

Ratio Analysis

Meaning of Ratio

Absolute numbers tell very little. Assume that two companies A and B, operating within the same industry supply the information:

One can easily say that Company B makes the most profit. But which company is most profitable? The answer for this will naturally call for further additional information relating to profit such as size of the company, the total sales it generates or to how much capital is invested in it. Hence, an assessment or a judgment is made based on making some sort of comparison. Extending the example,

If net profit is compared with Sales, an assessment can be made on which company generates the most net profit per Re.1 received from customers. Company A : $\text{Net Profit} / \text{sales} * 100$ i.e. 5 percent and Company B it is 20 percent. If the net profit is expressed in terms of investments made by the owners in each company, it is $\text{Net Profit} / \text{Net worth} * 100$. For Company A, it is 10% and for it is 25%. It is also known as Return on Capital Employed. ROCE. Ratios are useful in two ways:

1. To make inter-business comparisons
2. To make comparisons across financial periods

A ratio is simply one number expressed in terms of another. It is a means of highlighting in arithmetical terms the relationship between figures drawn from various financial statements. Therefore, it refers to the numerical or quantitative relationship between two variables or items. A ratio expresses simply in one number the result of comparison between two figures. It is calculated by dividing one figure by the other. The quotient so obtained is the ratio of the figures.

Ratio can be expressed in the following three forms:

1. As proportion
2. As percentage
3. As turnover or rate

Company		
	A	B
NET PROFIT in Rs.	10,000	1,00,000

	A	B
Net Profit	10,000	1,00,000
Sales	2,00,000	5,00,000
Net worth Capital and Reserves]	1,00,000	2,00,000

The Dictionary meaning of Analysis is “separation or breaking up of anything into its elements or component parts”. Ratio Analysis is, therefore, a technique of analysis and interpretation of financial statements. Ratio analysis is the process of establishing and interpreting various ratios for helping in making certain decisions. It involves the methods of calculating and interpreting financial ratios to assess the firm’s performance and status.

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Scope

The ratio analysis is one of the most powerful tools of financial analysis. The firm is answerable to the owners, the creditors and employees. The firm can reach a number of parties. On the other hand, parties interested in the business can compute ratios based on the financial statements of the firm. The analysis is not restricted to any one aspect but takes into account all aspects such as earning capacity of the firm, financial obligation, liquidity and solvency aspects, liquidity and profitability concepts.

Objectives of Ratio Analysis

Interpreting the financial statements and other financial data is essential for all stakeholders of an entity. Ratio Analysis hence becomes a vital tool for financial analysis and financial management. Let us take a look at some objectives that ratio analysis fulfils.

What Does Ratio Analysis Tell You?

Investors and analysts employ ratio analysis to evaluate the financial health of companies by scrutinizing past and current financial statements. Comparative data can demonstrate how a company is performing over time and can be used to telegraph likely future performance. This data can also compare a company's financial standing with industry averages while measuring how a company stacks up against others within the same sector.

Advantages

The various advantages of ratio analysis are as follows:

a) Financial Forecasting and Planning

Ratio analysis helps in the financial forecasting and planning activities. Ratios based on the past sales are useful in planning the financial position. Based on this, future trends are set.

b) Decision Making

Ratio analysis throws light on the degree of efficiency. It is also concerned with the management and utilization of the assets. Thus, it enables for making strategic decisions.

c) Comparison

With the help of ratio analysis, ideal ratios can be composed. These can be used for comparison in respect of the firm's progress and performance, inter-firm comparison with industry average.

d) Financial Solvency

Ratios are useful tools. It indicates the trends in the financial solvency of the firm. Long term solvency refers to the financial liability of a firm. It can also evaluate the short term liquidity position of the firm. .

e) Communication

The financial strength and weaknesses of a firm are communicated in a more easy and understandable manner by the use of ratios. The

information contained in the financial statements is conveyed in a meaningful manner. It, thus, helps in the communication and enhance the value of the financial statements.

f) Efficiency Evaluation

It evaluates the overall efficiency of the business entity. Ratio analysis is an effective instrument which, when properly used, is useful to assess important characteristics of business liquidity, solvency, profitability. A critical study of these aspects may enable conclusions relating to capabilities of business.

g) Control

It helps in making effective control of the business. Actual results can be compared with the established standard and to take corrective action at the right time.

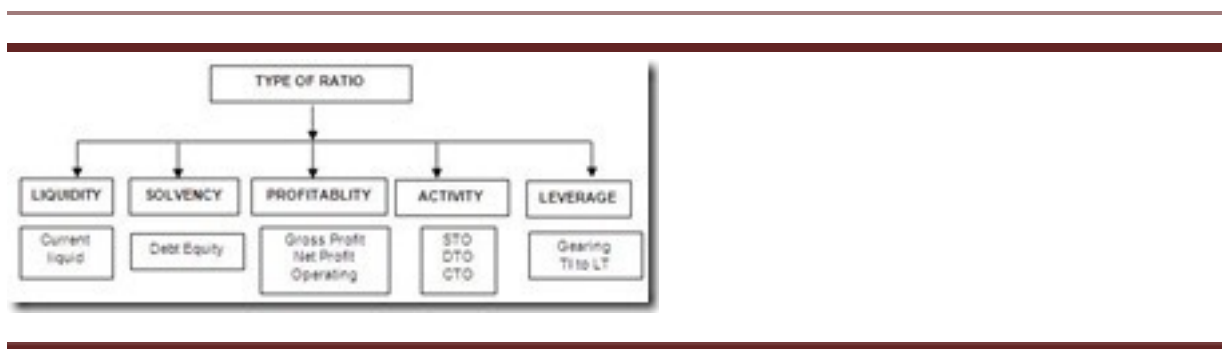
h) Other uses

Financial ratios are very helpful in the early and proper diagnosis and financial health of the firm.

Classifications Of Ratios

The diagrammatic representation of ratios are as follows :

Liquidity Ratio



It means the liquidity of the firm. Liquidity is the ability of the firm to meet its current liabilities as they fall due. Since the liquidity is basic to continuous operations of the firm, it is necessary to determine the degree

of liquidity of the firm. These are important because liquidity is close to the heart of the firm. A firm may have a high level of long term assets and substantial net income, but if they do not have enough cash on hand or assets that can be turned into cash fairly quickly, they will not be able to operate day to day. The liquidity ratios examine the current portion of the balance sheet : current assets and current liabilities. The implicit assumption is that current assets will be used to pay off current liabilities. This makes sense due to the matching principle (match the maturity of the debt with the duration of the need) e.g. one would not take a five year bank loan to pay off an account payable due in thirty days.

There are two ratios that determine how liquid a firm is : the current ratio and quick ratio.

1) Current Ratio

It is one of the popular financial ratios. It measures the firm's ability to meet its short term obligations. This is achieved by comparing the current assets of a business with its current liabilities.. The formula for current ratio is :

Current Ratio = Current Assets / Current Liabilities Example:

Current Assets

Stock

Debtors

Cash

Current Liabilities Creditors

Bank Overdraft

AB

Rs. Rs. 3,000 60,000 16,000 Nil 5,000 Nil

24,000 Nil Nil 10,000

The liquidity of the firms are determined by the amount of working capital available to the business. This is defined as current assets minus current liabilities. The current ratio is not expressed as a percentage but as a

proportion. The current ratio of the above two firms are: 1 for A and 5 for B. The ratio reveals a considerable difference between the two companies. Company B is five times more liquid than company A. Company A can only just cover its obligations to creditors in the short term, yet Company B can cover its obligation to the bank five times over.

Although company A would be less vulnerable if its ratio was higher, it can be argued that to have a ratio that is too high indicates inefficiency, in that too much working capital is available, which might be better invested in fixed assets. However, it is important to identify the specific types of current assets that are excessive such as

1. Excessive stock levels, indicating poor stock control or a decline in sales volume
2. Excessive debtors, indicating poor credit control and an increasing risk of bad debts
3. Excessive cash or near cash equivalents, indicating a lack of suitable investment opportunities in capital projects.

A rule of thumb is that a ratio of 2 : 1 (Rs.2 in current assets for every Re.1 of current liabilities) is acceptable. However, the current ratio may vary from less than one in such industries as fast foods to more than two in the telephone apparatus manufacturing industry. Consequently, it is important too utilize the industry averages.

A ratio that is much higher than the industry average indicates that the firm may have excessive current assets. Further investigation may demonstrate the cause of the excess. One reason may be that the firm is having trouble in the collection of its debtors or has high inventory, both of which will be identified through the use of other ratios. Another reason may be that the firm is holding too much cash or short term investments which could be earning more money if they were invested in long term instruments. Still another reason for a high ratio is that the firm may be at a specific point in its business cycle. The company that sells woolen goods in winter is expected to have high inventory in November, December, January and high debtors in February.

A ratio which is much lower than the industry average indicates that the firm is having liquidity problems, meaning that it may not be able to meet its short term obligations. Accordingly, an extremely low current ratio should be a red flag to the company being analyzed.

The components of current assets and current liabilities are:

Current Assets: Cash in hand, cash at bank, trade debtors, bills receivable, stock, prepaid expenses, trade investments, marketable securities

Current Liabilities: Trade creditors, bills payable, bank overdraft, outstanding or accrued expenses, tax payable, provision for tax, dividends payable.

2) Liquid Ratio

It is also known as Quick Ratio or Acid test Ratio. It is similar to current ratio except that it excludes inventory which is generally the least liquid current asset. The reason for eliminating inventory may be due to two primary factors

- a. Many types of inventory cannot be easily sold because they are partially completed items, obsolete items, special purpose items.
- b. The items are typically sold on credit. This results in the creation of trade debtors or bills receivables before being converted into cash.

Citing the example, in the case of company B, the only current asset that it carries is stock. The question must be asked : is this level of stock too high or might it be essential to this type of business ?

As stock is the least liquid of the current assets, prudence requires that liquidity be looked at in another way. If current assets excluding stock are compared with current liabilities, a more cautious assessment of the liquidity of the two companies is given.. This ratio is calculated as follows:

Acid Test Ratio = Current assets less Stock / current liabilities

The quick ratios for companies A and B are as follows :

$$A = 24,000 - 3,000 / 24,000 = 0.875$$

$$B = 50,000 - 50,000 / 10,000 = 0$$

This time the quick ratio indicates that company A has a considerably better liquidity from this point of view and company B is dangerously insolvent.

Solvency Ratios

The ratios are analyzed on the basis of long term financial position of a firm. It is also known as test of solvency or analyzing the debt. Many financial analysts are interested in the relative use of debt and equity in the firm. Debt refers to outside borrowings by the firm.

The debt position of a firm indicates the amount of other people's money being used in attempting to generate profits. The long term debts are of much importance to the firm since a firm is expected to commit the payment of periodic interest over the long run. In addition, repayment of loan after the expiry of maturity date has to be planned.

Since the creditor's claims must be satisfied before the distribution of earnings to shareholders, present and prospective shareholders pay close attention to the degree of indebtedness and ability to repay the debts. Lenders are also equally concerned about the indebtedness and the repayment modes. Hence, the solvency of the firm in particular needs consideration.

1) DebtRatio

Debt ratios are important because debt is widely considered to be a measure of the health of the firm and the risk associated with it. If a firm has high debt, they have fixed payments which must be made. This means that limited funds may be directed to debt payment (either principal or interest or both) instead of investments. .

The debt ratio is :

Total Liabilities / total assets

This ratio tells you how much of the firm's assets are financed with debt. A high debt ratio indicates that the firm may be carrying too much debt. This is of concern to the firm because it may not be able to repay the debt nor to borrow additional funds they are needed. Accordingly, a firm in this situation is considered risky because short term financing is limited and may not be available in an emergency.

A low debt means that the firm has a low level of liabilities compared to its total assets. Such a ratio indicates that the firm is not risky because it has plenty of financing available when compared to its need. However, a low ratio may also indicate that the firm should take on more debt. The reason for this is that the ability to borrow is considered a resource and a firm with low debt may not be taking advantage of this resource.

2) Debt : Equity Ratio

The debt : equity ratio is :

Long term Debt / Shareholder's equity

The debt-equity ratio deals with the long term liabilities and equity portion of the balance sheet. Note that shareholders' equity includes retained earnings (Equity may also be known as net worth). The debt-equity ratio provides information on the capital structure (relationship between debt and equity) of the firm. Such information is important because it affects the value of the firm. The value of the firm is important because it has an impact on the ability to raise funds., either through increased borrowing or the sale of shares or both.

A high debt-equity ratio indicates a poor capital structure because it signifies that the firm has high debt in comparison to its level of shareholders' equity. This means that the firm's creditors may be concerned about the repayment of debt, which in turn leads to high interest rates, which in turn leads to higher required returns on the firm's potential investments..

A low debt equity ratio is an indication that the firm is in sound financial position and therefore is not considered risky. Normally, the debt equity ratio vary tremendously from industry to industry.

Profitability Ratios

A firm's profitability can be assessed relative to sales, assets, equity or share value. The profitability ratios are important because they indicate whether the firm is doing what it set out to do : make a profit and provide a return to its investors. There are many measures of profitability. Each relates the returns of the firm with regard to the sales, assets, equity or share value. As a group, these measures enable to evaluate the firm's

earnings. The criteria for earnings can be related to a given level of sales,. A certain level of assets, the owner's investment or share value.

Earnings result in profits. Without profits, a firm may be handicapped to attract outside capital. The income statement of the firm shows the total profits earned by the firm during the preceding fiscal period. The important ratios which highlight the profitability of a firm would be as follows:

1) Gross Profit Ratio

It measures the percentage of each sales value remaining after the firm has paid for its goods. The higher the gross profit margin, the better and lower the relative cost of merchandise sold. Thus, it serves an important tool in shaping the pricing policy of the firm. The formula is :

$$\text{Gross Profit} = (\text{Gross Profit} / \text{Sales}) \times 100$$

Where Gross profit = Sales minus Cost of goods sold (COGS) Net Sales = Cash Sales + Credit Sales minus Sales Returns

It is normally expressed as a **percentage**. If we deduct gross profit ratio from 100, the ratio of COGS is obtained..

2) Expenses Ratio

These ratios indicate the relationship of various expenses to net sales. Individual expenses are calculated based on the net sales and indicated as a percentage to net sales.

3) Net Profit Ratio

It is also known as Net Profit Margin. It measures the percentage of each sales in rupee after all expenses including taxes have been deducted This ratio provides considerable insight into the overall efficiency of the business. A higher ratio speaks about the overall efficiency of the business. It also focuses the attention of the better utilization of total resources. A lower ratio would mean a poor financial planning and low efficiency. A net profit margin of 1 percent or less would be unusual for a grocery store which a net profit margin of 10 percent would be low for a retail stores. It is divided by net income by net sales. The formula is :

$$\text{Net Profit Ratio} = (\text{Net Profit after taxes} / \text{Net Sales}) \times 100$$

The net profits are calculated after excluding the income tax, the non-operating incomes and non-operating expenses. It is expressed as a percentage on net sales..

Activity Ratios

These are used to measure the speed with which various **accounts** are converted into sales or

cash. Measures of liquidity are generally inadequate due to the composition of the firm's current assets and current liabilities. The activity ratios are also known as turnover ratios. Some of the turnover ratios are as follows :

Stock Turnover Ratio : **STO** Debtors Turnover Ratio : **DTO** Creditors Turnover Ratio : **CTO**

1) Stock Turnover Ratio

It commonly measures the activity or liquidity of the firm's stock.. The STO is also known as stock velocity. Velocity refers to "speed" with which an object travel. Here, it is the speed on converting the stock into sales then to cash. It indicates the number of times the stock has been turned over as cash during a given period of time. It evaluates the efficiency with which a firm is able to manage its stock.

If the cost of goods sold (COGS) is known, the STO can be calculated as follows: $STO = COGS / \text{Average stock at cost}$

Where $COGS = \text{Net Sales} - \text{Gross Profit}$

$\text{Average Stock} = \text{Opening} + \text{Closing Stock} / 2$

If COGS is not known, it can be computed as follows: $STO = \text{Net Sales} / \text{Stock}$

2) Debtors Turnover Ratio : DTO

It is also known as Debtors velocity. The birth of debtor comes from **credit** sales. Total debtors include the Bills Receivable also. The Bills receivables are written promise of trade debtors. Trade debtors are normally provided with 3 months credit time. After the expiry, they will pay cash. Thus, debtors are expected to be converted into cash within a short period. Therefore, it is included in the current assets. It is calculated as follows :

$DTO = (Debtors + BR / Net\ credit\ sales) \times Number\ of\ working\ days$

DTO indicates the velocity of debt collection of firm. It indicates the number of times average debtors convert themselves over into cash during a year. Debtors care should always be taken on gross value/ Do not deduct the bad debts or provision for doubtful debts. It is expressed as the number of times.

If DTO is given in months, convert it into a common base period. If it is given as a number of times, do not reduce it to a base period.

3) Creditors Turnover Ratio : CTO

Creditors come into being out of credit purchases. Creditors include both trade creditors and bills payables. It is included in the current liability since the payment has to be made within three months normally. The formula is as follows :

$CTO = (Creditors + Bills\ Payable / Credit\ purchases) \times 100$

Where credit purchases = Total purchases minus cash purchases.

Leverage Ratio

A firm's capital structure is the relation of debt to equity as sources of the firm's assets.. Normally both the owners and the creditors of the business will be interested in analyzing its capital structure. The ratios that deal with the leverage are as follows :

1) Capital Gearing Ratio:

It denotes the extent of reliance of a company on the fixed cost bearing securities viz. the preference share capital and the debentures as against the equity funds provided by the equity shareholders. The ratio is calculated as:

Capital Gearing Ratio : Fixed cost bearing capital / variable cost bearing capital

Where fixed cost bearing capital = preference share capital, debentures , long term bank borrowings.

Variable cost bearing capital = equity share capital, reserves and surplus.

If fixed cost bearing capital is more than the equity capital, i.e. if the ratio is more than 1, the firm is said to be highly geared. On the reverse, it is low geared.

2) Debt-equity Ratio:

The ratio compares the debt with equity. Debt refers to long term loans and liabilities.

Redeemable Preference shares are also considered as debt. This measure is helpful to assess the soundness of the long-term financial policies. It determines the relative stake of outsiders and shareholders in the company. Lower the ratio, it is considered more comfortable for the creditors financial position. 2 : 1 is taken as a satisfactory debt – equity ratio. However, it is not a very satisfactory measure. since the nominal values may bear very little relationship to their current market values. The calculation is as follows:

Debt – equity Ratio = Long term debts / Shareholders' funds + Long term debts

Limitations Of Ratio Analysis

Undoubtedly, ratios are precious tools in the hands of the analyst. But its significance comes from proper use of these ratios. Misuse or mishandling of these ratios and using them without proper context may lead the analyst or management to a wrong direction. The person who uses these ratios should be well versed and should possess expertise knowledge about making proper use of these ratios. Like all tools, ratios also suffer from several 'ifs' and 'buts' and for a thorough understanding of proper use of these ratios. There are certain limiting factors in the case of ratio analysis. These limiting factors are :

1. The user should possess the practical knowledge about the concerns and the industry in general.
2. Ratios are not an end. They are only means to an end.
3. A single ratio in itself is not important. The trend is more significant in the analysis. Comparison of ratios should be made.
4. For comparative purposes, there should be a standard ratio. There is no such standards prescribed for the ratios.
5. The accuracy and correctness of ratios are totally dependent upon the reliability of the data contained in the financial statement on the basis of which ratios are calculated.
6. To use ratios, first of all there should be uniformity in the accounting plan used by both the firms. In addition. There must be consistency in the preparation of financial statement and recording the transactions from year to year within that concern.
7. Ratios become meaningless if detached from the details from which they are derived. They should be used as supplementary and not substitution of the original absolute figures.
8. Time lag in calculation and communicating the same should not be unnecessarily too much.
9. The method of presentation should be precise and without any ambiguity.
10. Price level changes make the ratio analysis meaningless.
11. Inter-firm comparison should never be undertaken in the case of concerns which are not associated or comparable.
12. All techniques concerning the ratio analysis should be taken into account.

