CHAPTER 2

CONCEPTUAL FRAMEWORK FOR FINANCIAL ANALYSIS

2.1 INTRODUCTION

The main purpose of financial decision makers is to examine the earning capacity, performance efficiency, short term and long term solvency, financial position and ability to pay of the concerns. The basis for financial decision making is financial information. This information is usually contained in the financial statements. The term financial statements generally refer to five statements viz, profit and loss account, balance sheet, profit and loss appropriate account, fund flow statement and cash flow statement. Amongst these, profit and loss account statement and balance sheet statement are the basic and important statements for the purpose of financial analysis in order to judge the profitability and financial position of the firm.

Profitability is the most important measure to determine the health of sugar factory. Profitability of sugar factory in any one year is the relationship between the profit made and the funds employed to earn the profit. Profitability is ascertained after all the expenses are met, interest on advances and loans paid, reserves are built up and dividends are declared to the share holders.

The term financial soundness or position means the changes in fixed assets, long term liabilities and capital. The excess of fixed assets over the long term liabilities and capital shows the soundness of the sugar factory. The efficiency of a factory means the maximum utilization of physical, financial and human resources.

It can be observed that mere presentation of financial statements does not serve the purpose of financial decision makers. Financial statements fail to communicate valuable and varied information to the financial decision makers. Such varied information can be had from financial analysis.
The focus of financial analysis is a key figure in the financial statements and the significant relationships exist between them. 'The financial analysis is a process of evaluating relationship between the component parts of financial statements to obtain a better understanding of the firm’s position and performance'.

The first step involved in the financial analysis is to select the information relevant to the decision under consideration from the total information contained in the financial statements. The second step involved in the financial analysis is to arrange the information in a way to highlight significant relationships. The final step is interpretation and drawing of inferences and conclusions. In brief, financial analysis is the process of selection, relation and evaluation.

The main focus of this chapter is on ratio analysis. The ratio analysis is one of the most powerful tools of financial analysis. It is used as a device to analyze and interpret the financial health of the firm. Just like a doctor examines his patient by recording his body temperature, blood pressure etc., before arriving his conclusion regarding the illness and before giving his treatment, a financial analyst analyses the financial statements with various tools of analysis before commenting upon the financial health or weakness of an enterprise. A ratio is known as a symptom like blood pressure, the pulse rate or the temperature of an individual firm. It is with the help of ratios that the financial statements can be analyzed more clearly and decisions can be made from such analysis. This chapter deals with concept of financial analysis, objectives of financial analysis, tools of financial analysis, concept of ratio analysis, nature of ratio analysis, classification of ratios, importance of ratio analysis and statement of financial information.

2.2 CONCEPT OF FINANCIAL ANALYSIS

The term financial analysis refers to the process of determining financial strengths and the weakness of the firm by establishing strategic relationship between the items of the balance sheet, profit and loss account and other operative information. In other words, it is a process of evaluating the financial data in order to judge the profitability and financial position of any business concern.

According to Metcalf and Titard, “Financial analysis is a process of evaluating the relationship between component parts of financial statements to obtain a better understanding of a firm’s position and performance.”

It is the process of making an analytical study of the financial and operational data of a given concern and thereby satisfying the information as needs of the internal and external users of such data.

The purpose of financial analysis is to diagnose the information contained in financial statements so as to judge the profitability and financial soundness of the firm. The analysis and interpretation of financial statements is essential to bring out the mystery behind the figures in financial statements. It is an attempt to determine the significance and meaning of the financial statement data so that forecast may be made of the future earnings, ability to pay interest and debt maturities both current and long-term and profitability of a sound dividend policy. It is linked to a technique of x-ray ing the financial position as well as the process of a firm.

2.3 OBJECTIVES OF THE FINANCIAL ANALYSIS

The important objectives of the financial analysis are:

- To determine the earning capacity of the undertaking.
- To assess the financial position of the undertaking.

To know about the solvency and long-term liquidity of the undertaking.

To take appropriate judgment about the financial health of the undertaking.

To decide about the future prospects of the undertaking.

The above objectives of the financial analysis indicate the important implication that the analysis should provide information that is useful to present and potential investors and credit decisions. The analysis provides financial information about economic resources and obligations of a business firm. The analysis will help the stake holders in getting information about the change in the net resources.

2.4 TYPES OF FINANCIAL ANALYSIS

The classification of financial analysis into different types is related to the end users of information and the method of operation followed in the analysis. Based on the first category, financial analysis relates to external analysis and internal analysis. Based on the second category, the analysis is known as horizontal analysis and vertical analysis.

2.4.1 External V/s Internal Analysis

Analysis done to cater the needs or requirements of people who are external to the business is known as external type of financial analysis. Investors, creditors, depositors, RBI, government agencies, share holders etc, who are outsiders or external parties to the firm are covered by the external type of financial analysis.

Internal type of financial analysis includes statements made to cater the requirements of managerial personnel. This type of analysis is performed by the company’s finance and accounting department for management purposes. It is also conducted sometimes by executives and employees of the organization or by officers appointed for the purpose by governmental or court agencies under the regulatory and other jurisdictional powers over the business vested in them.
2.4.2 Horizontal V/s Vertical Analysis

Horizontal analysis is also called as dynamic analysis. It is based on data from year to year rather than on data relating to any one year. This type of analysis is based on comparison of the trend of each item in the financial statement over number of years or of companies. A number of columns are used to present horizontally the figures for the financial analysis.

Vertical analysis is related to presentation of figures relating to financial statement vertically. Vertical analysis is also known as static analysis. This type of financial analysis aims at judging the financial health of business for a particular year and is related to each element or component to the whole by expressing the same as a percentage of the whole. Vertical analysis is used to study through ratios, the quantitative relationship of various items in the financial statement over a particular date or for one accounting period. It is suggested by Srinivasan (1988) that to make it more effective, this analysis could be conducted over a number of years i.e. the data should be analyzed both vertically as well as horizontally.

2.5 TECHNIQUES OF FINANCIAL ANALYSIS OR TOOLS OF FINANCIAL ANALYSIS

The financial analysis is used to determine the financial position and results of operations as well. A number of techniques are used to study the relationship between different statements. An effort is made to use these techniques or methods or devices or tools which clearly analyze the position of the firm. The techniques of financial analysis are also termed as the tools of financial analysis. A financial analyst can adopt the following tools for analysis and interpretation of the financial statements:

1. Comparative statements,
2. Trend analysis,
3. Common-size statements,
4. Fund flow analysis,
5. Cash flow analysis,
6. Ratio analysis,

The ratio analysis is one of the most powerful tools of financial analysis. It is the process of establishing and interpreting the various ratios. It is with the help of the ratios that the financial statements can be analyzed more clearly and decisions can be made from such analysis. For this reason, the present study focuses on the ratio analysis. Chart 2.1 shows the classification of financial analysis techniques as under:

**Chart 2.1**

**Financial Analysis Techniques**

- Horizontal Analysis
  - Comparative financial statement
- Vertical Analysis
  - Trend Analysis
  - Common Size Statement
  - Ratio Analysis
- Other Tools
  - Fund flow Analysis
  - Cash flow Analysis
  - Break Even Analysis
  - Net Working Capital


**2.6 CONCEPT OF RATIO ANALYSIS**

A ratio is a numerical relationship between numbers or quantities. A ratio is only a comparison of the numerator with the denominator and is expressed as the ratio of numerator to denominator. A ratio expresses mathematical relationship between one number and another. The relationship can be expressed as fraction, integer, decimal or percentage. A ratio is a catch word which expresses the relationship between the two variables. This relationship helps to know the financial condition and performance of a firm when applied to the financial data. A ratio is customarily expressed in four ways viz: quotient,
percentage, proportion between two figures and depicted in diagrams and graphs.

Ratio analysis is a widely used tool of financial analysis. It is defined as the systematic use of ratio to interpret the financial statements so that the strength and weakness of a firm as well as its historical performance and current financial condition can be determined. Ratio analysis is a study of ratios between various items or groups of items in financial statements. They are always fascinating because they convey the impression of precision in analyzing the financial performance of any firm.

Financial ratios convey the impression of precision in analyzing financial performance of a firm. Financial ratios are tools of analysis. Ratios have a definite role in financial analysis i.e. disclosure role of financial characteristics, diagnostic role and predictive role.

At present ratio analysis is used by all industrial concerns in their financial analysis. Ratios are the valuable aids not only to the management of business concern but also to others who are interested in the analysis and interpretation of financial statements. Ratios are considered to be the best guide for the efficient execution of basic managerial functions like planning, forecasting and controlling etc. The technique of ratio analysis is of considerable significance in studying the financial stability, liquidity, profitability, quality of the management of the business and industrial concerns. It indicates a quantitative relationship which can be intern used to make qualitative judgment.

2.7 USES OF RATIO ANALYSIS

The use of ratios is not confined to financial managers only. There are other parties interested in the ratio analysis for knowing the financial position of a firm for different purposes. The supplier of goods on credit, banks, financial

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institutions, investors and shareholders all make use of ratio analysis as a tool in evaluating the financial position and performance of a firm for granting credit, providing loans or making investments in the firm. With the use of ratio analysis one can measure the financial condition of a firm and can point out whether the condition is strong, good, and questionable or poor. The conclusion can also be drawn as to whether the performance of the firm is improving or deteriorating.

The ratio analysis helps in decision making, financial forecasting and planning, assessing the operational efficiency, comparison of performance, locating the weak points, simplifying accounting figures and it helps for communicating.

Thus ratios have wide application and are of immense use today. The utility of the ratio analysis to different parties is briefly described as below:

➢ It is used by management to exercise control over the business and to make decisions to run business more efficiently and effectively,
➢ It is used by short-term creditors to make an assessment of liquidity before granting credit,
➢ It is used by long-term creditors to judge the solvency of the firm before lending loan,
➢ It is used by potential investors to judge the profitability and earning capacity of the firm,
➢ It is used by various Government departments like Income Tax, Sales Tax etc., to determine the tax liability of the firm,
➢ It is used by the employees of the firm to prepare grounds for collective bargaining and claim the bonus.

2.8 CLASSIFICATION OF RATIOS

In view of various users of ratios, there are many types of ratios which can be calculated from the information given in the financial statements. The user’s particular purpose is to determine the particular ratio that might be used for the financial analysis. For that purpose, the ratios can be classified according to the statement, tests and significance which are shown in the Chart 2.2.
Chart 2.2
CLASSIFICATION OF RATIOS

2.8.1 Statement Ratios

Classification according to the statement from which these ratios are calculated is known as statement ratios. This classification is also called traditional classification. Statement ratios are classified as under:

1) **Balance Sheet Ratios:** Balance sheet ratios deal with the relationship between the balance sheet items e.g. the ratio of current assets to current liabilities, or the ratio of proprietor’s funds to fixed assets. Both the items must pertain to the same balance sheet. The various balance sheet ratios have been listed in the Chart 2.3.

2) **Profit and Loss Account Ratios:** These ratios deal with the relationship between the profit and loss account items, e.g. the ratio of gross profit to sales. Both the items must belong to the same profit and loss account. The various profit and loss account ratios commonly used are listed in Chart 2.3.

3) **Composite Ratios:** These ratios exhibit the relation between a profit and loss account item and a balance sheet item e.g. stock turnover ratio. The most commonly used composite ratios are given in Chart 2.3.

<table>
<thead>
<tr>
<th>Balance Sheet Ratios</th>
<th>Profit and Loss Account Ratios</th>
<th>Composite Ratios</th>
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<tr>
<td>2. Liquid Ratio</td>
<td>2. Operating Profit ratio</td>
<td>2. Debtors Turnover ratio</td>
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<td>5. Proprietary Ratio</td>
<td>5. Expenses Ratio</td>
<td>5. Return on equity</td>
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<td>7. Assets – Proprietorship Ratio</td>
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<td>8. Capital Inventory to working capital ratio</td>
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<td>9. Ratio of current Assets to fixed Assets</td>
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2.8.2 Classification According to Tests

This is a classification based on the purpose for which an analyst computes these ratios. This classification is also called as functional classification. This satisfies various ratios and has been classified as below.

i) **Liquidity Ratios:** These are the ratios which measure the short term solvency or stability of a firm. These ratios convey a firm’s ability of to meet its current obligations. The various liquidity ratios have been listed in Chart 2.4.

ii) **Long Term Solvency Ratios:** These ratios convey a firm’s ability to meet the interest costs and repayment schedules of its long term obligations. The various long term solvency ratios have been listed in Chart 2.4.

iii) **Activity Ratios:** These are calculated to measure the efficiency with which the resources of a firm have been employed. The various activity ratios have been listed in Chart 2.4.

iv) **Profitability Ratios:** These ratios measure the results of business operations or overall performance and efficiency of the firm. The various profitability ratios have been listed in Chart 2.4.

<table>
<thead>
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<th>Chart 2.4</th>
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<tr>
<td><strong>Functional Classification of Ratios</strong></td>
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<tr>
<td>1) Liquidity Ratios</td>
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<tr>
<td>A) i) Current Ratio</td>
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<td>ii) Liquid Ratio</td>
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<td>iii) Absolute Liquidity Ratio</td>
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<td>B) i) Debtors Turnover Ratio</td>
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<td>iii) Inventory Turnover Ratio</td>
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<td>iv) Profitability Ratio</td>
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2.8.3 Significance Ratios

Classification of ratios according to significance is used for inter-firm comparison. For inter-firm comparison, the ratios may be classified as primary ratios and secondary ratios. The primary ratio is one which is of the prime importance to the concern. The return on capital employed is termed as primary ratio. The other ratios which support or explain the primary ratio are called secondary ratios, e.g. the relationship of operating profit to sales, or the relationship of sales to total assets of the firm.

2.9 IMPORTANT RATIOS USED IN FINANCIAL ANALYSIS

The various ratios used in financial analysis are grouped under the following heads:

- Liquidity ratios
- Leverage ratios
- Activity ratios or Turnover ratios
- Profitability ratios

2.9.1. Liquidity Ratios

Liquidity refers to the ability of a concern to meet its current obligations as and when these become due. Liquidity means financial position of a company. The liquidity ratios measure the ability of a firm to meet its short term obligations and reflect the short term financial strength or solvency of a firm. To measure the liquidity of a firm, the following ratios can be calculated.

i) Current Ratio

Current ratio signifies the relationship between current assets and the current liabilities. Current ratios is also called as working capital ratio. Current assets include stocks of raw materials, stores, work in progress, finished goods, book debts, receivables, prepaid expenses, quoted investments which can be readily converted into cash, cash in hand or at bank. Current liabilities cover all
short-term obligations which must be met within a year. These include borrowings and others, sundry creditors, outstanding expenses, tax provisions, proposed dividend, interest accrued but not due on loans, provision for bonus etc. The following formula is used to calculate current ratio –

\[
\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}
\]

Current assets: Current assets refer to assets which can be converted into cash within a year. It includes cash and bank balance, marketable securities, short term investment, bills receivable, debtors, inventories and prepaid expenses.

Current liabilities: Current liabilities refer to liabilities which are short term maturing obligations to be met within a year. It includes borrowings, creditors, outstanding expenses, tax provisions, proposed dividend, interest accrued but not due on loans, provision for bonus etc.

This ratio indicates whether the concern has instant ability to pay of the current liabilities as they mature and whether it can face unforeseen reverses by the strength of its liquid position. There is no rigid stipulation as to what should be the ideal current ratio for any industry. The current ratio of 1.5: 1 to 2:1 is usually considered as satisfactory applicable to all concerns. A very high current ratio is not desirable as it would mean less efficient use of funds. Similarly a low current ratio would mean too much of strain on the working capital resources. Generally, the higher current ratio represents greater margin of safety, the more factory’s ability to meet its current obligations. Current ratio is a test of quantity and not quality.

ii) Liquid Ratio: Liquid ratio is the ratio between quick assets and current liabilities. This ratio is also known as acid test ratio or quick ratio. It is computed by dividing the total of the quick assets by total current liabilities. It is calculated as under:
Quick assets
Liquid ratio = \[\frac{\text{Quick assets}}{\text{Current liabilities}}\]

Quick assets = Current assets - (Inventory + Prepaid expenses).

It is very useful in measuring the liquidity position of a firm. It measures the firm's capacity to pay off current obligations immediately and is more rigorous test of liquidity than the current ratio. An ideal acid test ratio is generally taken as 1: 1. A ratio of less than 0.5 is considered as most unsatisfactory situation. This ratio indicates the dependence of an institution on inventory for liquidity.

\(iii)\) \textit{Current Assets to Total Assets Ratio}: This ratio is used to reflect the degree of liquidity preference adopted by the business organization and is calculated as below:

\[
\text{Current assets to Total assets ratio} = \frac{\text{Current assets}}{\text{Total assets}}
\]

This ratio shows the changes in the liquidity position of the sugar factories during the study period. The total assets include current and fixed assets like land, building, plants and machinery, vehicles, furniture's, office equipments etc as indicated in the balance sheet statement of the selected sugar factories.

\(iv)\) \textit{Cash Ratio}: Cash ratio is the ratio between absolute liquid assets and current liabilities. This is also called as absolute liquid ratio. This ratio is expressed as:

\[
\text{Cash ratio} = \frac{\text{Absolute liquid assets}}{\text{Current liabilities}}
\]

Absolute liquid assets include cash in hand, bank balance, marketable securities and short term investment. It should also be calculated together with current ratio and acid rest ratio so as to exclude even receivable from the current assets and find out the absolute liquid assets.
v) **Inventory Ratio:** This ratio is computed by dividing inventory by net working capital.

\[
\text{Inventory ratio} = \frac{\text{Inventory}}{\text{Net working capital}}
\]

Here net working capital = Current assets – Current liabilities

Inventory ratios measure the extent to which the net working capital finances the current assets. Inventory ratio is also called as inventory (stock) to working capital ratio. A ratio equal to unity indicates that the net working capital of the sugar factory was tied up in inventory. A ratio less than unity indicate the dependence of sugar factories more on the net working capital to form the current assets.

**2.9.2 Leverage Ratios**

Leverage ratios are also known as capital structure ratios. This ratio shows the long term financial position. These ratios are also called as long term solvency ratios. The capital structure of almost all firm consists of the major components:

1) Equity capital i.e. capital that belong to owners and investors.

2) Debt capital i.e. amount that belong to creditors or borrowed funds.

Ratios which based on the relationship between borrowed funds and owners capital such ratios are known as capital structure ratios, leverage ratios, gearing ratios and solvency ratios. These ratios measure the contributions of financing by owners compared with financing provided by creditors. These ratios therefore explain the comparative interest of owners and creditors. Following are important leverage ratios:

1) **Debt - Equity Ratio:** Debt – equity ratio is the ratio between borrowed funds and owner’s capital. This is also known as trading on equity ratio or external-internal ratio. This is calculated by any of the two methods:
Debt - equity ratio = \frac{\text{Long term debt}}{\text{Share holders' funds}}

Debt represents only long term liabilities and not current liabilities.

This ratio represents the proportion of external equity to internal equity in the capital structure of the firm. Usually a ratio of 50:50 is considered as good for industries. Too much dependence on internal equities may lead to over capitalization, resulting in inadequate returns on proprietary funds. Too much dependence on external equities and borrowings may leads to under capitalization, resulting in shortage of working capital.

ii) Equity Ratio: A variant to the debt – equity ratio is the equity ratio. This is also known as proprietary ratio. This ratio establishes the relationship between share holder’s funds to total assets of the firm. This ratio can be calculated as under:

\text{Equity ratio} = \frac{\text{Share holders’ funds}}{\text{Total assets}}

Total assets mean total current assets and total fixed assets. It measures the proportion of the firm’s assets that are provided by the owners.

iii) Fixed Assets to Networth Ratio: This ratio establishes the relationship between the fixed assets and share holders funds. This ratio can be calculated as follows:

\text{Fixed assets to Networth ratio} = \frac{\text{Fixed assets}}{\text{Net worth}} \times 100

Networth is nothing but share holder funds. This ratio indicates the extent to which share holders funds are sunk into the fixed assets. The standard ratio in this type is considered as 60%. This ratio can be expressed in percentage.

iv) Total Liabilities to Total Assets Ratio: This ratio is the ratio between the total liabilities to outsiders to the total assets of a firm. This ratio is used to compare the amount of money that the factory owes to its creditors in relation to
the amount of equity capital invested in the factory. This ratio is also called as solvency ratio. This ratio can be expressed in percentage.

Total liabilities include short term, medium term and long term loans, borrowed funds from other institutions and other liabilities. The owned funds includes paid up share capital, reserves, other funds and net profits. It can be calculated as follows.

\[
\text{Solvency ratio} = \frac{\text{Total liabilities to outsiders}}{\text{Total assets}}
\]

Generally, lower the ratio of total liabilities to total assets, more satisfactory results.

v) Interest Coverage Ratio: This ratio indicates whether the firm earns sufficient margin to pay periodically the interest charges. It can be calculated as follows:

\[
\text{Interest coverage ratio} = \frac{\text{Net profit before interest and tax}}{\text{Fixed interest charges}}
\]

It measures the liability of firm to protect the interest of long term creditors. The ideal level of this ratio is taken as 4 to 5 times.

vi) Fixed Assets to Owned Funds Ratio: This ratio is computed by dividing the fixed assets by owned funds of the factory.

\[
\text{Fixed assets to Owned funds ratio} = \frac{\text{Fixed assets}}{\text{Owned funds}}
\]

Fixed assets include land, buildings, plant & machinery, furniture’s & fixtures, office equipments, laboratory, library etc. These assets cannot readily convertible into cash and they remain fairly permanent.

### 2.9.3 Activity Ratios or Turnover Ratios

Activity ratios are concerned with measuring the efficiency in asset management. The efficiency with which assets are managed directly affects the volume of sales, better the management of assets, the larger is the amount of sales and the profit. These ratios indicate whether the assets are used efficiently
in the business activities or not. These ratios are also called asset utilization ratios or turnover ratios. Because they indicate the speed with which assets are converted or turnover into sales. The turnover ratio indicates the effectiveness with which how efficiently the factory is utilizing different assets in the business. This ratio is also called as turnover ratio or performance ratio. This measures the operating efficiency of an enterprise. The important activity ratios are explained here under:

i) **Inventory Turnover Ratio:** This ratio is calculated by dividing the cost of goods sold by average inventory. This ratio measures the effectiveness of the sales efforts of the sugar factories. This ratio is worked out as under:

\[
\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}
\]

\[
\text{Cost of goods sold} = \text{sales} - \text{gross margin}
\]

\[
\text{Average inventory} = \frac{\text{Opening inventory} + \text{closing inventory}}{2}
\]

Higher the inventory turnover ratio better would be the performance of the sugar factories. This ratio is used to assess the average stock required to meet the day to day sugar sales of the factory.

This ratio indicates the efficiency of a firm’s inventory management. This ratio gives the rate at which stocks are converted into sales and then into cash. If the ratio is high then the efficiency will be considered of high level, but if the ratio is low then steps will have to be taken to increase sales.

ii) **Debtors Turnover Ratio:** This ratio is the ratio between net credit sales and trade debtors. It shows the rate at which cash is generated by the turnover of debtors. This ratio is calculated by credit sales by average debtors. It is calculated as below.

\[
\text{Debtors turnover ratio} = \frac{\text{Credit sales}}{\text{Average debtors}}
\]
Opening debtors + closing debtors

Average debtors = \[\frac{\text{Opening debtors} + \text{closing debtors}}{2}\]

This ratio indicates as to how many days average sales are tied up in the amount of debtors.

**iii) Total Assets Turnover Ratio:** This ratio is the ratio of total sales to total assets. The ratio is worked out as under:

\[
\text{Total assets turnover ratio} = \frac{\text{Total sales}}{\text{Total assets}}
\]

The ratio indicates the efficiency with which the firm is utilizing its investment in fixed assets. This ratio should normally be 6 times depending upon the nature of the business.

This ratio indicates the number of times total assets are being turnover in forming the sugar sales operation and sales efforts made by the sugar factories. A lower ratio indicates accumulation of fixed assets and a higher ratio indicates a weak composition of total sales.

**iv) Working Capital Turnover Ratio:**

This ratio is useful in assessing the efficiency of the total working capital used in the business operation. This ratio is calculated by dividing total sales by total working capital. This is computed as under.

\[
\text{Working capital turnover ratio} = \frac{\text{Total sales}}{\text{Total working capital}}
\]

Total working capital = current assets – current liabilities.

This ratio shows whether working capital is efficiently utilized or not. This ratio should be 5 times. Higher the ratio, greater would be the efficiency and larger the rate of profitability.
v) **Capital Turnover Ratio:**

This ratio is computed by dividing sales by total capital employed. This ratio is calculated as under.

\[
\text{Capital turnover ratio} = \frac{\text{Sales}}{\text{Total capital employed}}
\]

This ratio indicates the efficiency with which capital employed in a business is properly utilized or not. This ratio should be 2 times.

vi) **Creditors Turnover Ratio:**

This ratio is the ratio between net credit purchase and the average amount of creditors outstanding during the year. This ratio is calculated as follows.

\[
\text{Creditors turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average creditors}}
\]

Net credit purchases = credit purchases – returns to suppliers.

\[
\text{Average creditors} = \frac{\text{Opening creditors} + \text{closing creditors}}{2}
\]

This ratio is an important tool of financial analysis as a firm can reduce its requirement of current assets by replying on supplier’s credit.

2.9.4 **Profitability Ratios**

Profitability is measure of efficiency and control. Measurement of profit is the function of accounts whereas measurement of profitability is the function of financial analysis. These ratios measure the profitability of the concern. These ratios are calculated to measure the efficiency of the firm. Efficiency of a firm is measured in terms of margin or profit. So, these ratios are called profitability ratios. These ratios help the creditors and investors in deciding whether to invest or not. These ratios can be determined on the basis of either sales or investments. These ratios are used to measure the financial status and over all over efficiency.
of a business organization. These ratios are used to compare the returns over the investments made in the business.

The important profitability ratios employed in the present study are described as below:

A) Profitability Ratios in relation to Sales are:

i) **Gross Profit Ratio:** This ratio indicates the relationship between gross profits and sales. This is calculated as follows,

\[
\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Sales}} \times 100
\]

Gross profit = sales - cost of goods sold.

This ratio shows the profit made on the sales. It highlights the production efficiency of a firm. The standard gross profit ratio is usually taken as 30 percent.

ii) **Net Profit Ratio:** This ratio measures the relationship between net profits and sales of a firm. This ratio can be computed as below.

\[
\text{Net profit ratio} = \frac{\text{Net profit}}{\text{Sales}} \times 100
\]

This ratio expresses the cost price effectiveness of the operation. High ratio indicates the decline in selling price, rise in cost of production and fall in demand for the product. A low ratio has the opposite implications. This ratio should be about 6.5 percent.

iii) **Expenses Ratio:** Expenses ratio is the ratio of expenses to net sales. This ratio is worked out as under;

\[
\text{Expenses ratio} = \frac{\text{Individual items of expenses}}{\text{Net sales}} \times 100
\]

This ratio help in exercising control over the expenses and throws light on the causes affecting changes in the net profit.
B) Profitability Ratios in relation to Investments are:

i) Return on Capital Employed Ratio: This ratio is the ratio between net profit and capital employed. This ratio is calculated as under:

\[
\text{Return on capital employed} = \frac{\text{Net profit after tax}}{\text{Capital employed}} \times 100
\]

This ratio reflects the efficiency and profitability of activities, effectiveness of financial plan and profitable use of invested capital. This ratio is helpful in making comparative study of the alternative investment opportunities for a business firm. The ideal return on capital ratio is 10 percent.

ii) Return on Equity Capital Ratio: This ratio is the ratio of net profit to equity capital. This ratio is calculated as below:

\[
\text{Return on equity capital} = \frac{\text{Net profit after tax}}{\text{Equity share capital}} \times 100
\]

This ratio measures the profit percentage for equity share holders. This is used for interim comparison to judge the comparative profitability of different firms.

iii) Earnings Per Share Ratio: This ratio is the ratio of net profit to number of equity shares. This ratio is calculated as follows:

\[
\text{Earnings per share} = \frac{\text{Net profit after tax & preferential dividend}}{\text{Number of equity shares}}
\]

This ratio measures the profitability of the firm per share.

2.10 INTERPRETATION OF RATIOS

Computation of ratios does not necessarily lead to proper conclusion. Conclusion depends on interpretation of ratios under the existing situations. The following four approaches are generally employed for interpreting the ratios.
2.10.1 Interpretation of Individual Ratios:

Ratios are interpreted individually and independently or with standard norms. This practice is followed to find out the significant implications. It is done with reference to some standards to arrive at some meaningful implications.

2.10.2 Time Series of Financial Ratios:

Ratios based on a set of financial statements are helpful however they are often found inadequate. They are likely to be influenced by transitory forces and they may not reflect secular changes. Hence, it is worthwhile to study the behavior of ratios over a period of time.

Interpretation of ratios by trend involves computing and comparing over a period of time of an individual ratio or group of related ratios for reaching conclusion regarding increase, decrease or construct trend.

2.10.3 Interpretation by referring to a Group of Ratios

Ratios are useful in financial analysis. However they will be meaningful if made by computing some additional related ratios. A change in one ratio may be of significance only when viewed in relation to other ratios.

2.10.4 Interpretation by Inter Firm Ordinary Average Comparison

This method of interpretation involves comparison of ratios of one firm with the ratios of other firms in the same industries or with the industry. Average inter firm comparisons may be significant as some of the other firms considered for comparison may be experiencing the same or similar financial problems. A full fledged analysis of financial statements must be made by using all the above four approaches for generating and arriving at relevant conclusion.

2.11 STATEMENTS OF FINANCIAL INFORMATION

The end product of financial accounting is the financial statements comprising the balance sheet and profit and loss account. These statements are therefore the sources of information, on the basis of which conclusion can be
drawn regarding the firm's operations. The analysis of financial statements depends on the nature and type of information available therein.

### 2.11.1 Balance Sheet

The balance sheet is a significant financial statement of a firm. It provides information about the financial position of a firm at a particular point of time. The financial position of a firm as disclosed by the balance sheet refers to its resources and obligations and the interest of owners in the business. It contains information regarding assets, liabilities and shareholders equity.

**i) Assets**

Assets may be described as valuable resources owned by a firm which have been required at a measurable money cost. Asset is an economic resource. The assets are given under the following heads.

- **a) Fixed Assets**: Fixed assets are those which are purchased for use over a long period. These assets are meant to increase production capacity of the firm. They are not acquired for sale but are used for a considerable period of time. They are shown distinctly from each other, e.g., goodwill, land and building, plant and machinery, furniture etc. These assets are shown at their original cost.

- **b) Current Assets**: Current assets are either cash in hand and at bank or shortly converted into cash. The assets like debtors, bill receivable, stock in trade etc.

- **c) Investment**: They represent investment of funds in the securities of another company. They are long term assets outside the business of the firm. The purpose of such investments is either to earn a return or to control another company.

- **d) Other Assets**: They are called deferred charges, i.e., advertisement expenditure, preliminary expenses and so on. They are pre-payment for services or benefits.
ii) **Liabilities:** Outside sources from which a firm can borrow are called as liabilities. It may be defined as the claims of outsiders against the firm. Liabilities can be classified as follows:

a) **Long Term Liabilities:** The sources of funds included in them are available for period exceeding one year. The sources of long term borrowings are debentures, bonds, mortgages and secured long term loans from financial institutions and commercial banks. They have to be repaid either in lump sum at the maturity of the loan / debentures or in installments over the dues of the loan.

b) **Current Liabilities:** Such liabilities are obligations to outsiders repayable in a short period, usually within the operating cycle of the firm. These liabilities include accounts payable, bills payable, tax payable, accrued expenses, deferred income, short term bank credit etc.

iii) **Share holders Equity or Owners Equity:** It refers to the claims of the owners of the business against the assets of the firm. Owner's equity may be viewed as that part of the resources of a firm which are supplied by its owners. The owners of a business are known as share holders. There are two types of share holders viz: ordinary and preference. The preference share holders are entitled to a stated amount of dividend and return of principle on maturity.

Ordinary share holders are entitled to the income or assets of the firm remaining after the claims of creditors / preference share holders are met in full. This is also known as the equity of the owners. It consists of two elements - paid up capital and retained earnings.

2.11.2 **PROFIT AND LOSS ACCOUNT**

Profit and loss account is a flow statement which shows the operations of a firm in a given period of time reflected in the margin or loss earned by it. It is also called income statement. Thus, the income statement of a firm reports the results of operations in terms of revenue and net margin of a firm in a year. In operational terms it consists of revenue items, investments, the expenses items and the difference between them i.e. net profit for a year.
1) **Revenues**: One group of items listed in the income statement is known as revenues. The term revenue may be defined as the income that accrues to the firm by the sale of goods / services / assets or by the supply of the firm’s resources to others. In other words, it means the value that a firm receives from its customers. The value / income can arise from three sources viz, Sale of products, goods, services, supply of firm’s resources to others and sale of assets like plant, machines etc.

2) **Use of External Economic Resources**: The second source of revenue is obtained by investing a firm’s resources outside and earning interest, rent, dividend, royalty, commission, fees etc.

3) **Expenses**: The cost of earning revenue is called expenses. An important item of expenses in the income statement is the cost of goods sold. Expenses includes material cost, labour cost and other manufacturing expenses such as fuel and power, repairs and maintenance, consumable stores, insurance of goods etc. The general and administrative expenses include salary, managerial remuneration, rent, rates, tax, and staff welfare expenses and so on.

2.11.3 **NET INCOME / MARGIN / PROFIT**

The difference between revenues and expenses is net margin. It also shows the appropriate of the net profits between dividends paid to the share holders and retained earnings or amount transferred to reserves and supply. This last item is transferred to the balance sheet in the owners’ equity. Thus, it is a link between the income statement and the balance sheet.

Financial statements of a firm contain useful information as discussed above. They provide information which is as good or as bad as the data itself. Nevertheless, they provide information which is an important tool of financial analysis. This information helps to ascertain liquidity ratios, capital structure ratios, performance ratios and profitability ratios of the firm.
2.12 IMPORTANCE OF RATIO ANALYSIS

The computation and the implications of the important ratios can be calculated from the financial statements of a firm. As a tool of financial analysis, they are of crucial significance. The importance of ratio analysis lies in the fact that it presents facts on a comparative basis and enables the drawing up of inferences regarding the performance of a firm. Ratio analysis is relevant in assessing the performance of a firm in respect of the following aspects.

a) Liquidity Position: With the help of ratio analysis conclusion can be drawn regarding the liquidity position of a firm. The liquidity position of a firm would be satisfactory if it is able to meet its current obligations when they become due. A firm can be said to have the ability to meet its short term liabilities, if it has sufficient liquid funds to pay the interest on its short-maturing debt usually within a year as well as the principal. This ability is reflected in the liquidity ratios of a firm. The liquidity ratios are particularly used in credit analysis by banks and other suppliers of short-term loan.

b) Long Term Solvency: Ratio analysis is equally useful for assessing the long term financial viability of a firm. This aspect of the financial position of a borrower is of great concern to the long term creditors, security analysts and the present and potential owners of a business. The long term solvency is measured by the leverage and profitability ratios which focus on earning power and operational efficiency. Ratio analysis reveals the strength and weakness of a firm in this respect.

c) Operational Efficiency: Yet another dimension of the usefulness of the ratio analysis relevant from the management point of view is that it throws light on the degree of efficiency in the management and utilization of its assets. It would be recalled that the various activity ratios measures this kind of operational efficiency. In fact, the solvency of a firm is in the ultimate analysis dependent upon the sales revenues generated by the use of its assets total as well as its components.
d) **Inter-Firm Comparison:** Ratio analysis not only throws light on the financial position of a firm but also serves as a stepping stone to remedial measures. This is made possible due to inter-firm comparison or comparison with industry averages. Inter firm comparison involves comparison of the ratios of a firm with those of others in the same line of business or for the industry as a whole reflects its performance in relation to its competitors. If the results are at variance with those of the competitors, the firm can seek to identify the probable reasons and in that light, take remedial measures. The present study focuses on inter firm comparison in order to find out the sickness and efficiency of the sugar industry.

### 2.13 RATIO ANALYSIS AND THE RESEARCH STUDY

The analysis, description of the concept, significance, utility, classification ratio analysis as a tool of financial management provides good insight into the most important technique for the financial and management analysis. The present research study has been greatly benefitted by the researches acquaintance with the technique of ratio analysis in the financial analysis of the sugar industrial units covered by the study. The researcher has made an extensive and intensive use of this technique in his study. The application of the technique of ratio analysis in the present study has yielded some very good results with substantial research value. Based on the study of the ratio analysis technique, the financial analysis of the study units of the sugar industries made in the subsequent part of this thesis has been quite rewarding.

### 2.14 CONCLUSION

Financial analysis is a process of evaluating the relationship between component parts of financial statements to obtain a better understanding of a firm's position and its performance. The purpose of financial analysis is to diagnose the information contained in the financial statements so as to judge the profitability and financial soundness of the firm. Financial analysis indicates the
important implication that the analysis should provide information that is useful to present and potential investors and credit decisions. It will help the stakeholders in getting information about the change in the net resources. Financial analysis can be classified into two categories. First category relates to external analysis and second category relates to internal analysis. The analysis is also known as horizontal analysis and vertical analysis.

A number of techniques are used to study the relationship between different statements. The techniques of financial analysis are also termed as the tools of financial analysis. A financial analyst can adopt the following tools for analysis and interpretation of the financial statements i.e. comparative statements, trend analysis, common-size statements, funds flow statements, cash flow statements, ratio analysis and cost-volume-profit analysis. The ratio analysis is one of the most powerful tools of the financial analysis. It is with help of the ratios that the financial statements can be analyzed more clearly and decisions can be made from such analysis on the basis of ratio analysis.

A ratio expresses mathematical relationship between one number and another. Ratio analysis is the study of ratios between various items or groups of items in financial statements. Ratios are the valuable aids not only to the management of business concern but also to others who are interested in the analysis and interpretation of financial statements. The ratio analysis helps in decision making, financial forecasting, planning, assessing the operational efficiency, comparison of performance, locating the weak points, simplifying accounting figures and communicating. A ratio is a measuring rod which measures relationship between two accounting figures. A comparative of two quantitative ratios shows precisely how adequate is the key item in relation to another.
Ratios can be classified on the basis of purpose for which an analyst calculates the ratios. There are four types of ratios: liquidity ratios, leverage ratios, activity ratios or turnover ratios, and profitability ratios.

Liquidity ratios are the ratios that measure the short-term solvency or stability of a firm. These ratios convey a firm's ability to meet its current obligations. Important liquidity ratios are the current ratio and liquid ratio. The current ratio signifies the relationship between current assets and current liabilities. The current ratio is also termed as the working capital ratio. The liquid ratio is the ratio between quick assets and current liabilities. The liquid ratio is also termed as the acid test ratio or quick ratio.

The leverage ratios convey a firm's ability to meet the interest costs and repayment schedules of its long-term obligations. These ratios are also termed as long-term solvency ratios. The various long-term solvency ratios are: debt-equity ratio, proprietary ratio, fixed assets to networth ratio, total liabilities to total assets ratio, interest coverage ratio, and fixed assets to owned fund ratio.

Activity ratios are calculated to measure the efficiency with which the resources of a firm have been employed. The various activity ratios are: inventory turnover ratio, debtors turnover ratio, total assets turnover ratio, working capital turnover ratio, capital turnover ratio, and creditors turnover ratio.

Profitability ratios measure the results of business operations or overall performance and efficiency of the firm. The various profitability ratios are: gross profit ratio, net profit ratio, expenses ratio, return on equity capital ratio, return on capital employed ratio, and earnings per share ratio.

Ratios are very important for mill owners, investors, creditors, bankers, and financial executives. Ratio analysis helps the management in determining the cost, efficiency, liquidity, and profitability so as to enable them to take...
intelligent decisions. It indicates a quantitative relationship which can be used to make a qualitative judgement.

Ratio analysis not only throws light on the financial position of a firm but also serves as a stepping stone to remedial measures. This is made possible due to inter firm comparison for comparison with industry average. Inter firm comparison involves comparison of the ratios of a firm with those of others in the same line of business or for the industry as a whole and reflects its performance in relation to its competitors. If the results are at variance with those of the competitors, the firm can seek to identify the probable reasons and take remedial measures in that direction. The present study focuses on inter industry comparison in order to find comparative efficiency of the sugar factories which are located in the Belgaum, Bagalkot and Bijapur districts of north Karnataka. In this study, ratio analysis is made and presented in the sixth chapter of this thesis.

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