Introduction and Design of the Study
CHAPTER I
INTRODUCTION AND DESIGN OF THE STUDY

1.1. INTRODUCTION

The Indian corporate sector has two main components, namely, the government owned and privately owned companies. The size of both the components, in terms of both numbers and capital, has grown fast, particularly since beginning of the seventies. Government companies are mainly in the basic, heavy and capital intensive industries whereas the private sector which has exclusive industries which cater to the consumer markets directly\(^1\). The different natures of the activities undertaken by the two sectors are also reflected in the pattern of industrial activities of the two sectors. The ever increasing importance and role of corporate sector in the economic growth of a country, particularly, in the developing country like India, have attracted several academicians, professional institutions, researchers and administrators to conduct diversified studies in this area. There is the need to study the industries' internal efficiency which shall ultimately determine the overall industrial development in future. The present study is a small endeavour to update our knowledge in this aspect.

1.2. NEED FOR FINANCIAL PERFORMANCE ANALYSIS

Finance may be defined as the art and science of managing money\(^2\). Business concern needs finance to meet their requirements in the economic world. Provision of money when it is needed is called Fund/ Finance. Any kind of business activity depends on the finance. Whether the business concerns are big or small, they need finance to fulfil their business activities\(^3\). This is because in the modern money-oriented economy, finance is one of the basic foundations of all kinds of economic activities. It is the master key which provides access to all the
sources for being employed in manufacturing and merchandising activities\textsuperscript{4}. It is the driving force behind a business, and no business could be started or even survive without it. It allows the entrepreneurs to buy equipment, acquire office space, set up a production plant, pay suppliers for raw materials, pay for the transportation of goods and services, employ labourers and pay the salaries of employees\textsuperscript{5}. In these circumstances, company should maintain all the activities related to constant growth with the help of financial analysis. Companies are also interested in the results of financial analysis to know the progress being made in the present position of an industry.

Financial analysis is a process of evaluating relationship between various components to obtain a better understanding of a firm's position and performance\textsuperscript{6}. It is the process of identifying the financial strength and weaknesses of the firm by properly establishing relationship between the items in the balance sheet and the profit and loss account\textsuperscript{7}. Financial analysis is a process of synthesis and intellectual activity. It is a technique of X-raying the financial position as well as the progress of a company. An analysis of financial statement gives a comprehensive understanding of business operations and their impacts on the financial health. If the business operations result in profits, the total investment is enhanced, bringing prosperity to shareholders, increasing goodwill and strengthening of credit. On the other hand, if there are losses, capital invested to the extent of loss is lost or dissipated ability to pay creditors and lenders is weakened and the business concern operates under a "handicap".

1.3. HISTORY AND IMPORTANCE OF AGRICULTURAL SECTOR

Indian agriculture began by 9000 BC as a result of early cultivation of plants, and domestication of crops and animals\textsuperscript{8}. Agriculture sector is vital for the food and nutritional security of the nation. The sector remains the principal source
of livelihood for more than fifty eight per cent of the population. Compared to other countries, India faces a greater challenge, with only 2.3 per cent share in world’s total land area, it has to ensure food security of its population which is about 17.5 per cent of world population. Against the backdrop of the burgeoning population’s demands for food grains, degrading natural resource base, emerging concerns of climate change and other challenges, the Department of Agriculture and Cooperation (DAC) has focused on mobilising higher investment in agriculture, bridging the yield gaps that exist across the states/ regions, timely and adequate supply of quality inputs, and providing adequate support services to the farmers to make agriculture a remunerative vocation on a sustainable basis. Increasing agricultural production with limited natural resources in a sustainable manner for ensuring food and nutritional security and providing income security to farmers are the major challenges before the Government.

1.4. SUGAR INDUSTRY OVERVIEW

1.4.1. Historical Industry Development

India has been known as the original home of sugarcane and sugar. Indians knew the art of making sugar since the fourth century. However the advent of modern sugar industry in India dates back to mid 1930s when a few vacuum pan units were established in the sub-tropical belts of Uttar Pradesh and Bihar. Until the mid fifties, the sugar industry was almost wholly confined to the states of Uttar Pradesh and Bihar. After late fifties or early sixties the industry dispersed into Southern India, Western India and other parts of Northern India.

India is the largest consumer and the second largest producer of sugar in the world. The sufficient and well distributed monsoon rains, rapid population growth and substantial increase in sugar production capacity have combined to make India the largest consumer and second largest producer of sugar in the world.
However, India is presently a dominant player in the global sugar industry along with Brazil in terms of production. The growing sugar production and the structural changes witnessed in Indian sugar industry suggest that India is all set to continue its domination at the global level.

Since the sugar industry in the country uses only sugarcane as an input, sugar companies have been established in large cane growing states like Uttar Pradesh, Maharashtra, Tamil Nadu, Karnataka, Punjab and Gujarat. Uttar Pradesh leads the tally by contributing twenty four per cent of the country’s total sugar production and Maharashtra stands next with twenty per cent contribution.

The farmers’ co-operatives own and operate the largest chunk of the industry's total capacity. They are concentrated primarily in Maharashtra and eastern Uttar Pradesh. The largest numbers of sugar companies in the private sectors are located in Southern India, in the states of Tamil Nadu, Andhra Pradesh and Karnataka.10

The Indian sugar industry has not only achieved the singular distinction of being one of the largest producers of white plantation crystal sugar in the world but has also turned out to be a massive enterprise of gigantic dimensions. With over 662 sugar factories located throughout the country, the sugar industry is amongst the largest agro processing industries, with an annual turnover of Rs. 80000 crores. It plays a major role in rural development and its importance for India stretches far beyond the role of a sweetener supplier.

Indian sugar industry can be broadly classified in to two sub sectors, the organised sector i.e. sugar factories and the unorganised sector i.e. manufacturers of traditional sweeteners like Gur and Khandsari. The latter is considered to be a rural industry and enjoys much greater freedom than sugar mills. The production of traditional sweeteners Gur and Khandsari is quite substantial. Though the trends
indicate a progressive shift from traditional sweeteners to white sugar over the years, they still account for about thirty seven per cent of total sweetener consumption in India.

Since the beginning of planning era, sugar industry operated under a policy of partial control in 1950-51 and 1951-52 followed by a continuous period of six years of decontrol between 1952-53 and 1957-58. After alternating between control and decontrol, the government adopted the policy of partial decontrol in 1967-68 which has since been the mainstay of government policy except for two short periods of decontrol in the 1970s. Under this policy, the government procures forty per cent of production at controlled prices based on the Statutory Minimum Price for sugarcane, for supply through the Public Distribution System and the balance sixty per cent is allowed to be sold by the mills in free market subject to the monthly release mechanism.

The number of operating sugar mills in the country has increased from 29 in Sugar Year (SY) 1930-31 to 662 by SY 2011-2012. The average capacity of the sugar mills in the industry has considerably moved up from just 644 ton per day in SY 1930-31 to 2656 ton per day. But still the growth in the Indian sugar industry was driven by horizontal growth (increase in number of units) compared to the vertical growth witnessed in other countries (increase in average capacity).

1.5. CURRENT SCENARIO OF SUGAR INDUSTRY

There are however greater challenges on the global front where sugar stocks are at historically low levels. Hence, even minor corrections in production numbers could trigger turbulent changes in global prices. Indian sugar producers would need and largely depend on a pro-active and supportive policy environment to be able to get viable prices for their produce both in the local and overseas market.
Sugar mills in Tamil Nadu, unlike their counterparts in other major producing regions, did not have the luxury for last year to down-revise cane prices compatible with the downfall in sugar prices. Unchecked rise in farm labour cost and lack of mechanisation have come to hamper cane cultivation and erode profit margins for the cane crop despite higher prices. With fresh sugar capacities, there is increased competition for available cane and labour supply. There are thus systemic constraints inflicting higher costs and impeding cane supplies for sugar mills in the State.

Therefore, sugar companies in India faced a challenging time during 2011-12 on both availability of cane and affordability of its cost besides the ever escalating shortage for harvesting labour. It will further be faced with higher interest costs with the disappearance of surplus funds having been deployed in projects and hard money policy stance of RBI by continually hiking interest rates. It would of course steadfastly focus on increasing efficiencies and cutting costs towards sustaining reasonable levels of operating and financial performance are necessary.  

1.6. STATEMENT OF THE PROBLEM

India's manufacturing sector used to account for only about ten per cent of its GDP in the early 1950s, but the contribution is just over sixteen per cent of India's GDP, currently. Since 1991, the manufacturing sector in India has been undergoing a wave of liberalisation, the main objective of it is to reduce, both external and internal barriers entry. Such a reduction, it was argued, would enhance the competitiveness of the sector and thereby making it more efficient. Since 1992-93, the manufacturing sector has grown at the rate of about 6.9 per cent per annum, though there have been considerable fluctuations in its growth rate. Against this background, it is very important to analyse the performance of manufacturing sector that has really led to an improvement in the growth of performance of the sector.
Sugar industry is still waiting to be liberalised. As opposed to other countries where sugar prices are influenced by economic considerations, in India they are influenced by political considerations. The industry is still subjected to the monthly release mechanism for sugar sales that is determined and declared by Government of India.

Cane prices are increased every year by the central government and even more by each of the state governments in the form of Statutory Minimum Price (SMP) and State Advised Price (SAP) respectively. Sugar price, on the other hand, does not increase in the same proportion every year. Consequently, margins are squeezed and the millers are not able to make enough money, not even to recover their conversion costs.

When factories are cash strapped, they take delivery of cane but postpone payments to farmers forcing them into a debt trap with very little incentive to grow sugarcane. Farmers may sell the sugarcane to manufacturers of other sugarcane products like Jaggery (unrefined concentrated sugar) or Khandsari (brown sugar). Frequent switching also lowers recovery rates and consequently India has the lowest recovery rate (percentage of sugarcane that gets converted to sugar) amongst major sugar producers. Brazil’s recovery rates are thirteen to fourteen per cent while Indian producers can recover at best ten to twelve per cent.

Most of the sugar units in India utilise only fifty per cent of its production capacity. Low capacity utilisation and inadequacy of raw material led to the closure of sugar factories in India. Indian sugar production is much lower than the installed capacity because of shortage of raw materials.

These problems left India’s private sector sugar industry in the lurch. The private sector contributes 55.6 per cent of the total sugar production of India.
The private sector also incurred heavy losses. But it tends to nourish for itself. Hence, it is impracticable for the private sector sugar units to shrink their cost of production through expansion or modernisation. Private sector sugar units are, therefore, incapable of fighting in the international markets.

This results in the sugar industry being the drainer of economic growth and India is keen to use it as a level of accelerated growth in the country. Therefore, the present study is undertaken to analyse the growth, production trend, sales trend, profitability, financial structure, financial performance and assessment of financial health of the industry and to suggest remedial measures to solve the problems of the private sector sugar industries in Tamil Nadu.

1.7. OBJECTIVES OF THE STUDY

The following are the objectives of the study:

1. To study the trends and growth of selected private sector sugar companies in Tamil Nadu.

2. To measure the extent of influence of the factors responsible for the financial performance of selected private sector sugar companies in Tamil Nadu.

3. To analyse the production and sales performance of selected private sector sugar companies in Tamil Nadu.

4. To determine the factors influencing profitability, liquidity, capital structure and operational efficiency of selected private sector sugar companies in Tamil Nadu.

5. To suggest measures to improve the performance of sugar companies.
1.8. HYPOTHESIS

1. There is no significant difference in the Liquidity position among the selected private sector sugar companies.

2. There is no significant difference in the Long term solvency position among the selected private sector sugar companies.

3. There is no significant difference in the Profitability position among the selected private sector sugar companies.

1.9. NEED FOR THE STUDY

Sugar industry in Tamil Nadu plays a vital role in the economic development of the state, particularly promoting the rural economy by providing large scale direct and indirect employment to several lakhs of farmers and agricultural labourers engaged in cultivation, harvesting, transport and other services.

Tamil Nadu is one of the major sugar producing states in India and it contributes on an average of nineteen lakhs tonnes of sugar annually, which is about ten per cent of the total production of sugar in the country. Tamil Nadu comes under low recovery zone with recovery hovering around nine per cent. Agro processing units including sugar units are equally plagued by the problem of sickness. The sugar industry is beset with a number of problems like shortage of sugarcane, obsolete technologies, under utilisation of capacity, payment of high state advised price, high cost of production etc.,

A good financial analysis will help to identify the strengths and weaknesses of a company and facilitates a more informed management decisions. And also it will be able to identify and correct the performance problems before they have a major impact in the business. As such, the study is expected to help the corporate
management, the financiers, the investors and the government at large, to take appropriate decisions. The study has academic relevance too in so far as new theoretical and practical knowledge would be added to the existing stock of knowledge undoubtedly. The present study will act as a masterpiece on the subject for further research and development. Therefore, to cover the gaps in the earlier studies, the present study is undertaken to give an insight into the performance of selected private companies of Tamil Nadu sugar industry. It would also enable shareholders, investors and investment analyst to identify the determinants of corporate performance.

There are many studies conducted at macro level to deal with the entire economy. Such studies pertain to a sector or an industry and very few studies are conducted at micro level. But the financial performance of selected private sector sugar industries in Tamil Nadu has received only scant attention. Moreover, a comparative study on performance appraisal of some of private sector sugar companies in a key industry would help to understand the major constraints faced by the sugar manufacturers.

1.10. SELECTION OF SUGAR INDUSTRY

India tops the list in sugar production in the world next to Brazil. Being the most populous country, India’s requirements of sugar are also very large. The demand for sugar is ever on the increase on account of increasing population as well as due to an improvement in the standards of living or the masses.

Today India is the largest producer of sugarcane as well as sugar in the world and sugar industry is the second largest agro based industry being next only to cotton industry. Almost all the sugar factories are located in the rural areas and many of them are in less developed areas. These are acting as a catalyst for socio-economic progress at the rural community and for uplift of the weaker sections of the society.
The sugar industry is regulated right from cane production to cane pricing and allocation of cane area to distribution of sugar by the respective State Governments and Central Government. There exist restrictions imposed by the government such as levy quota, Free Sale Quota (FSQ) in the distribution front and Statutory Minimum Price (SMP) and State Advisory Price (SAP) in the cane pricing front. The SMP is announced by the Central Government where as the State Governments announce SAP. At times, variations occur in the prices announced by both the governments and the mills are forced to pay the highest among those prices as normally demanded by the farmers.

From the past till now, Indian sugar industry had been caught in lot of problems and suffered losses because of excess control imposed by the government, in addition to its efficiency not utilised to its maximum. Farmers were ensured of SMP for their cane and consumers were also on the safer side as governments do not allow sugar prices to increase beyond a level. So, the mills were financially weak, and not able to cope with the situation and the payment to farmers been delayed. Delay in payments combined with the poor monsoons and power shortage lead to subsequent reduction in area under cultivation of sugarcane.

In India, sugarcane is the chief raw material used for production of sugar. The past data show that the fluctuations in sugarcane cultivation also led to ups and downs in production of sugarcane. In recent years, sugarcane production in India has declined to a great extent due to water and power shortage. As a result, sugar industry has faced shortage of sugarcane. Apart from that the sugar industry in India has to solve number of problems i.e. dual pricing policy, levy sugar procured by the government from the industry at prices fifty per cent below the cost of production, under utilisation of crushing capacity, monthly release
mechanism, distance among the sugar mills, obsolete technologies, international competition, inventory management, highly working capital intensive, competitors from cheaper imports etc.,

The sugar industry has been selected for the analysis due to the above reasons. Second reason is that for the country’s economic development is supported by agricultural industry because India is dependent on agriculture and fifty per cent of population based on agricultural industry, since that the sugar industry is belonging to that category. Thirdly, the sugar is essential and unavoidable in every body’s life. So, to meet the needs of growing population of India, production of sugar should be increased. To increase the production of sugar, a clear and elaborate performance appraisal is to be made to encourage entrepreneurships. Hence, the researcher has selected the sugar industry.

1.11. METHODOLOGY

The sugar industry in Tamil Nadu plays a vital role in the economic development of the state and particularly in rural areas. Tamil Nadu is one of the leading producers of sugar in the country and its contribution is about ten per cent of country’s total sugar production. As on 31.5.2011, there are forty six sugar mills in Tamil Nadu of which sixteen sugar mills are in cooperative sector, three in public sector and twenty seven in private sector. At present forty four sugar mills are functioning and the remaining two mills are not functioning\textsuperscript{13}. The twenty seven private sector private sector mills are operated by eleven companies. Of which, the researcher has taken only six private sector sugar companies considered as samples for the study of financial performance of private sector sugar industries in Tamil Nadu in order to determine the performance of sugar industries in Tamil Nadu.
1.11.1. SAMPLE SELECTION FOR THE STUDY

The following criteria were used for the study to select samples. The sample set includes,

i. Those companies which are either listed in NSE and / BSE.

ii. Those companies which are continuously functioning till the end of the study period.

iii. Those companies which have been started before 2000-01.

iv. Those companies which did not undergo merger or demerger during the study period.

v. The companies having more than 10000 tonnes crushing capacity in a day during the study period.

Table 1.1

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sample Private Sector Sugar Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bannariamman Sugars Ltd.,</td>
</tr>
<tr>
<td>2</td>
<td>Dharani Sugars and Chemicals Ltd.,</td>
</tr>
<tr>
<td>3</td>
<td>EID Parry (India) Ltd.,</td>
</tr>
<tr>
<td>4</td>
<td>Rajshree Sugars and Chemicals Ltd.,</td>
</tr>
<tr>
<td>5</td>
<td>Sakthi Sugars Ltd.,</td>
</tr>
<tr>
<td>6</td>
<td>Thiru Arooran Sugars Ltd.,</td>
</tr>
</tbody>
</table>

Thus, the six companies listed in Table 1.1 were considered samples for the study. The financial statements of these companies were analysed in order to determine the performance of private sector sugar industries in Tamil Nadu.
1.12. SOURCES OF DATA

The study is based on the secondary data collected from the Centre for Monitoring Indian Economy (CMIE) data base. The data for the sample companies are obtained from Capitaline and are supplemented with the information from various financial dailies, business magazines, reports, websites and also information has been collected from Centre for Industrial and Economic Research (CIER), Industrial data book, Hand book of Sugar Statistics published by South Indian Sugar Mills Association (SISMA) Chennai, Tamil Nadu, Indian Sugar Mills Association (ISMA), Co - operative Sugar Federation, Chennai and in different websites, various journals and periodicals on finance and industry were also reviewed.

1.13. STATISTICAL TOOLS USED

The factors identified by the researcher, for the purpose of applying the multivariate techniques, the ratio of Return on Total Assets is taken as the dependent variable and the remaining thirty three variables are considered the independent variables. In order to identify the prominent factors responsible for the profitability of sugar industries, and also to measure the extent of influence of the independent variables on the dependent variable, the following tools were applied by the researcher:

a) Trend Analysis
b) Compound Annual Growth Rate Analysis
c) Correlation Analysis
d) Factor Analysis
e) Multiple Regression Analysis
f) Analysis of Variance and
g) Path Analysis
1.14. FRAME WORK OF ANALYSIS

The following make up to the framework of analysis as applied by the researcher, to identify the solutions to realise the objectives of the study with the help of ratios, multivariate techniques namely correlation, multiple regression, factor analysis, trend analysis and so on. To make the analysis and interpretations more vibrant and truthful, the values of mean, SD, co-efficient of variation, annual growth rate and compound annual growth rate have been computed from the ratios.

1.14.1. Ratio Analysis

The relationship between two figures expressed mathematically is called a "Ratio". Ratio analysis is a technique of analysis and interpretation of financial statements. It is the process of determination and interpretation of various ratios for helping in decision making.

1.14.2. Correlation Analysis

When comparing the correlation between two items, one item is called the "dependent" item and the other the "independent" item. The goal is to see if a change in the independent item (which is usually an indicator) will result in a change in the dependent item (usually a security's price). This information helps you understand an indicator's predictive abilities.\(^{14}\)

1.14.3. Multiple Regression Analysis

In statistics, regression analysis is a statistical technique for estimating the relationships among variables. It includes many techniques for modeling and analysing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. Regression analysis is widely used for prediction and forecasting, where its use has substantial overlap with the field of machine learning. Regression analysis is also used to understand
which among the independent variables are related to the dependent variable, and to explore the forms of these relationships\textsuperscript{15}.

1.14.4. Factor Analysis

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance that is observed in a much larger number of manifest variables. Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis\textsuperscript{16}.

1.14.5. Trend Analysis

An aspect of technical analysis that tries to predict the future movement of a stock based on past data. Trend analysis is based on the idea that what has happened in the past gives traders an idea of what will happen in the future\textsuperscript{17}.

1.14.6. Compound Growth Rate Analysis

Compound Annual Growth Rate (CAGR) is a metric that smooths annual gains in revenue, returns, customers, etc., over a specified number of years as if the growth had happened steadily each year over that time period. Using CAGR one can help investors compare growth rates over time between two companies or funds that would otherwise be difficult to compare due to volatility in year-to-year growth\textsuperscript{18}.

1.14.7. Path Analysis

In statistics, path analysis is used to describe the directed dependencies among a set of variables. This includes models equivalent to any form of multiple regression analysis, factor analysis, canonical correlation analysis, discriminate analysis, as well as more general families of models in the multivariate analysis of variance and co-variance analyses.
1.15. SELECTION OF VARIABLES FOR STUDY

In the present study, a number of key dimensions of financial variables have
been identified for the purpose of analysis and they are financial profitability,
financial structure, operating efficiency, profit based on sale, fixed assets efficiency,
current assets efficiency, stock position, working capital performance and liquidity
position of the companies. Computation of these variables has been made for a period
of ten years. An epigrammatic explanation of the selected variables is outlined below.

Table 1.2

List of Assessing the Various Dimension of Financial Performance through Ratio’s

<table>
<thead>
<tr>
<th>Variables code</th>
<th>Ratio’s of</th>
<th>Name of the dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Return on Total Assets</td>
<td></td>
</tr>
<tr>
<td>X₁</td>
<td>Return on Net Capital Employed</td>
<td>Financial Profitability</td>
</tr>
<tr>
<td>X₂</td>
<td>Return on Net worth</td>
<td></td>
</tr>
<tr>
<td>X₃</td>
<td>Debt Equity Ratio</td>
<td>Financial Structure</td>
</tr>
<tr>
<td>X₄</td>
<td>Long Term Debt to Equity</td>
<td></td>
</tr>
<tr>
<td>X₅</td>
<td>Net worth to Debt</td>
<td></td>
</tr>
<tr>
<td>X₆</td>
<td>Current Liabilities to Proprietors Fund</td>
<td></td>
</tr>
<tr>
<td>X₇</td>
<td>Current Assets Turnover</td>
<td></td>
</tr>
<tr>
<td>X₈</td>
<td>Creditors Turnover</td>
<td>Operating Efficiency</td>
</tr>
<tr>
<td>X₉</td>
<td>Debtors Turnover</td>
<td></td>
</tr>
<tr>
<td>X₁₀</td>
<td>Fixed Assets Turnover</td>
<td></td>
</tr>
<tr>
<td>X₁₁</td>
<td>Inventory Turnover</td>
<td></td>
</tr>
<tr>
<td>X₁₂</td>
<td>Capital Turnover</td>
<td></td>
</tr>
<tr>
<td>X₁₃</td>
<td>Inventory to Current Assets</td>
<td>Stock Position</td>
</tr>
<tr>
<td>X₁₄</td>
<td>Inventory to Total Assets</td>
<td></td>
</tr>
<tr>
<td>X₁₅</td>
<td>Inventory to Working Capital</td>
<td></td>
</tr>
<tr>
<td>X₁₆</td>
<td>Current Assets to Liquid Assets</td>
<td>Current Assets Efficiency</td>
</tr>
<tr>
<td>X₁₇</td>
<td>Current Assets to Sales</td>
<td></td>
</tr>
<tr>
<td>X₁₈</td>
<td>Current Assets to Working Capital</td>
<td></td>
</tr>
<tr>
<td>Variables code</td>
<td>Ratio’s of</td>
<td>Name of the dimension</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>X_{19}</td>
<td>Fixed Assets Ratio</td>
<td>Fixed Assets Efficiency</td>
</tr>
<tr>
<td>X_{20}</td>
<td>Net Fixed Assets to Equity</td>
<td></td>
</tr>
<tr>
<td>X_{21}</td>
<td>Net worth to Total Assets</td>
<td></td>
</tr>
<tr>
<td>X_{22}</td>
<td>Total Assets to Equity</td>
<td></td>
</tr>
<tr>
<td>X_{23}</td>
<td>Cash to Current Liabilities</td>
<td></td>
</tr>
<tr>
<td>X_{24}</td>
<td>Cash to Total Assets</td>
<td>Liquidity Position</td>
</tr>
<tr>
<td>X_{25}</td>
<td>Current Ratio</td>
<td></td>
</tr>
<tr>
<td>X_{26}</td>
<td>Quick Ratio</td>
<td></td>
</tr>
<tr>
<td>X_{27}</td>
<td>Total Income to Total Debt</td>
<td></td>
</tr>
<tr>
<td>X_{28}</td>
<td>Working Capital Turnover</td>
<td>Working Capital performance</td>
</tr>
<tr>
<td>X_{29}</td>
<td>Working Capital to Sales</td>
<td></td>
</tr>
<tr>
<td>X_{30}</td>
<td>Gross Profit to Sales</td>
<td>Profitability based on Sales</td>
</tr>
<tr>
<td>X_{31}</td>
<td>Net Profit to Sales</td>
<td></td>
</tr>
<tr>
<td>X_{32}</td>
<td>Operating Profit to Sales</td>
<td></td>
</tr>
</tbody>
</table>

The following variables are considered to assess the growth position of the sugar companies during the period of study.

**Table 1.3**

List of Assessing the Trend and Growth Position of Sugar Industries on the Selected Variables

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Annual production and consumption of sugar industry in world</td>
</tr>
<tr>
<td>2</td>
<td>Area, Yield, Production of sugarcane, production, consumption and recovery of sugar in Indian sugar industry</td>
</tr>
<tr>
<td>3</td>
<td>Annual production of sugar in selected private sector sugar companies in Tamil Nadu</td>
</tr>
<tr>
<td>4</td>
<td>Annual sales of selected private sector sugar companies in Tamil Nadu</td>
</tr>
<tr>
<td>5</td>
<td>Annual crushing of sugarcanes by selected private sector sugar companies in Tamil Nadu</td>
</tr>
</tbody>
</table>
1.16. SELECTION OF PERIOD FOR THE STUDY

The period for this study is covered ten years from 2002-03 to 2011-12 and the essential data for this period have been collected from six companies. The financial year runs from 1st April to 31st March every year.

1.17. OPERATIONAL DEFINITION OF THE CONCEPT

Financial Performance and Profitability Analysis

Apart from computing the financial performance of sugar industries, the study also attempts to analyse the various variables, which are expected to have influence over the profitability of sugar industries. For this purpose, a multivariate approach viz., Correlation Analysis, Multiple Regression Analysis, Factor Analysis and Path Analysis have been adopted. The data of selected variable have been pooled for ten years of time period namely 2002-03 to 2011-12.

Assessing the Financial Performance through Ratios

The following factors are identified by the researcher to assess the financial performance through profitability of the sugar industry in Tamil Nadu. Nevertheless, these factors are also responsible for the profitability of the sugar industry in either direction. Accounting and financial analysis literature is replete with suggestion to use the information contained in a large number of financial ratios, to derive empirically smaller number of dimensions necessary to evaluate the performance of an organisations. Nine financial dimensions which emerged consistently for the ten year period are as follows:

1. Financial Profitability: This factor is composed of two ratios which are return on net worth and return on capital employed. This ratio suggests whether a particular firm is profitable or not. All these ratios together indicate how the sector is meeting the expectation of its shareholders.
2. **Financial structure**: This factor is composed of different ratios namely, debt-equity ratio, long term debt to equity, net worth to debt and current liabilities to proprietors fund. All these ratios show the importance of debt in the capital structure of sugar sector which in turn indicates whether firms within sugar sector use debt in their capital structure.

3. **Operating efficiency**: The term operational efficiency refers to effective, profitable and rational use of resources available to the concern. In order to examine the judicious utilisation of resources as well as the wisdom and farsightedness in observing the financial policies laid down in this regard, certain ratios are computed. This factor is composed of six ratios namely, current assets turnover, creditor’s turnover, debtor’s turnover, fixed assets turnover, inventory turnover and capital turnover ratios are calculated to measuring the efficiency of the sugar industry.

4. **Stock Position**: It shows the relationship between the cost of goods sold and the amount of average inventory. In these three ratios namely inventory to current assets, inventory to total assets and inventory to working capital are calculated for the purpose of evaluating and review of inventory policy of the sugar industry. A high inventory ratio indicates efficient inventory management and efficiency of business operations.

5. **Current Assets efficiency**: This is measured by computing three ratios namely, current assets to liquid assets, current assets to sales and current assets to working capital. Use of current assets becomes very important since how the sector manages resources for its day to day operations, depend on current assets.

6. **Fixed Assets efficiency**: Fixed asset turnover ratio compares the sales revenue of a company to its fixed assets. This ratio tells us how effectively and
efficiently a sugar industry is using its fixed assets to generate revenues. This ratio indicates the productivity of fixed assets in generating revenues. If a company has a high fixed asset turnover ratio, it shows that the company is efficient at managing its fixed assets. Therefore, it is important to compare the asset turnover ratio over the years for the same company. This comparison will tell whether the company’s performance is improving or deteriorating over the years.

7. **Liquidity position**: Liquidity is the ability of a company to meet its short term obligations. One can understand the liquidity position by analysing the financial statements of a company which measure the liquidity by two ratios namely, current ratio and liquid ratio where financial items like current assets and current liabilities are required.

8. **Working Capital performance**: The working capital turnover ratio measures how well a company is utilising its working capital to support a given level of sales. Working capital is current assets minus current liabilities. A high turnover ratio indicates that management is being extremely efficient in using a firm's short-term assets and liabilities to support sales. Conversely, a low ratio indicates that a business is investing in too many accounts receivable and inventory assets to support its sales, which could eventually lead to an excessive amount of bad debts and obsolete inventory.

9. **Profitability based on Sales**: Ability to make maximum profit from optimum utilisation of resources by a business concern is termed as profitability. Profit is an absolute measure of earning capacity. Profitability depends on sales, costs and utilisations of resources. Profitability analysis consists of different elements i.e., study of sales, cost of goods sold and analysis of gross margin on sales operating profit.
1.18. LIMITATIONS OF THE STUDY

Some of the unavoidable limitations of the present work are as follows:

1. Financial information collected for the present study is entirely secondary in nature. In such a case, the study carries all the limitations inherent with the secondary data and financial information.

2. The study is restricted to selected companies and selected sector only for the period of ten years.

3. The study is restricted to sugar industry only because it is providing considerable employment and contribution to Indian economy.

4. While computing the data for the purpose of analysis, the approximation of decimal places leads to minor variations in ratios as well as percentage analysis and hence these are bound to exist in the present study.

5. Various accounting and statistical tools extensively used for the present study have their own incidental limitations.

1.19. CHAPTER ARRANGEMENT

This thesis is divided into six chapters,

□ The First Chapter deals with the introduction, statement of the problem, selection of the industry, objectives, significance, hypothesis, research methodology and limitations of the study.

□ The Second Chapter contains the review of literature.

□ The Third Chapter covers a brief profile of the selected private sector sugar industries in Tamil Nadu.

□ The Fourth chapter presents the analysis of the growth, trend, and relationship between variables, performance evaluation, and identification
of variables to construct a model for the classification and determining the factors that are influencing the various dimensions of financial performance of selected sugar industries in Tamil Nadu.

- The **Fifth Chapter** deals with the financial performance position of selected private sector sugar industries.

- The **Sixth Chapter** presents research findings, suggestions, conclusion of the Tamil Nadu private sector sugar industries and the scope of further research.
REFERENCES

13. www.tnscf.net.in/sugar-perform.pdf