#### **Definition of Liquidity Ratios:**

A class of financial metrics that is used to determine a company's ability to pay off its shortterms debts obligations. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short-term debts.

#### **Current Ratio and Quick Ratio:**

#### **Current Ratio:**

The current ratio is a liquidity and efficiency ratio that measures a firm's ability to pay off its short-term liabilities with its current assets. The current ratio is an important measure of liquidity because short-term liabilities are due within the next year.

This means that a company has a limited amount of time in order to raise the funds to pay for these liabilities. Current assets like cash, cash equivalents, and marketable securities can easily be converted into cash in the short term. This means that companies with larger amounts of current assets will more easily be able to pay off current liabilities when they become due without having to sell off long-term, revenue generating assets.

#### Formula:

The current ratio is calculated by dividing current assets by current liabilities. This ratio is stated in numeric format rather than in decimal format. Here is the calculation:



GAAP requires that companies separate current and long-term assets and liabilities on the balance sheet. This split allows investors and creditors to calculate important ratios like the current ratio. On U.S. financial statements, current accounts are always reported before long-term accounts.

#### Analysis:

The current ratio helps investors and creditors understand the liquidity of a company and how easily that company will be able to pay off its current liabilities. This ratio expresses a firm's current debt in terms of current assets. So a current ratio of 4 would mean that the company has 4 times more current assets than current liabilities.

A higher current ratio is always more favorable than a lower current ratio because it shows the company can more easily make current debt payments.

If a company has to sell of fixed assets to pay for its current liabilities, this usually means the company isn't making enough from operations to support activities. In other words, the company is losing money. Sometimes this is the result of poor collections of accounts receivable.

The current ratio also sheds light on the overall debt burden of the company. If a company is weighted down with a current debt, its cash flow will suffer.

#### **Quick Ratio:**

The quick ratio or acid test ratio is a liquidity that measures the ability of a company to pay its current liabilities when they come due with only quick assets. Quick assets are current assets that can be converted to cash within 90 days or in the short-term. Cash, cash equivalents, short-term investments or marketable securities, and current accounts receivable are considered quick assets.

Short-term investments or marketable securities include trading securities and available for sale securities that can easily be converted into cash within the next 90 days. Marketable securities are traded on an open market with a known price and readily available buyers. Any stock on the New York Stock Exchange would be considered a marketable security because they can easily be sold to any investor when the market is open.

The quick ratio is often called the acid test ratio in reference to the historical use of acid to test metals for gold by the early miners. If the metal passed the acid test, it was pure gold. If metal failed the acid test by corroding from the acid, it was a base metal and of no value.

#### Formula:

The quick ratio is calculated by adding cash, cash equivalents, short-term investments, and current receivables together then dividing them by current liabilities.

Quick Ratio			
Cash + Cash Equivalents + Short Term Investments + Current Receivables			
QUICK Ratio =	Current Liabilities		

Sometimes company financial statements don't give a breakdown of quick assets on the balance sheet. In this case, you can still calculate the quick ratio even if some of the quick asset totals are unknown. Simply subtract inventory and any current prepaid assets from the current asset total for the numerator.

The acid test of finance shows how well a company can quickly convert its assets into cash in order to pay off its current liabilities. It also shows the level of quick assets to current liabilities.

# **Activity Ratios:**

#### **Definition of Activity Ratios:**

It is the accounting ratios that measure a firm's ability to convert different accounts within its balance sheets into cash or sales. Activity ratios are used to measure the relative efficiency of a firm based on its use of its assets, leverage or other such balance sheet items. These ratios are important in determining whether a company's management is doing a good enough job of generating revenues, cash, etc. from its resources.

#### Accounts receivable:

The total amount of money due to a company for products or services sold on an open credit account. The accounts receivable turnover shows how quickly a company collects what is owed to it and indicates the liquidity of the receivables.

Closely related to the accounts receivable turnover rate is the average collection period in days, equal to 365 days divided by the accounts.

**Receivable turnover:** 



Analysts frequently use the average collection period to measure the effectiveness of a company's ability to collect payments from its credit customers. Generally, the average collection period should not exceed the credit terms that the company extends to its customers.

For a company to be profitable, it must be able to manage its inventory, because it is money invested that does not earn a return until the product is sold. A higher inventory turnover ratio indicates more effective cash management and reduces the incidence of inventory obsolescence. The best measure of inventory utilization is the inventory turnover ratio (aka inventory utilization ratio), which is the total annual sales or the cost of goods sold divided by the cost of inventory.



Using the cost of goods sold in the numerator is a more accurate indicator of inventory turnover, allowing a more direct comparison with other companies, since different companies would have different markups to the sale price, which would overstate the actual inventory turnover.

In seasonal businesses, where the amount of inventory can vary widely throughout the year, the average inventory cost is used in the denominator.

### **Definition of Capital Structure:**

It is a mix of a company's long-term debt, specific short-term debt, common equity and preferred equity. The capital structure is how a firm finances its overall operations and growth by using different sources of funds.

Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure.

#### The formula for calculating D/E ratios can be represented in the following way:

Debt-Equity Ratio= Total Liabilities/ Shareholder's Equity

- The result may often be expressed as a number or as a percentage.
- This form of D/E may often be referred to as risk or gearing.

This ratio can be applied to personal financial statements as well as corporate ones, in which case it is also known as the Personal Debt/Equity Ratio. Here, "equity" refers not to the value of stakeholders' shares but rather to the difference between the total value of a corporation or individual's assets and that corporation or individual's liabilities. The formula for this form of the D/E ratio, then, can be represented as:

D/E = Total Liabilities / (Total Assets - Total Liabilities).

#### **Interest Coverage Ratio:**

The interest coverage ratio measures the ability of a company to pay the interest on its outstanding debt. This measurement is used by creditors, lenders, and investors to determine the risk of lending funds to a company. A high ratio indicates that a company can pay for its interest expense several times over, while a low ratio is a strong indicator that a company may default on its loan payments.

It is useful to track the interest coverage ratio on a trend line, in order to spot situations where a company's results or debt burden are yielding a downward trend in the ratio. An investor would want to sell any equity holdings in a company showing such a downward trend, especially if the ratio drops below 1.5:1.

The formula for this ratio is to divide earnings before interest and taxes (EBIT) by the interest expense for the measurement period.

## The calculation is:

#### Earnings before interest and taxes Interest expense

For example, ABC Company earnings Rs.5,000,000 before interest and taxes in its most recent reporting month. Its interest expense for that month is \$2,500,000. Therefore, the company's interest coverage ratio is calculated as:

#### <u>Rs5,000,000 EBIT</u> Rs2,500,000 Interest expense

= 2:1 Interest coverage ratio

The ratio indicates that ABC's earnings should be sufficient to enable it to pay the interest expense.

If you intend to use this measurement, there is one issue to be aware of. A company may be accruing an interest expense that is not actually due for payment yet, so the ratio can indicate a debt default that will not actually occur, until such time as the interest is due for payment.

#### **Profitability ratios:**

A class of financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. For most of these ratios, having a higher value relative to a competitor's ratio or the same ratio from a previous period is indicative that the company is doing well.

#### Gross profit ratio (GP ratio):

It is a profitability ratio that shows the relationship between gross profit and total net sales revenue. It is a popular tool to evaluate the operational performance of the business. The ratio is computed by dividing the gross profit figure by net sales.

#### Formula:

#### The following formula/equation is used to compute gross profit ratio:

Gross profit Ratio =  $\frac{\text{Gross profit}}{\text{Net sales}}$ 

When gross profit ratio is expressed in percentage form, it is known as gross profit margin or gross profit percentage. The formula of gross profit margin or percentage is given below:

Gross profit margin =  $\frac{\text{Gross profit}}{\text{Net sales}} \times 100$ 

The basic components of the formula of gross profit ratio (GP ratio) are gross profit and net sales. Gross profit is equal to net sales minus cost of goods sold. Net sales are equal to total gross sales less returns inwards and discount allowed. The information about gross profit and net sales is normally available from income statement of the company.

### **Example:**

The following data relates to a small trading company. Compute the gross profit ratio (GP ratio) of the company.

Gross sales \$ 1,000,000

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Sales returns	90,000
Opening stock	200,000
Purchases	590,000
Purchases returns	70,000
Closing stock	45,000

#### **Solution:**

With the help of above information, we can compute the gross profit ratio as follows:

Gross profit Gross profit Ratio = Net sales

> = (235,000 / 910,000)= 0.2582 or 25.82%

The GP ratio is 25.82%. It means the company may reduce the selling price of its products by 25.82% without incurring any loss.

*Computation of gross profit:				
Sales		1,000,000		
Less sales returns		90,000		
Net sales			910,000	
Less cost of goods sold:				
Opening inventory		200,000		
Purchases	590,00 <mark>0</mark>	5		
Purchases returns	70,000	520,000		
Available for sale		720,000		
Less closing inventory		45,000	675,000	
Gross profit			235,000	

#### \* ...

#### Net profit ratio (NP ratio):

Is a popular profitability ratio that shows relationship between net profit after tax and net sales. It is computed by dividing the net profit (after tax) by net sales.

#### Formula:

Net profit after tax

Net profit (NP) ratio = -

Net sales

For the purpose of this ratio, net profit is equal to gross profit minus operating expenses and income tax. All non-operating revenues and expenses are not taken into account because the purpose of this ratio is to evaluate the profitability of the business from its primary operations.

Examples of non-operating revenues include interest on investments and income from sale of fixed assets. Examples of non-operating expenses include interest on loan and loss on sale of assets.

The relationship between net profit and net sales may also be expressed in percentage form. When it is shown in percentage form, it is known as net profit margin. The formula of net profit margin is written as follows:

Not profit (ND) margin -	Net profit after tax	
Net profit (NP) margin =	Net sales	× 100
Example:		
Sales	\$ 210,000	
Returns inwards	10,000	
Gross profit	80,000	
Administrative expenses	15,000	
Selling expenses	15,000	75
Interest on investment	10,000	
Loss on account of fire	6,000	
Income tax	5,000	

Net profit ratio would be computed as follows:

Net profit (NP) ratio = Net sales

= (\$45,000\* / 200,000\*\*) = 0.225 or 22.5%

\*Computation of net operating profit after tax:

Gross profit		80,000
Less operating expenses:		
Administrative expenses	15,000	
Selling expenses	15,000	30,000
Net operating profit before		50,000

tax	
Less income tax	5,000
Net operating profit after tax	45,000

**Note:** Interest on investment and loss on account of fire has been ignored because interest on investment is a non-operating income and loss on account of fire is a non-operating loss.

#### **Computation of net sales:**

210,000 - 10,000 = 200,000

#### **Operating Ratio:**

The operating ratio compares production and administrative expenses to net sales. The ratio reveals the cost per sales dollar of operating a business. A lower operating ratio is a good indicator of operational efficiency, especially when the ratio is low in comparison to the same ratio for competitors and benchmark firms.

The operating ratio is only useful for seeing if the core business is able to generate a profit. Since several potentially significant expenses are not included, it is not a good indicator of the overall performance of a business, and so can be misleading when used without any other performance metrics. For example, a company may be highly leveraged and must therefore make massive interest payments that are not considered part of the operating ratio.

To calculate the operating ratio, add together all production costs (i.e., the cost of goods sold) and administrative expenses (which includes general, administrative, and selling expenses) and divide by net sales (which is gross sales, less sales discounts, returns, and allowances). The measure excludes financing costs, non-operating expenses, and taxes. The calculation is: Production expenses + Administrative expenses

expenses + Administrative

Net sales

A variation on the formula is to exclude production expenses, so that only administrative expenses are matched against net sales. This version yields a much lower ratio, and is useful for determining the amount of fixed administrative costs that must be covered by sales. As such, it is a variation on the <u>breakeven</u> calculation. The calculation is:

Administrative expense Net sales

For example, ABC Company has production expenses of Rs600,000, administrative expenses of Rs200,000, and net sales of Rs1,000,000. Its operating ratio is:

Rs600,000 production expenses + Rs200,000 Administrative expenses Rs1,000,000 Net sales = 80% Operating ratio

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Thus, operating expenses are 80% of net sales.

#### **P/E Ratio:**

P/E is short for the ratio of a company's share price to its per-share earnings. As the name implies, to calculate the P/E, you simply take the current stock price of a company and divide by its earnings per share (EPS):

Market Value per Share

P/E Ratio =

Earnings per Share (EPS)

Most of the time, the P/E is calculated using EPS from the last four quarters. This is also known as the trailing P/E. However, occasionally the EPS figure comes from estimated earnings expected over the next four quarters. This is known as the leading or projected P/E. A third variation that is also sometimes seen uses the EPS of the past two quarters and estimates of the next two quarters.

There isn't a huge difference between these variations. But it is important to realize that in the first calculation, you are using actual historical data. The other two calculations are based on analyst estimates that are not always perfect or precise.

Companies that aren't profitable, and consequently have a negative EPS, pose a challenge when it comes to calculating their P/E. Opinions vary on how to deal with this. Some say there is a negative P/E, others give a P/E of 0, while most just say the P/E doesn't exist.

Historically, the average P/E ratio in the market has been around 15-25. This fluctuates significantly depending on economic conditions. The P/E can also vary widely between different companies and industries.

### **Definition of Earnings Per Share – EPS:**

The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's profitability. This can be calculated as:

## Net Income - Dividends on Preferred Stock Average Outstanding Shares

When calculating, it is more accurate to use a weighted average number of shares outstanding over the reporting term, because the number of shares outstanding can change over time. However, data sources sometimes simplify the calculation by using the number of shares outstanding at the end of the period.

Diluted EPS expands on basic EPS by including the shares of convertibles or warrants outstanding in the outstanding shares number.