CHAPTER I

INTRODUCTION AND DESIGN OF THE STUDY
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Introduction

India is emerging as a global manufacturing hub, and it has all the requisite skills in product, process and capital engineering, due to its long manufacturing history and technical education system. India's cheap yet skilled manpower is attracting a number of companies, spanning diverse industries, making India a global manufacturing powerhouse. India, with its vast design skills, has attracted a lot of outsourcing technological orders.

Manufacturing industries are the chief wealth producing sectors of an economy and they employ a huge share of the labour force and produce materials required by sectors of strategic importance such as national infrastructure and defence. These industries use various technologies and methods widely known as manufacturing process management. Manufacturing industries are broadly categorized into engineering industries, construction industries, electronics industries, chemical industries, energy industries, textile industries, food and beverage industries, metalworking industries, plastic industries and transport and telecommunication industries.

According to a United Nations Industrial Development Organization (UNIDO) analysis based on 2007 figures mentioned in the International Yearbook of Industrial Statistics 2009, India ranks top among the 12 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 machinery and equipment and motor vehicles, fifteenth in paper and paper products.¹

In 1970, Indian 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, cement, fertilizer, iron and steel, glass, paper.

The new millennium is going to be 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 performs 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 the 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 of small capacities. In India a paper mill of 50,000 tonnes per annum or higher capacity is called a large mill.³ There are only 20 companies in India which have the capacity of more than 50,000 tonnes per annum. The large mills account for only 35 per cent of the total production of paper. The setting up of large paper mills in
India is not feasible as they find it difficult to procure the main raw material — wood, in required quantities.

**Need for the study**

Paper industry is highly 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.4

The importance of paper and paper products in the modern life is so obvious that no other manufactured product possesses such diversity of use. Paper is a basic medium of communication and a source for disseminating information. However, poor profitability is one of the challenges faced by paper industry. Under capacity utilization, higher cost of production, industrial disputes and financial mismanagement are the factors that can be attributed to poor profitability of the industry. Some research studies have been undertaken on financial performance of paper industry at the state level and a few studies relating to individual mills. Thus an attempt is made by the researcher to study the financial performance of paper industry 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 an 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 the 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 a variety of reasons. The financial performance of the Indian paper mills has also been found to be unsatisfactory.

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. It is disheartening to note that about one sixth of the paper mills have closed and a few are operating under sick condition.

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 and medium paper mills and large paper mills in most states. Many of the mills 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 continued operating losses. A majority of the mills are in perpetual financial crisis and for them, securing additional funds is becoming almost impossible.
The financial health of paper mills is severely affected by a plethora of problems such as acute shortage of working capital, uncertainties in raw material availability, 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 as well as lack of skilled manpower, low prices of paper products, lack of research and development, high cost of production, and managerial incompetence. These factors ultimately have an adverse impact on profitability. This has encouraged the researcher to study the financial performance of the Indian paper industry. Based on the above issues, the researcher has probed the following questions:

1. How and when was the Indian paper industry originated?
2. What could be the trend of efficiency of the paper companies in India?
3. What is the profitability position of the paper companies in India?
4. What is the liquidity and solvency position of the paper companies in India?

Objectives of the study

The following are the main objectives of the study:

1. To trace out the growth and progress of the paper industry in India.
2. To evaluate the trend of efficiency of the paper companies in India.
3. To analyze the profitability position of the paper companies in India.
4. To analyze the liquidity and solvency position of the paper companies in India.
5. To recapitulate the key findings of the study and to offer suitable suggestions for improving the performance of paper companies in India.
Hypotheses of the study

The following hypotheses have been framed and tested with the data and tools:

1. The ratios of profitability, liquidity and solvency of the select paper mills in India have no significant variation among the companies and among the years.

2. The relationship between capacity utilized, production and sales of the select paper mills is insignificant.

3. Solvency ratios and activity ratios show no significant effect on Net Profit Ratio and Return on Total Assets.

Methodology

Selection of paper companies

The large scale Indian paper companies listed in the Mumbai Stock Exchange have been taken for the present study. The list of large-scale paper companies in India is furnished in Table 1.1.
Table 1.1

List of Large-scale paper companies in India

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of company</th>
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<tbody>
<tr>
<td>1.</td>
<td>Andhra Pradesh Paper Mills Limited</td>
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<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 Boards Limited</td>
</tr>
<tr>
<td>5.</td>
<td>Shreyans Paper Mills Limited</td>
</tr>
<tr>
<td>7.</td>
<td>Star Paper Mills Limited</td>
</tr>
<tr>
<td>8.</td>
<td>Tamilnadu Newsprint and Paper 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>12.</td>
<td>Mysore Paper Mills Limited</td>
</tr>
<tr>
<td>13.</td>
<td>JK 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 Mill Limited</td>
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<tr>
<td>19.</td>
<td>Enami Paper Mill Limited</td>
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</tbody>
</table>

The following criteria were used to select paper companies among these 19 companies. Hence, the study pertains to:

1. Those companies which are started before 1997-98.
2. Those companies which are listed in Mumbai stock Exchange.
3. Those companies which are continuously functioning till the end of the study period.
Out of 19 large-scale paper companies listed, Hindustan Newsprint Limited, Hindustan Paper Corporation Limited, Pudumji Industries Limited, Ruby Macons Limited, Satia Paper Mill Limited and Enami Paper Mill Limited were excluded from the study due to non-availability of data. Hence the remaining 13 companies as shown in Table 1.2 have been considered for the study.

Table 1.2
Selection of paper companies for the study

<table>
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<tr>
<th>S.No.</th>
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</tbody>
</table>

Period of study

Sources of Data

The data required for the study have been obtained from secondary sources. The data have been collected from the Centre for Monitoring Indian Economy [CMIE] prowess data base and Capita line data base. Information has also been collected from Published Annual Reports, Annual Survey of Industries, the Stock Exchange Official Directory, Centre for Industrial and Economic Research (CIER’s) Industrial Data Book, Publications of the Indian Pulp and Paper Technical Association [IPPTA] and from official websites of the selected companies. Various journals and periodicals on finance and industry have also been reviewed.

Framework of Analysis

To analyze the performance of large-scale paper companies, various techniques have been applied. Techniques like ratio analysis, mean, standard deviation, co-efficient of variation, annual growth rate and compound annual growth rate have been computed. The analysis of variance has been used to test the hypotheses, i.e., to test whether the group means of the dependent variable differ significantly or not, based on the classification of independent variables. Numerical scoring system is applied to rank the companies on the basis of selected performance indicators. Altman’s Z score model is used to measure the financial health of the paper industry.

Tools used in the study

To make the analysis, the arithmetic mean, standard deviation, co-efficient of variation, annual growth rate and compound annual growth rate have been used. The various tools and models used in the study are:-
Annual Growth Rate

The annual growth rate has been computed by the formula

\[ Y = a + bt \]

Where \( b = \frac{[N \times SY_t - SY \times St]}{[N \times St^2 - (St)^2]} \)

\[ a = Y - bt, \text{ where } Y = \text{mean of } Y \text{ and } t = \text{time in years} \]

(b gives the rate of growth at a given point of times)

Compound Annual Growth Rate

The compound annual growth rate has been computed by the following formula.

\[ CAGR = \left( \frac{\text{Ending value/Beginning value}}{(1/\text{Number of years}) - 1} \right) \times 100 \]

Analysis of Variance

Two way analysis of variance techniques is used to test the significant differences in the study period and also among the companies simultaneously. The analysis of variance has been applied for the analysis of profitability ratios, solvency ratios, activity ratios, and liquidity ratios. The ‘F’ value is calculated and is compared with the table values. If calculated value of ‘F’ is greater than the table value, the null hypothesis is rejected and if otherwise, it is accepted. The analysis of variance has also been performed to find significant variations in capacity utilized, production and sales made by the sample companies.
Correlation analysis

Correlation analysis has been applied to analyse the degree of relationship between two sets of variables. Multiple correlations have been applied using financial ratios as variables. The relationships between the profitability ratios, liquidity ratios and solvency ratios have been measured using correlation.

Regression analysis

The net profit and return on total assets of the firms are supposed to be influenced by certain variables including solvency ratios and activity ratios. Multiple regression is used to measure the extent of dependence of net profit and return on total assets of the select companies of various selected independent variables. The multiple regression equation could be written as:

\[ Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \ldots \ldots . + b_nx_n \]

Where

\begin{align*}
Y & = \text{Dependent variable} \\
b_0 & = \text{Constant} \\
b_1, b_2, b_3, \ldots \ldots , b_n & = \text{Regression co-efficient} \\
x_1, x_2, x_3, \ldots \ldots , x_n & = \text{Independent variables}
\end{align*}

Trend Analysis

Trend analysis has been used to analyse the production, sales and capacity utilized in relation to the select paper companies with the help of simple linear regression. The estimation is carried out by the following formula:

\[ Y = b_0 + b_1t \]
Where

\[ Y = \text{Dependent variable} \]
\[ b_0 = \text{Constant} \]
\[ b_1 = \text{Regression coefficient} \]
\[ t = \text{Number of years} \]

The tests of significance 't' and 'F' tests have been applied to test the hypothesis made, wherever necessary.

Numerical scoring system

Numerical scoring system is applied to rank the companies on the basis of selected performance indicators. Accordingly, based on the profitability ratios and coefficient of correlations of these ratios, the overall performance indices were computed and thus the companies have been ranked. Z-score have been calculated using the formula

\[ Z\text{-score} = \frac{(x_i - \text{Mean})}{\text{Standard Deviation}} \]

Altman's model

Altman's model is used to measure the financial health of the select companies. Z score is computed by taking into consideration the selected five variables of profitability and solvency ratios. This model shows the companies which are in or about to be in financial distress in the years to come.
The Z score model is as follows

\[ Z = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 1.0x_5 \]

Where

- \( Z \) = Discriminant score
- \( x_1 \) = Net working capital/Total Assets
- \( x_2 \) = Net operating profit/Total Assets
- \( x_3 \) = EBIT/Total Assets
- \( x_4 \) = Market value of Equity/Book value of Total Debt
- \( x_5 \) = Sales/Total Assets

Limitations of the study

The present study is subject to the following limitations:

1. The financial performance of small-scale and medium-scale companies has not been considered in the present study.
2. The present study has analysed the financial performance of listed companies only and hence the unlisted companies have been excluded from the purview of the present study.
3. The period of study is confined to a period of ten financial years and hence the changes during the period before and after the study period have not been taken into account.
4. The study is based on secondary data and its findings depend upon the accuracy of such data.
Chapter scheme

The study is presented in six chapters.

Chapter One consists of introduction, need for the study, statement of the problem, research design and methodology, period of study, framework of analysis, limitations of the study and chapter scheme.

Chapter Two presents the detailed review of related literature.

Chapter Three describes the profile of the paper industry in India.

Chapter Four deals with the trend analysis of the paper companies in India.

Chapter Five deals with the analysis of profitability, liquidity and solvency of the paper companies in India.

Chapter Six recapitulates the key findings of the study and suggestions offered.
References


