CHAPTER – IV

DETERMINANTS OF FINANCIAL AND CAPITAL STRUCTURE

DETERMINANTS OF FINANCIAL AND CAPITAL STRUCTURE

4.0 INTRODUCTION:

The preceding chapter discusses the theoretical background of financial and capital structure and various theories related to capital structure. In the present chapter an attempt is made to discuss the variables indicating financial and capital structure and variables affecting to financial and capital structure.

According to the financial activities of the firm the ratios can be classified into various groups. Long-term and short-term creditors, owners and management are interested in financial analysis of the firm. Short-term creditors are interested in the liquidity position of the firm. Long-term creditors are interested in the long-term solvency and profitability of the firm. Owner's are interested in the firm's profitability and the financial position. And management is interested in evaluating every aspect of the firm's performance. Therefore, the ratios are classified in five categories according to its use and requirements as under:

1. **Liquidity Ratios,**
2. **Capital Structure Ratios,**
3. **Activity Ratios,**
4. **Profitability Ratios,**
5. **Assets Structure Ratios.**

4.1 LIQUIDITY RATIOS:

The liquidity ratios measure the ability of a firm to meet its short-term obligations and reflect the

short-term financial strength/ solvency of the firm. Liquidity is a pre-requisite for the very survival of a firm. The short-term creditors of a firm are interested in the short-term solvency or liquidity of a firm. But, liquidity implies from the view point of utilization of the funds of the firm which are idle or earn very little. So proper balance between liquidity and profitability is required for efficient financial management. The ratio which indicate the liquidity of a firm are:

a. Current Ratio,

b. Quick Ratio.

4.1.a CURRENT RATIO:

Current ratio is calculated by dividing current assets by current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets are those assets which can be converted into cash within a short period of time (one year). It include cash and bank balance, marketable securities, inventory, sundry debtors, semi finished (work-in-progress) and finished goods, bills receivables and prepaid expenses, etc.

The current liabilities defined as liabilities which are short-term maturing obligations to meet within a year. It includes creditors, bills payable, bank credit, provision of taxation, dividend payable, short-term bank loan, outstanding expenses, etc.

The current ratio is a measure of firm's short-term solvency. It is a crude measure of the firm's liquidity.

It is a quantitative rather than qualitative index of liquidity. The term quantitative referes to the fact that it takes into account the total current assets without making any distinction between various types of current assets such as cash, inventories, etc. It indicates the availability of current assets in rupees for every one rupee of current liability. An extremely high ratio signals excessive inventories for the current requirements and poor credit management in terms of over extended accounts receivable. A ratio of greater than one means the firm has more current assets than current liabilities. As a conventional rule, a current ratio of 2:1 is considered satisfactory. This rule is based on the logic that in a worse situation, even if the value of current assets becomes half, the firm will be able to meet its obligations. This ratio represents a margin of safety for creditors. The larger the amount of current assets in relation to current liabilities, the more the firm's ability to meet its current obligations. But in all cases an ordinary standard of 2 to 1 current ratio may be doing well, rather than firm's with 2 to 1 or even higher current ratios may be struggling to meet their current obligations, because, it does not measure the quality of current assets. Current liabilities are not subject to any fall in value. They have to be paid, while current assets can decline in value. It depends on the types of current assets. If it consist of doubtful and slow paying debtors or slow moving and obsolete stock of goods, then the firm's ability to pay bill is impaired, its short-term solvency is threatened. Thus too much reliance should not be placed on the current ratio.

4.1.b QUICK or ACID TEST RATIO:

Quick ratio is a measure of liquidity. It is a measurement of a firm's ability to convert its current assets quickly into cash in order to meet its current liabilities. This ratio is calculated by dividing quick assets with the current liabilities.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

An asset is liquid if it can be converted into cash immediately or without a loss of its value. Liquid assets would include cash, debtors after providing for bad and doubtful debts and securities which can be realized without difficulty. Liquid or quick liability refers to current liabilities less bank overdraft i.e. creditors, bills payable and outstanding expenses or accured expenses.

Quick ratio is a more rigorous test of liquidity than the current ratio and when used in conjuction it gives a better picture of the firm's ability to meet its short-term debts out of short-term assets. Generally, a quick ratio of 1:1 is considered satisfactory as a firm can easily meet all current claims.

This ratio is more reliable than current ratio, but it should be used cautiously. Generally, a quick ratio of 1:1 is considered to represent a satisfactory current financial condition. A quick ratio of 1:1 or more does not necessarily imply sound liquidity position[1], while deriving conclusions from this ratio, it should be remembered that all debtors may not be liquid, and cash may be immediately needed to pay operating expenses. It should also be noted that inventories are not available

to meet liquid liabilities, they can be used as a measurable extent to meet current liabilities because of their normal conversion into cash and bills receivable as well as due to their conversion at a profit in the ordinary course yielding a large number of cash. Thus a company with a high value of quick ratio can suffer from the shortage of funds, if it has slow paying, doubtful and long duration outstanding debtors. Whereas a company with a low value of quick ratio may really be prospering and paying its current obligations in time if it has been turning over its inventories efficiently. Thus when examined alongwith current ratio, quick ratio becomes an important indicator.

4.2 CAPITAL STRUCTURE RATIOS:

The short-term creditors and suppliers of raw materials are more concerned with the firm's short-term solvency. Long-term creditors, like debenture holders, financial institutions are more concerned with the firm's long-term financial strength. Therefore, a firm should have a strong short as well as long-term financial position. To judge the long-term financial position of the firm, financial leverage, or capital structure ratios are calculated. These ratios indicate mix of debt and owners equity. As a general rule, there should be an appropriate mix of debt and owner's equity in financing the firm's assets.

Leverage ratios may be calculated from the balance sheet items to determine the proportion of debt in total financing. Many variations of these ratios exist, but all these ratios indicate the same thing the extent to which the firm has relied on debt in financing assets. Leverage ratios are also computed from the profit and

loss items by determining the extent to which operating profits are sufficient to cover the fixed charges. Capital structure ratios are:

a. Debt-equity Ratio,
b. Proprietory Ratio or Total Equity to Total Assets Ratio,
c. Interest Coverage Ratio,
d. Long-term Debt to Total Assets Ratio,
e. Total Debt to Total Assets Ratio.

4.2.a DEBT-EQUITY RATIO:

The composition of a capital structure is normally studied by employing debt-equity ratio. The debt-equity ratio is an arithmetical expression of the relative composition of debt funds and equity funds of a firm. In short, it shows the relationship between debt and equity. 'Debt' represents the long-term funds raised from public through debentures, borrowings from banks and financial institutions. 'Equity' represents net worth i.e. total of equity and preference share, paid up capital plus reserve and surplus and reduced by fictitious assets[2]. This ratio is called 'gearing' in the U.K. and financial leverage in U.S.A.[3] This ratio indicates the relationship between the long-term funds provided by creditors and those provided by the firm's owner. It is commonly used to measure the degree of financial leverage[4]. These expressions support to describe the role of debt in helping to improve the earning of equity on the implicit assumption that additional debt can be raised at a lower cost than the return on investment[5].

Debt-equity ratio is employed as a principal tool for financial analysis. This ratio is useful to analyze

the composition of capital structure. Debt to equity ratio deals with solvency. This ratio is also known as total liabilities to shareholders equity. This ratio is calculated in various ways.

The fundamental objectives of calculating this ratio is to measure the relative interest of owners and creditors in the company. It also measures the extent of trading on equity. The accepted norm of this ratio is 1.5:1 or 2:1 in general practice, but it differs from industry to industry and company to company. For the purpose of analysis of the selected companies the debt equity ratio has been calculated as follows:

$$\text{Debt-equity ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

The total debt includes all debts, whether long-term or short-term, while shareholders equity consists of preference shares, equity shares, capital reserves, retained earnings and other reserves.

This ratio shows the extent to which the debt financing has been used in the business. A high ratio shows that the claims of creditors are greater than those of owners. A very high ratio is not desirable from the firm's point of view. A high debt company (also known as highly geared or levered) is able to borrow funds on very restrictive terms and conditions. During the period of low profits a highly debt financial company suffers great strains, it cannot earn sufficient profits even to pay the interest charges of creditors. As a result, their pressure and control are further tightened. To meet their working capital needs the firm

finds it difficult to get credit. It may have to borrow on highly unfavourable terms.

In general, lower borrowings are better. The ratio analysis indicates that the lower the percentage, the better it is i.e. equity must always be higher than debt otherwise outsiders' stake in the business can be a big burden which substantially can make the operating profit lowered due to interest charges. However, from shareholders' point of view, there is a disadvantage during the period of good economic activities if the firm employs a low amount of debt. Thus higher the debt-equity ratio, the larger the shareholders' earnings, when the cost of debt is less than the firm's overall rate of return on investment. Thus, there is a need to strike a proper balance between the use of debt and equity. The most appropriate debt-equity combination would involve a trade-off between return and risk.

The proportion of debt and equity of a concern depends upon the nature of the business and the economic conditions in which it is operating. In the analysis of long-term strength of a business, the ratio enjoys the same importance as the current ratio in the analysis of working capital.

4.2.b PROPRIETORY RATIO:

This ratio relates the shareholders' funds to total assets. It is calculated by dividing the shareholders' funds by the total tangible assets. It indicates the long-term solvency of the business.

$$\text{Proprietory Ratio} = \frac{\text{Shareholders' Funds}}{\text{Total Assets}}$$

or

$$\text{Proprietory Ratio} = \frac{\text{Total Equity}}{\text{Total Assets}} = \frac{TE}{TA}$$

Shareholders' funds include both preference and equity share capital plus reserve and surplus. Total assets represents the total fixed assets plus current assets. Total assets include goodwill as asset. If goodwill is excluded from total assets then the total shareholders' funds are to be divided by total tangible assets. This ratio shows the relationship between total equity and total assets. This ratio also shows that how efficiently the management have used the sources of the funds of the company. This ratio indicates the extent to which assets are financed through equity. The higher ratio indicates that majority of total assets are financed through equity and therefore has lower external obligations.

This ratio throws light on general financial strength of the company. It is of greater importance to creditors, since it enables them to find out the proportion of shareholders' funds in the total assets used in the business. A ratio above 50% is generally considered safe for the creditors, because, in worse situation they can return their investment from the company. This ratio indicates to which extent the company is able to meet its long-term obligations.

4.2.c INTEREST COVERAGE RATIO:

The interest coverage ratio or the times interest earned ratio is one of the most conventional ratio. The interest coverage ratio is the sum of net profit before interest and tax divided by interest charges. In the words of Brigham "The times interest earned ratio is

determined by dividing earnings before interest (EBIT) plus depreciation by the interest charges[6].

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT + Depreciation}}{\text{Interest}}$$

According to Mc Mullen, "The financial strength of a company indicates the margin of safety of the long-term creditors"[7]. He further observes that "the credit investor is very much concerned with the margin of safety of the income on the obligations, that is the number of extra times that the fixed interest have been earned"[8].

This ratio indicates the extent to which the earnings may fall without causing any embarrassment to the enterprise regarding the payment of the interest charges. A higher ratio is desirable but too high a ratio indicates that the firm is very conservative in using debt capital, and that is not using credit to the best advantage of shareholders. On the other hand, a lower ratio indicates the excessive use of debt or inefficient operations. Therefore, the firm should make efforts to improve the operating efficiency.

This ratio shows the number of times the interest charges are covered by funds that are ordinarily available for their payment. Interest coverage is calculated in relation to before tax earnings. Depreciation is a non-cash item. Therefore, funds equal to depreciation are also available to pay interest charges. And, therefore, here the ratio is calculated as earnings before depreciation, interest and tax divided by interest.

This ratio has its own limitation, it does not considered repayment of loan. Therefore, a more inclusive ratio the fixed charges coverage is calculated by dividing EBDIT by interest plus principal repayment. But as far as the present study is concerned it is not possible to calculate the same on account of non-availability of required data.

4.2.d LONG TERM DEBT to TOTAL ASSETS RATIO:

This ratio is calculated by long-term debt divided by total assets.

$$\text{Long-term Debt to Total Assets Ratio} = \frac{LTD}{TA}$$

Long-term debt exclude short-term liabilities while total assets include net fixed assets plus current assets. This ratio shows the extent to which total assets are financed by long-term debt. Higher ratio indicates higher proportion of long-term debt. It also implies that the company have a higher burden of interest payment on long-term debt. It also shows that the management is inefficient to use other resources. This position is unfavourable to the company. Even at the time of liquidation, the company have to pay its debt by selling its total assets. The lower ratio indicates that the management is very efficient in managing the long-term finance in total assets and in the business. They are able to manage the business with lower debt and they do not have any burden to pay its current obligations. However, one has to see that the fixed assets are not financed through short-term debt, otherwise it may lead to liquidity crunch.

4.2.e TOTAL DEBT to TOTAL ASSETS RATIO:

This ratio is calculated by total debt divided by total assets.

$$\text{Total Debt to Total Assets Ratio} = \frac{TD}{TA}$$

Total debt represents long-term debt plus current liabilities. While total assets represents the net fixed assets plus current assets i.e. summation of asset side of balance sheet. This ratio is calculated to judge the long-term financial position of the firm. This ratio indicates the use of funds provided by owners and lenders. Current liabilities i.e. non-interest bearing current obligations are generally excluded from the computation of leverage ratio. But they are important determinants of the firm's financial risk, since they represent obligations and exert pressure on the firm and restrict its activities. Thus, to assess the proportion of total funds, short-term and long-term provided by outsiders to finance total assets, this ratio is computed. The ratio indicates that how efficiently the long-term debt have been used to finance the total assets.

Total debt include short-term and long-term borrowings from financial institutions, debentures/ bonds, deferred payment arrangements for buying capital equipments, bank borrowings, public deposits and other interest bearing loan.

Higher ratio indicates that lenders have financed more in total assets and the owners have provided the remaining finances. It also implies that the company have a good reputation in the business world. Therefore the lenders are ready to invest their money in the firm

or the company can easily get funds from outside lenders.

4.3 ACTIVITY RATIOS:

Activity ratios measure how effectively the firm employs the resources at its command. These ratios involve comparisons between the level of sales and the investment in various assets accounts. The activity ratios presume that a proper balance should exist between sales and the various assets accounts, inventories, accounts receivables, fixed assets and others. These ratios are also called turnover ratios because they indicate the speed with which assets are being turned or converted into sales. Different activity ratios can be calculated to judge the effectiveness of assets utilization.

a. Inventory Turnover Ratio,
b. Debtor's Turnover Ratio and Average Collection Period,
c. Fixed Assets Turnover Ratio,
d. Total Assets Turnover Ratio,
e. Net Working Capital Turnover Ratio.

The above ratios are described in detail as follows:

4.3.a INVENTORY TURNOVER RATIO:

Inventory turnover ratio is also known as stock turnover ratio. It establishes relationship between cost of sales and average inventory. This ratio indicates whether investment in inventory is within its proper limit or not. It also indicates the efficiency of the firm in producing and selling its products. Besides

being an index of liquidity of a firm showing the rate at which inventories are converted into sales and then into cash. This ratio helps the financial manager to evaluate inventory policy.

Cost of goods sold and average inventory are the constituents of the ratio. Average inventory is calculated by taking inventory level at the opening date plus inventory levels at the end and dividing it by 2. For assets, the ratio is best expressed when the average inventory is compared with cost of goods sold. However, the ratio of sales to inventory may be used as substitute for the ratio of cost of goods sold to average inventory. Thus this ratio can be calculated in two ways.

$$\text{Inventory Turnover ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

and

$$\text{Inventory Turnover ratio} = \frac{\text{Sales}}{\text{Average Inventory}}$$

Inventory turnover ratio is an effective tool to measure the liquidity of inventory. Inventory turnover shows how rapidly the inventory is turning into receivable through sales. A high inventory turnover indicates good inventory management. A low inventory turnover may reflect dull business, over investment in inventory, accumulation of large stock, etc. A high level of sluggish inventory amounts to unnecessary tie up of funds, reduced profit and increased costs. If the obsolete inventory have to be written off, this will adversely affect the working capital and liquidity

position of the firm. However, a relatively high inventory turnover should be carefully analyzed. So for meaningful analysis they should be compared with similar ratios in the previous periods or with the ratio of other similar firms.

4.3.b DEBTOR'S TURNOVER RATIO and AVERAGE COLLECTION PERIOD:

This ratio is also known as receivables turnover ratio. It matches credit sales of a unit to trade debtors. This ratio indicates the number of times debtor's turnover each year. However, this is not immediately apparent from the debtor's turnover ratio and therefore, it has to be supplemented by the average collection period. The average collection period measures the quality of debtor's it indicates the speed of their collection. A short collection period implies the prompt payment by debtors. The average collection period should be compared against the firm's credit terms and policy to measure its credit and collection efficiency. On the other hand, an excessively long collection period implies a very liberal and inefficient credit and collection performance. This ratio is calculated by dividing the trade debtors by sales.

$$\text{Average Collection Period Ratio} = \frac{\text{Average Debtors}}{\text{Sales}} \times \text{No. of Working Days (360)}$$

The objective of comparision implies the average collection period is to learn how old the accounts are and partly to learn how fast cash will flow their collection. To measure firm's credit and collection efficiency the average collection period can compared

with its own credit terms. To have a comparative idea, the average collection period of firm should be compared with the industry average. If there is a great divergence between the two, there may be some reasons. The reasons may reveal that the firm manages its debtors more efficiently or not than the industry, or its credit policy is too liberal or too restrictive. Afterwards, this may warrant a change in the credit policy.

4.3.c FIXED ASSETS TURNOVER RATIO:

This ratio expresses the relationship between sales and fixed assets. Since investment in fixed assets is made for the ultimate purpose of affecting sales, this ratio is used to measure the fulfillment of that objective. This ratio is computed by dividing the sales by the average fixed assets.

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Average Fixed Assets}}$$

This ratio indicates how efficiently the company uses its fixed assets. The use of depreciated value of fixed assets in computing the fixed assets turnover may render comparision of firm's performance over period or with other firms meaningless. Therefore, gross fixed assets (GFA) may be used to calculate the fixed assets turnover for a meaningful comparision.

If the ratio is too high, it shows that the firm is over-trading on its assets. On the other hand, if it is too low, then it represents that the firm has made excessive investment in fixed assets. Since sales depend on many factors such as price, quality of goods, nature of salesmanship, etc., it is argued that no direct

relationship can be established between sales and fixed assets.

4.3.d TOTAL ASSETS TURNOVER RATIO:

The total assets turnover ratio is calculated by dividing the sales by total assets. This ratio shows the firm's ability in generating sales from all financial resources committed to total assets. Thus,

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

The total assets turnover ratio indicates the sales generated from investment in total assets. This ratio shows the firm's ability of generating sales from all the financial resources available to the firm. The firm's ability to produce a large volume of sales on a small total assets basis is an important part of the firm's overall performance in terms of profits.

4.3.e WORKING CAPITAL TURNOVER RATIO:

Working capital turnover ratio is calculated by dividing the sales by net working capital.

$$\text{Working Capital Turnover Ratio} = \frac{\text{Sales}}{\text{Average Working Capital}}$$

This ratio helps to measure the efficiency of the utilization of net working capital. It signifies that for an amount of sales, a relative amount of working capital is needed. If any increase in sales is contempleted, working capital should be adequate and

thus, this ratio helps management to maintain the adequate level of working capital.

4.4 PROFITABILITY RATIOS:

Profitability is a measure of efficiency and control. The profitability of a firm can be measured by its profitability ratio. It indicates the efficiency of a firm. A company should earn profits to survive and grow over a long period of time. Profits are essential, but it would be wrong to assume that every action initiated by management of a company should be aimed at maximizing profits, irrespective of social consequences.

The amount and rate of profit earned depend upon the quantum of investment committed. Profit is the difference between revenues and expenses over a period of time. Profit is the ultimate 'output' of a company and it will have no future if it fails to make sufficient profits. In the words of Drucker, except such infrequent cases, it is a fact that sufficient profits must be earned to sustain the operations of the business to be able to obtain funds from investors for expansion and growth and to contribute towards the social overheads for the welfare of the society[9]. Therefore, the financial manager should continuously evaluate the efficiency of the company in terms of profits. The profitability ratios are calculated to measure the operating efficiency of the company. Not only management of the company, but creditors and owners are also interested in the profitability of the firm. Generally, two major types of profitability ratios are calculated,

profitability in relation to sales,
profitability in relation to investment.

But the main question is how profit can be measured? There are various ways to measure the profit. Gross profit is the difference between sales and the manufacturing cost of goods sold. A number of companies in our country define gross profit as earning before depreciation, interest and taxes (EBDIT). Profit after tax (PAT) or Net Income (NI) are the most common measures of the profit. Taxes are not controllable by the management. To separate the influence of taxes, profit before taxes (PBT) may be computed. If the firm's profit has to be examined from the point of view of all investors (lenders and owners), then the appropriate measure of profit is operating profit. Operating profit is equivalent of earnings before interest and taxes (EBIT) when the firm does not have non-operating income.

Various profitability ratios are as follows:

a. Gross Profit Margin Ratio or OPI/Sale Ratio,
b. Net Profit Margin Ratio,
c. Cost of Goods Sold Ratio,
d. Operating Income to Total Gross Assets Ratio (OPI/TGA),
e. Profit before Tax to Total Net Assets Ratio (PBT/TNA),
f. Return on Assets (ROA) Ratio,
g. Return on Shareholders Equity.

4.4.a GROSS PROFIT MARGIN RATIO (OPI/Sale):

This ratio is calculated by dividing the gross profit by sales.

$$\text{Gross Profit Margin Ratio} = \frac{\text{Gross Profit}}{\text{Sales}}$$

This ratio reflects the efficiency with which management produces each unit of product. This ratio indicates the average spread between the cost of goods sold and the sales revenue. When one subtract the gross profit margin from 100%, one obtains the ratio of cost of goods sold to sales. Both these ratios show profit relative to sales after the deduction of production costs, and it indicates the relation between production cost and cost of goods sold. A high gross profit margin relative to the industry average implies that the firm is able to produce at relative lower cost.

A high gross profit margin ratio is a sign of efficient management. A gross profit margin ratio may increase due to any of the following factors[10].

a. Higher sales prices, cost of goods sold remaining constant.
b. Lower cost of goods sold, sales prices remaining constant.
c. A combination of variations in sales prices and costs, the margin widening and,
d. An increase in the proportionate volume of higher margin items.

The analysis of these factors shows that how a depressed gross profit margin can be improved.

A low gross profit margin may reflect higher cost of goods sold due to the firm's inability to purchase raw materials at favourable terms, inefficient utilization of plant and machinery or over investment in plant and machinery resulting in higher cost of production. This ratio will also be low due to a fall in prices in the market. The finance manager must be able to detect the causes of a falling gross margin and initiate action to improve the situation.

This is also considered as one of the determinant of capital structure as a measure of profitability. Here again it is operating income which has a same meaning as stated above and divided by sales. Thus, this ratio indicates the profitability of the organization, which may in turn decide whether the company will go for the external equity or will go for raising the debts.

4.4.b NET PROFIT MARGIN RATIO:

The second profitability measure in relation to sales is the net profit margin ratio. The net profit margin ratio is measured by dividing profit after tax by sales.

$$\text{Net Profit Margin Ratio} = \frac{\text{Net Profit}}{\text{Sales}}$$

Net profit margin ratio establishes a relationship between net profit and sales. This ratio indicates the efficiency of management in manufacturing, administering, and selling the products. Net profit margin ratio is the overall measure of the firm's ability to turn each rupee sales into net profit. If the net margin is inadequate, the firm will fail to achieve satisfactory return to shareholder's funds. This ratio also indicates the firm's capacity to withstand adverse economic conditions. A firm with a high net profit margin ratio would be in an advantageous position to survive in the face of falling selling prices, rising cost of production. It would really be difficult for a low net margin firm to withstand these adversities. Same way, a firm with high net profit margin can make better use of favourable conditions, such as rising selling prices, falling costs of production or increasing demand for the product. Such a firm will be able to improve its

profits at a faster rate than a firm with a low net profit margin.

4.4.c COST OF GOODS SOLD RATIO:

Another profitability ratio related to sales is cost of goods sold ratio. This is the ratio of cost of goods sold plus operating expenses to net sales. This ratio is calculated by

$$\text{Cost of Goods Sold Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Net Sales}}$$

This ratio is very important for analyzing the profitability of a concern. A high operating ratio is not good since it will leave a small amount of operating income to meet interest, dividends, etc. For getting proper idea of behaviour of operating expenses, the ratio is to be compared with different companies. The variations in operating ratio may occur due to different factors such as, changes in the sales price, changes in the goods sold and operating expenses, changes in the proportionate share of sales of different products with varying gross margins.

The expense ratio of a firm should be compared with the ratios of other similar firms and the industry average. This will give an idea about

(i) whether the firm is paying higher or lower salaries to its employees or officers with respect to other firms,

(ii) whether its capacity utilization is high or low,

(iii) whether it is unnecessarily spending on advertisements and other sales promotional activities,

(iv) whether its cost of production is high or low, etc.

4.4.d OPERATING INCOME to TOTAL GROSS ASSETS RATIO:

This ratio is calculated by operating profit divided by total gross assets.

$$\text{Operating Income to Total Gross Assets Ratio} = \frac{OPI}{TGA}$$

This is considered as one of the determinant of capital structure. As explained in the theoretical discussion in the preceeding chapter, there are two different situations explaining the high or low use of debt by profitable companies. The trade-off theory explains the use of high debt by profitable companies, where as the pecking order theory gives the last preference to external equities. Considering this the said ratio OPI/TGA is selected as one of the indicator of profitability with reference to the total gross assets which are acquired by the organization over a period of time. Here the operating income is taken as gross profit minus interest but before depreciation and hence in the denominator the total gross assets are also total assets as disclosed in the balance sheet plus accumulated depreciation over a period of time. This ratio, indicates the capability of gross assets to generate surplus.

4.4.e PROFIT BEFORE TAX to TOTAL NET ASSETS RATIO:

This ratio is calculated by profit before tax divided by total net assets.

$$\text{Profit before Tax to Total Net Assets ratio} = \frac{PBT}{TNA}$$

The profit before tax considers interest on borrowings as an expenditure. Interest is tax deductible and therefore a firm which pays more interest pays less

taxes. Taxes are not controllable by management. To separate the influence of taxes, profit before taxes may be computed. If the firm's profit has to be examined from the point of view of all investors (lenders and investors), the appropriate measure of profit is operating profit. The operating profit is equivalent of earnings before interest and taxes when the firm does not have non-operating income. This measure of profit shows earnings arising directly from the commercial operations of the business without the effect of financing. The concept of profit before tax may be broadened to include non-operating income if they exist.

The ratio indicates that how well the firm is using the total net assets. By this ratio one can measure the profit in respect of total net assets. One can also measure the efficiency of management. Total assets are the main resource of the company. If they are using this assets efficiently the profit depends on the management of total net assets. The high ratio indicates that the company have an enough profit and due to sufficient profit the company can be expanded. The total net assets are an important factor in the business.

4.4.f RETURN ON ASSETS RATIO:

This ratio can be computed in three ways:

$$\text{Return on Total Assets Ratio} = \frac{\text{Net Profit}}{\text{Average Total Assets}}$$

This ratio is calculated by dividing net profit by average total assets. Average total assets is equivalent to opening assets plus closing assets divided by two. This ratio indicates that how much rate of return the

company can pay to the investors. Total assets represents pool of funds supplied by shareholders and lenders. If the company have a higher net income, it could distribute appropriate rate of return on total assets. Therefore, the company can raise funds very easily whenever it is needed, because the investors are interested generally in getting interest and repayment of principal regularly.

The another rate of return ratio to ensure internal consistency is net profit plus interest divided by average total assets.

$$\text{i.e. Return on Total Assets Ratio} = \frac{\text{Net Profit + Interest}}{\text{Average Total Assets}}$$

The interest is included in the net income. Therefore, the amount of net income will be increased. Thus, the rate of return on average total assets will also increase. If this ratio is high it implies that financial position or the profitability of the company is sound.

The third measure for operating profitability, the earning power is defined as:

$$\text{Earning power} = \frac{\text{Earnings before Interest and Taxes}}{\text{Total Average Assets}}$$

Return on net assets is the measure of the firm's operating performance. It indicates the firm's earning power. Return on net assets has increased on account of a higher operating leverage. All firms would like to improve their return on net assets. However, competition puts a limit on return on net assets and the firms may

have a trade-off between assets turnover and gross profit margin. Higher ratio indicates the efficient management of total net assets, it also indicates that the management is able to use such funds in a proper way. And they are aware of the market conditions. Due to high earning power the company can improve its financial position and sustain its reputation in the market.

4.4.g RETURN ON TOTAL SHAREHOLDERS' EQUITY RATIO:

The rate of preference dividend is fixed and the preference shareholders have a priority in receiving this dividend. The rate of equity dividend is not fixed, the earning may be distributed to equity shareholders or retained in the business. A return on all shareholders' equity is calculated to see the profitability of the owners investment. The shareholders' equity means common share capital, preference share capital, share premium and reserve and surplus less accumulated losses. One can calculate this ratio in two ways:

(i) RETURN ON TOTAL SHAREHOLDERS' EQUITY RATIO:

The return on total shareholders' equity is calculated by net profit after taxes divided by total shareholders' equity.

$$\text{Return on Total Shareholders' Equity Ratio} = \frac{\text{Net Profit}}{\text{Shareholders' Equity}}$$

This ratio reveals how profitably the owner's funds have been utilized by the firm. This ratio is one of the most important relationship in financial analysis. The earnings of a satisfactory return is the most desirable objective of a business. This ratio reflects the extent to which this objective has been accomplished. Therefore, this ratio is of great interest to the

present as well as prospective shareholders and also of great concern to management, which has the responsibility of maximizing the owners' welfare. This ratio should be computed with the ratios for other similar companies and the industry average. This will reveal the relative performance and strength of the company in attracting future investments.

(ii) RETURN ON SHAREHOLDERS' EQUITY RATIO:

The return on equity is net profit after taxes and after preference dividends divided by the shareholders equity.

Return on Shareholders' Equity Ratio

$$= \frac{\text{Net Profit - Preference Dividend}}{\text{Shareholders' Equity - Preference Equity}}$$

This ratio shows how effectively the firm has used the resources of the owners.

4.5 ASSETS STRUCTURE RATIOS:

The asset structure necessarily indicates the proportion of fixed assets to total assets. As generally, the long-term investment should be supported by long-term funds, the asset structure has its effect on capital structure. This asset structure is indicated by following two ratios:

a. Gross Fixed Assets to Total Gross Assets Ratio,
b. Net Fixed Assets to Total Net Assets Ratio.

4.5.a GROSS FIXED ASSETS to TOTAL GROSS ASSETS RATIO:

This ratio is calculated by gross fixed assets divided by total gross assets.

$$\text{Gross Fixed Assets to Total Gross Assets Ratio} = \frac{GFA}{TGA}$$

Gross fixed assets indicates the Gross Block of the Balance Sheet and the Total Gross Assets includes total assets plus total accumulated depreciation. This ratio indicates the proportion of fixed assets to total assets. Naturally this will be dependent on the type of industry and within the industry, this may vary from company to company. The current assets plays a very important role in the business. Current assets are required to meet the current obligations and the day to day transactions of the business. The company should have the proper policy for depreciation, because every asset depreciate every year and therefore after some time the company have to buy a new fixed assets for the business. Thus this ratio will indicate, that what should be the proportion of long-term funds in the total assets.

4.5.b NET FIXED ASSETS to TOTAL NET ASSETS RATIO:

This ratio is calculated by net fixed assets divided by total net assets.

$$\text{Net Fixed Assets to Total Net Assets Ratio} = \frac{NFA}{TNA}$$

Total net assets equal to net total assets. This ratio again indicates the asset structure of the company. This is on net base where both fixed assets as well as total assets are taken on net basis. After excluding depreciation, the proportion of fixed assets to total assets is indicated by this ratio, and

therefore, this ratio has its effect on the capital structure of the company.

4.5.c AVERAGE SIZE :

According to Titman[11], "It is also the case that relatively larger firms tend to be more diversified and less prone to bankruptcy. These arguments suggest that large firms should be more highly leveraged". He further suggest that "Small firm may be more leveraged than large firms and may prefer to borrow short term (through bank loans) rather than issue long-term debt because of the lower fixed costs associated with this alternatives". Based on these comments, Average size is taken as an indicator of size and the determinant of capital structure.

Average size is taken as total gross assets. It is total assets plus total depreciation.

REFERENCES

1. Pandey,I.M. :"Financial Management", Vikas Publishing House Pvt. Ltd., 1999, p.115.
2. Jain,P.:"Financial Management"; Pointer Publisher, Jaipur, 1991, p.54.
3. Batra. Bharti.: "Debt-Equity Norms In Indian Corporate Sector", The Chartered Accountant, Sept. 1981. p. 151.
4. Gitman Lawrence. J.: "Principles of Management Finance", Harper and Row Publishers, Singapore, 1985, p. 126.
5. Kulkarni. P. V.: "Business Finance Principles and Practice", Himalaya Publishing House, Bombay, 1988, p.381.

6. Brigham, E.F.:"Fundamentals of Financial Management", The Dryden Press, Hinsdale, Illinois, 1978, p.130.
7. Mc Mullen. S. Y.:"Financial statements", Richard. D. Irwin, 1968, P. 397.
8. Ibid p.398.
9. Drucker. P. F.:"The Practice of Management", January, 1968, pp. 99-100.
10. Kennedy. R. D. and Mc. Muller, S.Y.: "Financial Statements", Richard D. Irwin, 1968, p. 404.
11. Titman, S. and Wessels, R. :"The Determinants of Capital Structure Choice"; The Journal of Finance, 1991, Vol. 43, p. 6.