**Financial & Management Accounting**

**Unit-3(I)**

**RATIO ANALYSIS**

# Meaning of Accounting Ratios:- accounting ratios are an important tool of financial statements analysis. A ratio is a mathematical number calculated as a reference to relationship of two or more numbers and can be expressed as a fraction, proportion, percentage and a number of times. When the number is calculated by referring to two accounting numbers derived from the financial statements, it is termed as accounting ratio.

# Objectives of Ratio Analysis

# Ratio analysis is indispensable part of interpretation of results revealed by the financial statements. It provides users with crucial financial information and points out the areas which require investigation. Ratio analysis is a technique which involves regrouping of data by application of arithmetical relationships, though its interpretation is a complex matter. It requires a fine understanding of the way and the rules used for preparing financial statements. Once done effectively, it provides a lot of information which helps the analyst:

# 1. To know the areas of the business which need more attention;

# 2. To know about the potential areas which can be improved with the effort in the desired direction;

# 3. To provide a deeper analysis of the profitability, liquidity, solvency and efficiency levels in the business;

# 4. To provide information for making cross-sectional analysis by comparing the performance with the best industry standards; and

# 5. To provide information derived from financial statements useful for making projections and estimates for the future.

# Ratio Analysis and its Applications

# Ratio analysis is a medium to understand the financial weakness and soundness of an organization. Keeping in mind the objective of analysis, the analyst has to select appropriate data to calculate appropriate ratios. Interpretation depends upon the caliber of the analyst.

# Ratio analysis is useful in many ways to different concerned parties according to their respective requirements. Ratio analysis can be used in the following ways:

# • To know the financial strength and weakness of an organization.

# • To measure operative efficiency of a concern.

# • For the management to review past year’s activity.

# • To assess level of efficiency.

# • To predict the future plans of a business.

# • To optimize capital structure.

# • In inter and intra company comparisons.

# • To measure liquidity, solvency, profitability and managerial efficiency of a concern.

# • In proper utilization of assets of a company.

# • In budget preparation.

# • In assessing solvency of a firm, bankruptcy position of a firm, and chances of corporate sickness.

# Advantages of Ratio Analysis:

# 1. Helps to understand efficacy of decisions: The ratio analysis helps you to understand whether the business firm has taken the right kind of operating, investing and financing decisions. It indicates how far they have helped in improving the performance.

# 2. Simplify complex figures and establish relationships: Ratios help in simplifying the complex accounting figures and bring out their relationships. They help summarise the financial information effectively and assess the managerial efficiency, firm’s credit worthiness, earning capacity, etc.

# 3. Helpful in comparative analysis: The ratios are not be calculated for one year only. When many year figures are kept side by side, they help a great deal in exploring the trends visible in the business. The knowledge of trend helps in making projections about the business which is a very useful feature.

# 4. Identification of problem areas: Ratios help business in identifying the problem areas as well as the bright areas of the business. Problem areas would need more attention and bright areas will need polishing to have still better results.

# 5. Enables SWOT analysis: Ratios help a great deal in explaining the changes occurring in the business. The information of change helps the management a great deal in understanding the current threats and opportunities and allows business to do its own SWOT (Strength- Weakness-Opportunity-Threat) analysis.

# 6. Various comparisons: Ratios help comparisons with certain bench marks to assess as to whether firm’s performance is better or otherwise. For this purpose, the profitability, liquidity, solvency, etc. of a business, may be compared: (i) over a number of accounting periods with itself (Intra-firm Comparison/Time Series Analysis), (ii) with other business enterprises (Inter-firm Comparison/Cross-sectional Analysis) and

# iii) with standards set for that firm/industry (comparison with standard (or industry expectations).

# Limitations of Ratio Analysis

# 1. Limitations of Accounting Data: Accounting data give an unwarranted impression of precision and finality. In fact, accounting data “reflect a combination of recorded facts, accounting conventions and personal judgements which affect them materially. For example, profit of the business is not a precise and final figure. It is merely an opinion of the accountant based on application of accounting policies. The soundness of the judgement necessarily depends on the competence and integrity of those who make them and on their adherence to Generally Accepted Accounting Principles and Conventions”. Thus, the financial statements may not reveal the true state of affairs of the enterprises and so the ratios will also not give the true picture.

# 2. Ignores Price-level Changes: The financial accounting is based on stable money measurement principle. It implicitly assumes that price level changes are either non-existent or minimal. But the truth is otherwise. We are normally living in inflationary economies where the power of money declines constantly. A change in the price-level makes analysis of financial statement of different accounting years meaningless because accounting records ignore changes in value of money.

# 3. Ignore Qualitative or Non-monetary Aspects: Accounting provides information about quantitative (or monetary) aspects of business. Hence, the ratios also reflect only the monetary aspects, ignoring completely the non-monetary (qualitative) factors.

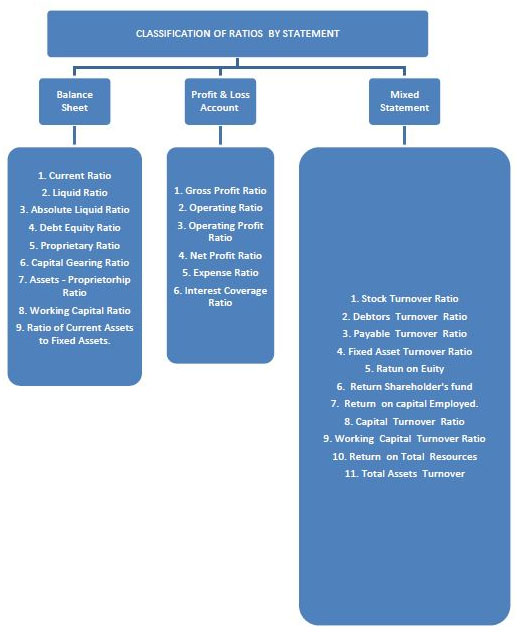
# 4. Variations in Accounting Practices: There are differing accounting policies for valuation of inventory, calculation of depreciation, treatment of intangibles Assets definition of certain financial variables etc., available for various aspects of business transactions. These variations leave a big question mark on the cross-sectional analysis. As there are variations in accounting practices followed by different business enterprises, a valid comparison of their financial statements is not possible.

# 5. Forecasting: Forecasting of future trends based only on historical analysis is not feasible. Proper forecasting requires consideration of non-financial factors as well.

**Types of Ratio**

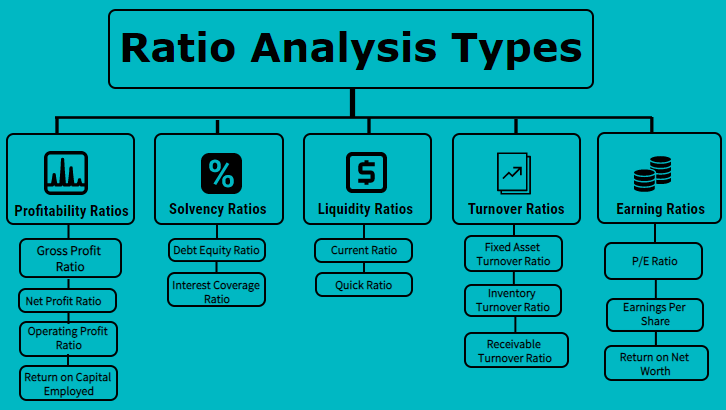
Ratios are classified on the basis of the parties of their usage. Accounting ratios are used to indicate the financial position of a firm. Ratios are classified:

* On the basis of Balance Sheet
* On the basis of Profit & Loss Account
* On the basis of Mixed Statement



**The above classification further grouped into:**

* Liquidity Ratio
* Profitability ratio
* Turnover Ratio
* Solvency Ratio



# LIQUIDITY RATIOS

# The scope to which there is quick convertibility of assets in to money, for the purpose of paying obligation of short-term nature can be termed as liquidity. Apropos to obtaining an indication of a firm’s ability to meet its current liabilities, the utility of the liquidity ratios is instrumental. As a flipside, however, it does not bring to the light, the effectiveness of the optimal management of cash resources. It is also termed as Short-Term Solvency Ratios. To measure the liquidity of a firm, the following Liquidity ratios are commonly used:

# 1) Current Ratio:

# The relationship between current assets and current liabilities is established by Current Ratios. . It attempts to measure the ability of a firm to meet its current obligations. Current assets and current liabilities comprise of two pivotal components of this ratio. Assets that can be easily converted into cash, within the time frame of less than a year, can be termed as current assets. While, conversely, current liabilities encompass those liabilities which can be paid off with in a year.

# Current Ratio = Current Assets / Current Liabilities

# The ideal current ratio is 2: 1. It is a stark indication of the financial soundness of a business concern. When Current assets double the current liabilities, it is considered to be satisfactory. Higher value of current ratio indicates more liquid of the firm’s ability to pay its current obligation in time.

# Advantages of Current Ratio:

# It measures the liquidity of the firm

# It represents the working capital position of a firm

# It represents the liquidity of a company

# It represents margin of safety

# Its tells us the short term solvency of a firm.

# Disadvantages of Current Ratio:

# Its accuracy can be deterred as, pertaining to different businesses, depending on a variant of factors

# Over-valuation of stock also contributes to its tipping accuracy

# It measures the firm liquidity on the basis of quantity and not quality, which comes across as a crude method.

# 2) Quick Ratio or Acid Test Ratio:

# The acid test ratio is a stringent and meticulous test of a firm’s ability to pay its short-term obligations ‘as and when they are due. Quick assets and current liabilities can be associated with the help of Quick Ratio.

# The ideal Quick Ratio is 1: 1 and is considered to be appropriate. High Acid Test Ratio is an accurate indication that the firm has relatively better financial position and adequacy to meet its current obligation in time.

# Quick Ratio = Liquid Asset (Current Assets – Stock & Prepaid Expenses) / Current Liabilities

# Advantages of Quick Ratio:

# It tells us the liquidity position of a firm

# It is used to remove the errors of current ratio

# It is used as supplementary to the current ratio.

# 3. Absolute Liquid Ratio:

# The relationship between the absolute liquid assets and current liabilities is established by this ratio.

# Absolute Liquid Assets take into account cash in hand, cash at bank, and marketable securities or temporary investments. The most favourable and optimum value for this ratio should be 1: 2. It indicates the adequacy of the 50% worth absolute liquid assets to pay the 100% worth current liabilities in time. If the ratio is relatively lower than one, it represents the company’s day-to-day cash management in a poor light. If the ratio is considerably more than one, the absolute liquid ratio represents enough funds in the form of cash in order to meet its short-term obligations in time.

# Absolute Liquid Ratio = Absolute Liquid Ratio / Current Liabilities

# So that were the 3 important Liquidity ratios that one must know in order to find out the short term solvency position of a company. In our next blog we shall learn about profitability ratio.

## Profitability Ratios

The capacity of a business concern to earn profit can be termed as profitability. Thus, profit earning can be ascertained on the basis of the volume of profit margin of any activity and is calculated by subtracting costs from the total Revenue accruing to a firm during a particular period. The overall efficiency or performance of a business can be ascertained with the help of profitability ratios. Generally, a large number of ratios can also be put to implementation for determination of the profitability, as the same is in consonance with the sales or investments.

**The important** [**profitability ratios**](https://www.edupristine.com/blog/ratio-analysis-ratios-formulae) **are discussed below:**

* Gross Profit Ratio
* Operating Ratio
* Operating Profit Ratio
* Net Profit Ratio
* Return on Investment Ratio
* Return on Capital Employed Ratio
* Earning Per Share Ratio
* Dividend Payout Ratio
* Dividend Yield Ratio
* Price Earning Ratio
* Net Profit to Net worth Ratio

#### 1. Gross Profit Ratio

Gross Profit Ratio is the formative component in relationship between gross profit and net sales. Higher

Gross Profit Ratio is a precursor to the business concern that the firm has higher profitability. It is also

reflective of the standard of performance of firm’s business apropos to its effectiveness.

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| **Gross Profit Ratio = Gross Profit / Net Sales X 100** |

**Advantages**

* The relationship between gross profit and net sales is adequately ascertained by it
* It reflects the efficiency and productivity of a firm
* This ratio highlights to the management, that a low gross profit ratio can be a precursor to the adverse purchasing and mark-up policies
* A low gross profit ratio also underlines the incapacitated state of the management to increase sales

### 2. Operating Ratio:

Operating Ratio measures the relationship between total operating expenses and sales. The total operating expenses is the sum total of cost of goods sold, office and administrative expenses and selling and distribution expenses. This ratio equips the firm with the ability to cover total operating expenses.

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| **Operating Ratio = Operating Cost / Net Sales X 100** |

### 3. Operating Profit Ratio:

It indicates the operational efficiency of the firm and is a measure of the firm’s ability to cover the total

operating expenses.

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| **Operating Profit Ratio = Operating Profit / Net Sales X 100** |

### 4. Net Profit Ratio

This ratio tells us the overall efficiency in operating the business. It is used to measure the relationship

between net profit and sales. It includes non-operating incomes and profits.

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| **Net Profit Ratio = Net Profit after Tax / Net Sales X 100** |

**Advantages**

* This is the best yardstick to gauge profitability and liquidity
* It aids in evaluation of overall operational efficiency of the business concern
* It facilitates better decision making ability
* It leverages the process of determination of the managerial efficiency to utilize a firm’s resources to generate income on its invested capital
* Net profit Ratio is an indispensable tool of investment evaluation

### 5. Return On Investment Ratio

This ratio measures a return on owner’s or shareholders’ investment. It establishes the relationship

between net profit after interest and taxes and the owner investment.

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| **Return on Investment Ratio = Net Profit after Interest & Taxes / Shareholder fund or Investment X 100** |

**Advantages**

* This ratio indicates the owner’s viewpoint pertaining to the success of the business
* It aids in measuring an income on the shareholders’ or proprietor’s investments
* This ratio equips the management with the important decisions making with respect to the business concern
* It facilitates in efficient handling of owner’s investment

### 6. Return on Capital Employed Ratio

It measures the relationship between profit and capital employed. Return means profits or net profits.

Capital employed means total investment made in the business.

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| **Return on Capital Employed = Net Profit after Taxes/ Gross Capital Employed X 100** |

### 7. Earning Per Ratio

It measures the earning capacity of the firm from the owners view and helps in determining the price of the equity share in the market.

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| **Earning Per Ratio = Net Profit after Tax and Preference Dividend / No of Equity Share** |

**Advantages**

* It measures the price of shares in the market
* It measures the capacity of the firm to pay dividend to its shareholders
* It is used as yardstick to measure the overall performance of the concern

### 8. Dividend Payout Ratio

It is the relationship between payment of dividend on equity share capital and the profits available

after meeting tax and preference dividend. Indication of the dividend policy, as incorporated by the top

management is underlined by this ratio. It highlights the utilization of divisible profit to pay dividend or

pertaining to the retention of both.

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| **Dividend Payout Ratio = Equity Dividend / Net Profit after Tax & Preference Dividend X 100** |

### 9. Dividend Yield Ratio

It is the relationship is established between dividend per share and market value per share. This ratio is a major factor that determines the dividend income from the investor point of view.

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| **Dividend Yield Ratio = Dividend Per Share / Market Value Per Share X 100** |
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### 10. Price Earning Ratio:

It highlights the earning per share reflected by market share. It establishes the relationship between the

market price of an equity share and the earning per equity share. It helps to find out whether the equity

shares of a company are undervalued or not. It is also useful in financial forecasting.

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| **Price Earning Ratio = Market Price per Equity Share / Earning Per Share** |

### 11. Net Profit to Net Worth Ratio:

It measures the profit return on investment. It indicates the established relationship between net profit and shareholders net worth.

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| **Net Profit to Net Worth Ratio = Net Profit After Taxes / Shareholders Net Worth X 100** |

**Advantages**

* It determines the incentive to owners.
* It measures the profit as well as net worth.
* It indicates the overall performance & effectiveness of the firm.

## Solvency Ratios

In our earlier posts we have discussed [Profitability Ratios](https://www.edupristine.com/blog/Ratio-Analysis-Profitability-Ratios) and [Liquidity Ratios](https://www.edupristine.com/blog/ratio-analysis-classification-ratios-liquidity-ratio). The capacity of the business to meet its short-term and long term obligations can be generalized into the term “Solvency”. Creditors, bank loans and bills payable etc come under the inclusion of Short Term obligations. Long-term obligations broadly encompass – debenture, long-term loans and long-term creditors etc. Solvency Ratios are an indication of the financial soundness of a business to continue the operations of its business smoothly, without any impediments and meet its all obligations. Liquidity Ratios and Turnover Ratios concentrate on evaluating the short-term solvency of the concern have already been explained. Now under this part of the chapter only the long-term solvency ratios are dealt with. Some of the important ratios which are given below in order to determine the solvency of the concerned:

* **Debt – Equity Ratio**
* **Proprietary Ratio**
* **Capital Gearing Ratio**
* **Debt Service Ratio or Interest Coverage Ratio**

### 1. Debt – Equity Ratio

This ratio is designed to ascertain the firm’s obligations to creditors in relation to funds invested by

the owners. It is an indication of all external liabilities to owner’s recorded claims.

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| **Debt – Equity Ratio = Total Long Term Debts / Shareholders Fund** |

### 2. Proprietary Ratio

Proprietary Ratio is also termed as Capital Ratio or Net Worth to Total Asset Ratio. It serves as one

of the variant of Debt-Equity Ratio. The term proprietary fund is called Net Worth. The relationship

between shareholders’ fund and total assets is formed by this ratio.

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| **Proprietary Ratio = Shareholders Fund/ Total Assets** |

### 3. Capital Gearing Ratio

This ratio also called as Capitalization or Leverage Ratio. This is one of the Solvency Ratios. The term

capital gearing refers to describe the relationship between fixed interest and/or fixed dividend

bearing securities and the equity shareholders’ fund.

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| **Capital Gearing Ratio = Equity Share Capital / Fixed Interest Bearing Funds** |

### 4. Debt Service Ratio or Interest Coverage Ratio

Debt Service Ratio is also termed as Interest Coverage Ratio or Fixed Charges Cover Ratio. This ratio

denotes the equation between the amount of net profit before deduction of interest and tax and

the fixed interest charges. It is used as a yardstick for the lenders to gain an insight that the business

concern will be able to pay its interest periodically.

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| **Debt Service Ratio or Interest Coverage Ratio = Net profit before Interest & Taxes / Fixed Interest Charges** |

### 5. OVER ALL PROFITABILITY RATIOS

The overall profitability of a firm on the extent of operating efficiency it enjoys. This ratio establishes

the relationship between profitability on sales and the profitability on investment turnover.

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| **Overall Profitability Ratio = Net Profit / Total Assets** |

# Turnover Ratio

If you’re new to Ratio Analysis, read the [basics of ratio analysis](https://www.edupristine.com/blog/ratio-analysis-introduction/) before starting this topic. Efficiency Ratios or Performance Ratios or Activity Ratios are the other functional terms coined for Turnover Ratio. Turnover Ratios draw attention to the diverse aspects of a financial statement to meet the requirements of different parties interested in the business. It also underlines the efficiency with which different assets are vitalized in a business. Turnover means the number of times assets are converted or turned over into sales. The activity ratios indicate the rate at which different assets are turned over.

**The following activities or turnover ratios can be calculated:**

* Inventory Ratios or Stock Turnover Ratios
* Debtor’s Turnover Ratios or Receivable Turnover Ratios
* Debtor’s Collection Period Ratio
* Creditor’s Turnover Ratios or Payable Turnover Ratios
* Working Capital Turnover Ratios
* Fixed Assets Turnover Ratios
* Capital Turnover Ratios.

## Inventory Ratio or Stock Turnover Ratios

It is used to measure whether the investment in stock in trade is effectively utilized or not. It

reveals the affiliation between sales and cost of goods sold or average inventory at cost price or

average inventory at selling price. It indicates the number of times the stock has been turned over in business during a particular period.

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| **Stock Turnover Ratio = Cost of Goods Sold / Average Inventory at Cost** |

## Debtors Turnover Ratios

This ratio indicates the efficiency of the debt collection period and the extent to which the debt

have been converted into cash. This ratio is complementary to the Debtor Turnover Ratio. It is very

helpful to the management because it represents the average debt collection period

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| **Debtors Turnover Ratio = Net Credit Sales / Average Receivables** |

## Debt Collection Period Ratio

This ratio highlights the competence of the debt collection period and the magnitude to which the

debt have been converted into cash. This ratio is corresponding to the Debtor Turnover Ratio. It

plays an instrumental to the management because it denotes the average debt collection period.

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| **Debt Collection Period Ratio = Receivables x Months or days in a year / Net Credit Sales for the year** |

## Creditor’s Turnover Ratio or Payable Turnover Ratio

Payable Turnover Ratio is also termed as Creditor’s T.R or Creditor’s Velocity. The credit

purchases are recorded in the accounts of the buying companies as Creditors to Accounts Payable.

The Term Accounts Payable or Trade Creditors comprise of sundry creditors and bills payable.

This ratio corroborates the relationship between the net credit purchases and the average trade

creditors. Creditor’s velocity ratio underlines the number of times with which the payment is made

to the supplier apropos to credit purchases.

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| **Creditor’s Turnover Ratio = Net Credit Purchases / Average Accounts Payable** |

## Working Capital Turnover Ratio

The effective employment of working capital pertaining to sales is indicated by this ratio. This ratio

signifies the firm’s liquidity position. It institutes relationship between cost of sales and networking

capital.

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| **Working Capital Turnover Ratio = Net Sales / Working Capital** |

## Fixed Asset Turnover Ratio

This ratio indicates the efficiency of assets management. Fixed Assets T.R is put to

application to gauge the optimum utilization of fixed assets. This ratio forms the liaison between

cost of goods sold and total fixed assets. Underutilization of fixed assets is demonstrated, if the ratio

is depressed.

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| **Fixed Asset Turnover Ratio = Cost of goods Sold / Total Fixed Assets** |

## Capital Turnover Ratio

This ratio measures the efficiency of capital utilization in the business. It illustrates the relationship

between cost of sales or sales and capital employed or shareholders’ fund.

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| **Capital Turnover Ratio = Cost of goods Sold / Total Fixed Assets** |