**Unit – 4**

**Ratio Analysis**

**Meaning:**

Ratio analysis is a process to scrutinise and compare financial data of a company using its financial statements. This method actively uses the data from financial statements to calculate the financial health and performance of a company. Therefore, this process eliminates the need of analysing and comparing line items from each financial statement.  This prevailing method primarily helps the management of a company as well as its investors to gather information on its growth percentage.

For example, let’s consider that a company XYZ has had an annual income of Rs. 1,00,000. On the other hand, the cost of XYZ is around Rs.60,000. Therefore, the margin of profit for XYZ is Rs.40,000. As a result, the ratio analysis suggests that the gross profit is 40% of the revenue of XYZ. Consequently, the margin of profit of XYZ is denoted by a percentage instead of line comparison of financial statements. However, there are several types of ratio analysis that companies use to gather data on their financial operations. Having knowledge about these types will certainly help a student understand the advantages and limitations of ratio analysis.

**Importance of Ratio Analysis:**

**1. Financial Statement Analysis**

Understanding financial statements are important for stakeholders of the company. Ratio analysis helps in understanding the comparison of these numbers; furthermore, it helps in estimating numbers from income statements and balance sheets for the future. For e.g. Equity shareholder looks into the P/E ratio,[the Dividend payout ratio](https://www.educba.com/dividend-payout-ratio/), etc. while creditors [observe Debt to Equity ratio](https://www.educba.com/interpretation-of-debt-to-equity-ratio/), Gross margin ratio, Debt to asset ratio, etc.

**2. Efficiency of Company**

Ratio analysis is important in understanding the company’s ability to generate profit. Return on Asset, Returns on Equity tell us how much profit the company is able to generate over assets of the firm and equity investments in the firm, while gross margin and operating margin ratios tell us the company’s ability to generate profit from sales and operating efficiency.

**3. Planning and Forecasting**

From a Management and investor point of view, ratio analysis helps to understand and estimate the company’s future financials and operations. Ratios formed from past financial statement analysis helps in estimating future financials, budgeting, and planning for the future operations of the company.

**4. Identifying Risk and Taking Corrective Actions**

The company operates under various business, market, operations related risks. Ratio analysis helps in understanding these risks and helps management to prepare and take necessary actions. [Leverage ratios help](https://www.educba.com/leverage-ratio-for-banks/) in performing sensitivity analysis of various factors affecting the company’s profitability like sales, cost, debt. Financial leverage ratios like Interest Coverage ratio and [Debt Coverage ratio](https://www.educba.com/debt-coverage-ratio/) tell how much the company is dependent on external capital sources and the company’s ability to repay debt.

**5. Peers Comparison**

Investor, as well as the company’s management, makes a comparison with Competitors Company to understand efficiency, profitability and market share. Ratio analysis is helpful for companies to perform SWOT (Strengths, Weakness, Opportunities, and Threats) analysis in the market. It also tells whether the company is able to perform growth or not over a period from past financials and whether the company’s financial position is improving or not.

**6. A Better Source of Communication**

Ratio analysis is important while presenting the financials of the company to its stakeholders. Ratios make it easy to understand than complex and huge numbers. Sometimes numbers can be deceitful which leads to investors losing confidence, but ratio analysis helps the investor to understand the situation of the company after comparison and helps them to keep investing in the business.

**7. Financial Solvency**

The company’s ability to pay short-term debt is determined by liquidity. Current Ratio, Acid-test ratio tells us whether a company is able to pay its short-term obligation within a year. The company continuously runs analysis on past financial statements to understand and prepare for payment of short-term obligations.

**8. Decision Making**

Ratios provide important information on the operational efficiency of the company, and the utilization of resources by the company. It helps management to forecast and planning for future, new goals, concentrate on the different markets, etc.

**9. Trend Line**

Ratio analysis gives us the trend line, which indicates whether a company is able to perform over a period or not. Companies gather data from past reporting periods trend line formed can be used to understand and judge future performance and any possible issue which cannot be found from just one-year ratio analysis.

**10. Important Tool**

Financial analysis of the company cannot be done without ratio analysis. Ratio analysis is an important tool that is required to perform all actions whether the comparison with peer companies, measuring the efficiency of the company in various aspects of creating a financial model of the company to forecast future performance.

**11. All in One Package**

Ratio analysis includes ratios, which measure various aspects of business like liquidity, efficiency, solvency, leverage, profitability and market value. It gives reliable information to investors and management from all perspectives to make their own decisions. An investor should not depend on just one ratio to make investment decisions but should perform a thorough analysis of various ratios and understand its meaning related to the company’s future performance.

Ratio analysis is an important part of understanding business operations and the ability to perform in the market. For an investor, it is important to perform ratio analysis from all angles of business instead of just one or two angles, because while some ratios might provide positive insights while others will show negative impact on company performance, to understand full picture 360 degree analysis is very important which can be done only after analyzing all ratios.

**Use of Ratio Analysis:**

**Ratio analysis is useful in the following ways:**

1. Comparing Financial Performance: One of the most important things about ratio analysis is that it helps in comparing the financial performance of two companies.

2. Trend Line: Companies tend to use the activity ratio in order to find any kind of trend in the performance. Companies use data from financial statements that is collected from financial statements over many accounting periods. The trend that is obtained can be used for predicting the future financial performance.

3. Operational Efficiency: Financial ratio analysis can also be used to determine the efficiency of managing the asset and liabilities. It helps in understanding and determining whether the resources of the business is over utilized or underutilized.

**Advantages of Ratio Analysis**

When employed correctly, ratio analysis throws light on many problems of the firm and also highlights some positives. Ratios are essentially whistleblowers; they draw the management’s attention towards issues needing attention. Let us take a look at some advantages of ratio analysis.

* Ratio analysis will help validate or disprove the financing, investment and operating decisions of the firm. They summarize the financial statement into comparative figures, thus helping the [management](https://www.toppr.com/guides/business-management-and-entrepreneurship/nature-of-management-and-its-process/management-functions/) to compare and evaluate the financial position of the firm and the results of their decisions.
* It simplifies complex accounting statements and financial data into simple ratios of operating efficiency, financial efficiency, [solvency](https://www.toppr.com/guides/accountancy/accounting-ratios/solvency-ratios/), long-term positions etc.
* Ratio analysis helps identify problem areas and bring the attention of the management to such areas. Some of the information is lost in the complex accounting statements, and ratios will help pinpoint such problems.
* Allows the company to conduct comparisons with other firms, industry standards, intra-firm comparisons etc. This will help the organization better understand its fiscal position in the economy.

**Limitations of ratio analysis:**

Some of the most important limitations of ratio analysis include:

* **Historical Information:** Information used in the analysis is based on real past results that are released by the company. Therefore, ratio analysis metrics do not necessarily represent future company performance.
* **Inflationary effects:** Financial statements are released periodically and, therefore, there are time differences between each release. If inflation has occurred in between periods, then real prices are not reflected in the financial statements. Thus, the numbers across different periods are not comparable until they are adjusted for inflation.
* **Changes in accounting policies:** If the company has changed its accounting policies and procedures, this may significantly affect financial reporting. In this case, the key financial metrics utilized in ratio analysis are altered, and the financial results recorded after the change is not comparable to the results recorded before the change. It is up to the analyst to be up to date with changes to accounting policies. Changes made are generally found in the notes to the financial statements section.
* **Operational changes:**A company may significantly change its operational structure, anything from their supply chain strategy to the product that they are selling. When significant operational changes occur, the comparison of financial metrics before and after the operational change may lead to misleading conclusions about the company’s performance and future prospects.
* **Seasonal effects:** An analyst should be aware of seasonal factors that could potentially result in limitations of ratio analysis. The inability to adjust the ratio analysis to the seasonality effects may lead to false interpretations of the results from the analysis.
* **Manipulation of financial statements:** Ratio analysis is based on information that is reported by the company in its financial statements. This information may be manipulated by the company’s management to report a better result than its actual performance. Hence, ratio analysis may not accurately reflect the true nature of the business, as the misrepresentation of information is not detected by simple analysis. It is important that an analyst is aware of these possible manipulations and always complete extensive due diligence before reaching any conclusions.

**Categories / Types of Ratio Analysis:**

There are numerous financial ratios that are used for ratio analysis, and they are grouped into the following categories:

**1. Liquidity ratios**

Liquidity ratios measure a company’s ability to meet its debt obligations using its current assets. When a company is experiencing financial difficulties and is unable to pay its debts, it can convert its assets into cash and use the money to settle any pending debts with more ease.

Some common liquidity ratios include the [quick ratio](https://corporatefinanceinstitute.com/resources/knowledge/finance/quick-ratio-definition/), the cash ratio, and the current ratio. Liquidity ratios are used by banks, creditors, and suppliers to determine if a client has the ability to honor their financial obligations as they come due.

**Types of Liquidity Ratios**

1. **Current Ratio**

**Current Ratio = Current Assets / Current Liabilities**

The current ratio is the simplest liquidity ratio to calculate and interpret. Anyone can easily find the [current assets](https://corporatefinanceinstitute.com/resources/knowledge/accounting/current-assets/) and current liabilities line items on a company’s balance sheet. Divide current assets by current liabilities, and you will arrive at the current ratio.

1. **Quick Ratio**

**Quick Ratio = (Cash + Accounts Receivables + Marketable Securities) / Current Liabilities**

The quick ratio is a stricter test of liquidity than the current ratio. Both are similar in the sense that current assets is the numerator, and current liabilities is the denominator.

However, the quick ratio only considers certain current assets. It considers more liquid assets such as cash, [accounts receivables](https://corporatefinanceinstitute.com/resources/knowledge/accounting/what-is-accounts-receivable/), and marketable securities. It leaves out current assets such as inventory and prepaid expenses because the two are less liquid. So, the quick ratio is more of a true test of a company’s ability to cover its short-term obligations.

1. **Cash Ratio**

**Cash Ratio = (Cash + Marketable Securities) / Current Liabilities**

The cash ratio takes the test of liquidity even further. This ratio only considers a company’s most liquid assets – cash and marketable securities. They are the assets that are most readily available to a company to pay short-term obligations.

In terms of how strict the tests of liquidity are, you can view the current ratio, quick ratio, and cash ratio as easy, medium, and hard.

**2. Solvency ratios**

Solvency ratios measure a company’s long-term financial viability. These ratios compare the debt levels of a company to its assets, equity, or annual earnings.

Important solvency ratios include the debt to capital ratio, debt ratio, interest coverage ratio, and equity multiplier. Solvency ratios are mainly used by governments, banks, employees, and [institutional investors](https://www.forbes.com/sites/betsyatkins/2019/01/11/institutional-investors-and-their-role-in-changing-americas-corporations/).

**3. Profitability Ratios**

Profitability ratios measure a business’ ability to earn profits, relative to their associated expenses. Recording a higher profitability ratio than in the previous financial reporting period shows that the business is improving financially. A profitability ratio can also be compared to a similar firm’s ratio to determine how profitable the business is relative to its competitors.

Some examples of important profitability ratios include the return on equity ratio, return on assets, profit margin, gross margin, and [return on capital employed](https://corporatefinanceinstitute.com/resources/knowledge/finance/return-on-capital-employed-roce/).

**4. Efficiency ratios**

Efficiency ratios measure how well the business is using its assets and liabilities to generate sales and earn profits. They calculate the use of inventory, machinery utilization, turnover of liabilities, as well as the usage of equity. These ratios are important because, when there is an improvement in the efficiency ratios, the business stands to generate more revenues and profits.

Some of the important efficiency ratios include the [asset turnover ratio](https://corporatefinanceinstitute.com/resources/knowledge/finance/asset-turnover-ratio/), inventory turnover, payables turnover, working capital turnover, fixed asset turnover,  and receivables turnover ratio.

**5. Coverage ratios**

Coverage ratios measure a business’ ability to service its debts and other obligations. Analysts can use the coverage ratios across several reporting periods to draw a trend that predicts the company’s financial position in the future. A higher coverage ratio means that a business can service its debts and associated obligations with greater ease.

Key coverage ratios include the [debt coverage](https://corporatefinanceinstitute.com/resources/knowledge/finance/debt-service-coverage-ratio/) ratio, interest coverage, fixed charge coverage, and EBIDTA coverage.

**6. Market prospect ratios**

Market prospect ratios help investors to predict how much they will earn from specific investments. The earnings can be in the form of higher stock value or future dividends. Investors can use current earnings and dividends to help determine the probable future stock price and the dividends they may expect to earn.

Key market prospect ratios include dividend yield, earnings per share, the [price-to-earnings ratio](https://corporatefinanceinstitute.com/resources/knowledge/valuation/price-earnings-ratio/), and the dividend payout ratio.

**Comparing Vertical Analysis and Horizontal Analysis:**

[Vertical analysis](https://www.accountingtools.com/articles/vertical-analysis) is the proportional analysis of a [financial statement](https://www.accountingtools.com/articles/financial-statements), where each line item on the statement is listed as a percentage of another item. This means that every line item on an [income statement](https://www.accountingtools.com/articles/the-income-statement) is stated as a percentage of [gross sales](https://www.accountingtools.com/articles/gross-sales), while every line item on a [balance sheet](https://www.accountingtools.com/articles/the-balance-sheet) is stated as a percentage of [total assets](https://www.accountingtools.com/articles/total-assets).

[Horizontal analysis](https://www.accountingtools.com/articles/horizontal-analysis) is the comparison of historical financial information over a series of [reporting periods](https://www.accountingtools.com/articles/reporting-period). It is used to see if any numbers are unusually high or low in comparison to the information for bracketing periods, which may then trigger a detailed investigation of the reasons for the difference.

The difference between horizontal and vertical analysis can be drawn clearly on the following grounds:

1. Horizontal Analysis refers to the process of comparing the line of items over the period, in the comparative financial statement, to track the overall trend and performance. On the other hand, vertical analysis refers to the tool used to study financial statement by making a comparison of each line of the item as a proportion of the base figure within the statement, i.e. assets, liabilities, sales or equity.
2. Horizontal Analysis is undertaken to ascertain how the company performed over the years or what is its financial status, as compared to the prior period. As against, vertical analysis is used to report the stakeholder about the portion of line items to the total, in the current financial year.
3. The primary aim of horizontal analysis is to keep a track on the behaviour of the individual items of the financial statement over the years. Conversely, the vertical analysis aims at showing an insight into the relative importance or proportion of various items on a particular year’s financial statement.
4. In horizontal analysis, the items of the present financial year are compared with the base year’s amount, in both absolute and percentage terms. On the contrary, in vertical analysis, each item of the financial statement is compared with another item of that financial statement.
5. The horizontal analysis is helpful in comparing the results of one financial year with that of another. As opposed, the vertical analysis is used to compare the results of one company’s financial statement with that of another, of the same industry. Further, vertical analysis can also be used for the purpose of benchmarking.



**Differences between Operative and Liquidity Level Ratios:**

Operative and liquidity ratios are two types of financial ratios that are commonly used by businesses to assess their financial health and performance. While both of these ratios are important in understanding a company's financial position, they measure different aspects of the company's financial condition. In this response, we will explain the difference between these two types of ratios and provide examples of each.

* **Operative Ratio**

Operative ratios, also known as activity ratios or efficiency ratios, are used to measure how effectively a company is utilizing its assets to generate revenue. These ratios provide insight into how efficiently a company is managing its operations and converting its assets into cash flow.

Some examples of operative ratios include:

1. Inventory Turnover Ratio: This ratio measures how quickly a company is able to sell its inventory. It is calculated by dividing the cost of goods sold by the average inventory level during the same period.
2. Accounts Receivable Turnover Ratio: This ratio measures how quickly a company is able to collect payments from its customers. It is calculated by dividing the total credit sales by the average accounts receivable balance during the same period.
3. Fixed Asset Turnover Ratio: This ratio measures how effectively a company is using its fixed assets to generate revenue. It is calculated by dividing the total revenue by the average value of the fixed assets during the same period.

Operative ratios are useful in assessing a company's operational efficiency and productivity. A high operative ratio indicates that the company is generating revenue from its assets at a rapid pace, which is generally seen as a positive sign.

* **Liquidity Ratio**

Liquidity ratios, on the other hand, are used to measure a company's ability to meet its short-term obligations as they come due. These ratios provide insight into how easily a company can convert its assets into cash to pay off its current liabilities.

Some examples of liquidity ratios include:

1. Current Ratio: This ratio measures a company's ability to pay off its short-term liabilities using its current assets. It is calculated by dividing the total current assets by the total current liabilities.
2. Quick Ratio: This ratio measures a company's ability to pay off its short-term liabilities using its most liquid assets, such as cash and accounts receivable. It is calculated by dividing the total current assets minus inventory by the total current liabilities.
3. Cash Ratio: This ratio measures a company's ability to pay off its short-term liabilities using only its cash and cash equivalents. It is calculated by dividing the total cash and cash equivalents by the total current liabilities.

Liquidity ratios are useful in assessing a company's ability to meet its short-term financial obligations. A high liquidity ratio indicates that the company has sufficient cash and other liquid assets to cover its current liabilities, which is generally seen as a positive sign.

In conclusion, operative ratios and liquidity ratios are both important in understanding a company's financial position. Operative ratios provide insight into how efficiently a company is using its assets to generate revenue, while liquidity ratios provide insight into a company's ability to meet its short-term financial obligations. It's important to use both types of ratios when assessing a company's financial health and performance.

**Compare solvency and liquidity ratio:**

Solvency and liquidity ratios are two different types of financial ratios that are used to assess a company's financial health and performance. While both ratios are important, they measure different aspects of a company's financial position. In this response, we will explain the difference between solvency and liquidity ratios and provide examples of each.

**Solvency Ratio**

Solvency ratios are used to measure a company's ability to meet its long-term financial obligations. These ratios provide insight into a company's ability to remain financially stable over the long term.

Some examples of solvency ratios include:

1. Debt-to-Equity Ratio: This ratio measures the amount of debt a company has relative to its equity. It is calculated by dividing the total liabilities by the total equity.
2. Interest Coverage Ratio: This ratio measures a company's ability to meet its interest payments on outstanding debt. It is calculated by dividing the company's earnings before interest and taxes (EBIT) by its interest expenses.
3. Debt Service Coverage Ratio: This ratio measures a company's ability to meet its debt payments, including both principal and interest. It is calculated by dividing the company's EBIT by its total debt service.

Solvency ratios are useful in assessing a company's long-term financial health and stability. A high solvency ratio indicates that the company has a strong financial position and is able to meet its long-term financial obligations.

**Liquidity Ratio**

Liquidity ratios, as discussed earlier, are used to measure a company's ability to meet its short-term financial obligations. These ratios provide insight into a company's ability to remain financially stable in the short term.

Some examples of liquidity ratios include:

1. Current Ratio: This ratio measures a company's ability to pay off its short-term liabilities using its current assets. It is calculated by dividing the total current assets by the total current liabilities.
2. Quick Ratio: This ratio measures a company's ability to pay off its short-term liabilities using its most liquid assets, such as cash and accounts receivable. It is calculated by dividing the total current assets minus inventory by the total current liabilities.
3. Cash Ratio: This ratio measures a company's ability to pay off its short-term liabilities using only its cash and cash equivalents. It is calculated by dividing the total cash and cash equivalents by the total current liabilities.

Liquidity ratios are useful in assessing a company's ability to meet its short-term financial obligations. A high liquidity ratio indicates that the company has sufficient cash and other liquid assets to cover its current liabilities.

In conclusion, solvency ratios and liquidity ratios are both important in understanding a company's financial position. Solvency ratios provide insight into a company's ability to meet its long-term financial obligations, while liquidity ratios provide insight into a company's ability to meet its short-term financial obligations. It's important to use both types of ratios when assessing a company's financial health and performance.

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