

\( \overline{X} \) - Mean

In ratio analysis, the less co-efficient of variance indicates relatively better control of the management on that ratio.

4. Correlation

Correlation analysis is used to determine the degree of associate relationship between the two related variables. For finding out the correlation, the following formula is used

\[ r = \frac{\sum XY}{\sqrt{\sum X^2} \times \sqrt{\sum Y^2}} \]

Further to test its significance at 5% level, the following formula is used

\[ 't' = \frac{r}{\sqrt{1 - r^2} \sqrt{n - 2}} \]

Where, \( t \) = student ‘t’ test, \( r \) = co-efficient of correlation,

\( n \) = number of observations.
When the computed ‘t’ value is more than the table value at 0.05 level of significance, the null hypothesis of no significant correlation among variables is rejected and the alternative hypothesis of significant correlation among the variables is accepted.

5. **Regression analysis**

Regression is the measure of the average relationship between two or more variables in terms of the original units of the data and this makes the possible estimation or prediction. There are two types of regression analysis. They are (i) Linear regression analysis (ii) Multiple regression analysis

i) **Linear Regression Analysis**

Linear regression analysis is a statistical device to estimate the unknown values of one variable from known values of another variable.

It is fit to be used in Ordinary Least Square (OLS), by regressing dependent variable of the independent variable as:

\[ Y = a + bx + U \]

Where \( Y \) = Dependent variable

\( X \) = Independent variable

\( U \) = Error term

\( a \) = Constant

\( b \) = Regression co-efficients
The statistical significance of ‘b’ is worked out by applying ‘t’ test and \( R^2 \) is computed to determine the percentage variation in the dependent variable explained by the independent variable.

**ii) Multiple Regression Analysis**

Multiple Regression analysis is a statistical process by which several variables are used to predict another variable. In order to estimate the degree and the extent of interrelationship between a dependent variable and the number of independent variables, Multiple Regression techniques are generally used with the following formula

\[
Y = a + b_1 x_1 + b_2 x_2 + \ldots + b_n x_n
\]

While selecting independent variables, to a larger extent, variables which were less correlated were selected in order to avoid Multi Collinearity problem. The ‘F’ ratio and P value for the model is also computed to test at the 5% level of significance. If the computed value is less than the critical value at 5% level of significance, the model was determined as statistically significant, otherwise not significant. The co-efficient of determination \( R^2 \) was also computed to find out the percentage of the explaining power of the model. \( R^2 \) would always increase when all independent variables are added; adjusted \( R^2 \) will come down if the added variables does not reduce the unexplained variations.
The adjusted $R^2$ was calculated by

$$\text{Adjusted } R^2 = 1 - (1-R^2) \times \frac{N-1}{N-K}$$

$N$ - Number of sample observations  
$K$ - Number of parameters.

If the adjusted $R^2$ was close to $R^2$, addition of any further independent variable would not help for better prediction. When there is wide difference, then there shows an indication that there is a need for inclusion of some more independent variables. The standardized regression co-efficient beta ($\beta$) indicates the positive or negative movement of the dependent variable for a given change in the independent variable. The value of the beta co-efficient indicates the percentage of change in the dependent variable for one percentage change in the independent variable. The goodness of fitted estimated equation is worked out with the help of the $R^2$ and adjusted $R^2$ values.

6. Analysis of Variance (ANOVA)

The analysis of variance (ANOVA) is a statistical technique specially designed to test whether the means of more than two quantitative populations are equal. The analysis of variance technique, developed by R.A.Fisher in 1920’s, is capable of fruitful application to a diversity of practical problems. It consists of classifying and cross-classifying statistical results and testing whether the means of a specified classification differ significantly. Comparing
the calculated value of F with the table value of F at 5% level of significance and if the calculated F value is greater than the table value, it is concluded that the difference in sample means are significant. On the other hand, the difference is not significant. The specimen of ANOVA table is given below:

ANOVA Table: one-way classification model.

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>Degrees of freedom(V)</th>
<th>Mean square</th>
<th>Variance ratio of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between samples</td>
<td>SSC</td>
<td>V₁ = c-1</td>
<td>MSC = SSC/(C-1)</td>
<td></td>
</tr>
<tr>
<td>With in samples</td>
<td>SSE</td>
<td>V₂ = n-c</td>
<td>MSE = SSE/(n-c)</td>
<td>MSC/MSE</td>
</tr>
<tr>
<td>Total</td>
<td>SST</td>
<td>n-1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where

SST = sum of squares of variations (Total)

SSC = sum of squares between samples (Columns)

SSE = sum of squares within samples (Errors)

MSC = Mean sum of squares between samples

MSE = Mean sum of squares within samples

III. ALTMAN’S MULTIPLE DISCRIMINATE ANALYSIS MODEL

(Z SCORE ANALYSIS)

At the age of 40, Edward I. Altman, a financial economist at New York University’s Graduate School of Business, developed a model for predicting the likelihood that a company would go bankrupt. This model uses five financial ratios that combine in a specific way to produce a single number, named as Z-score which is a general measure of corporate financial health.
Based on Multiple Discriminate Analysis (MDA), the model predicts a company’s financial health based on a discriminate function of the company.

\[ Z = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 1.0 X_5 \]

where:

- \( Z \) = Discriminant function score of a firm
- \( X_1 \) = Working Capital / Total Assets
- \( X_2 \) = Retained Earnings / Total Assets
- \( X_3 \) = Earnings before interest and taxes / Total Assets
- \( X_4 \) = Market Value of Equity / Book value of Total Liabilities or Reciprocal of Debt-Equity Ratio
- \( X_5 \) = Sales / Total Assets.

**GUIDELINES: ALTMAN GUIDELINES FOR HEALTH ZONE**

With the help of Altman guidelines, the overall financial health of Paper Companies are measured during the study period.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Z-Score</th>
<th>Zones</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Below 1.8</td>
<td>Distress Zone</td>
<td>Its failure is certain and extremely likely and would occur probably within a period of two years.</td>
</tr>
<tr>
<td>II</td>
<td>Between 1.8 and 2.99</td>
<td>Grey Zone</td>
<td>Financial viability is considered healthy. The failure in this situation is uncertain to predict.</td>
</tr>
<tr>
<td>III</td>
<td>3.0 and above</td>
<td>Safe Zone</td>
<td>Its financial health is viable and there is no risk of failure.</td>
</tr>
</tbody>
</table>
LIMITATIONS OF THE STUDY

The study is restricted to the period of 15 years from 1997-98 to 2011-12 only. It is based on secondary data taken from CMIE prowess as such its findings depend entirely on the accuracy of such data. There are different methods to measure the financial performance of a company. It is in this connection, the views of experts differ from one to other. The present study is largely based on ratio analysis and it reflects the limitations of ratio analysis. This study has focused only on select large scale paper companies in India. So, it implies that the conclusion drawn from the present study could not be generalized to small and medium size of paper companies in India.
CHAPTER SCHEME

The ensuing chapters is delineated to bring out the whole idea of the thesis work.

The **First Chapter** includes Introduction, Significance of the study, Statement of the problem, Scope of the study, Objectives of the study, Hypotheses of the study, Methodology, Limitation and Chapter scheme.

The **Second Chapter** presents a brief Review of Literature.

The **Third Chapter** focuses on History and Profile of the Indian Paper Industry.

The **Fourth Chapter** deals with Cost Structure of the Sample Units.

The **Fifth Chapter** examines the Liquidity and Profitability analysis of the Sample Units.

The **Sixth Chapter** analyses the Financial Health of Sample companies.

The **Seventh and the concluding Chapter** recapitulates the key Findings of the Study and offers suitable Suggestions.