

Chapter-5

Financial Ratios Analysis

5.1. Introduction to Financial Ratios Analysis

Financial ratio analysis is a powerful technique for evaluating a company's financial performance and health. It involves comparing the relationships between different financial data points found in a company's financial statements, such as the income statement, balance sheet, and cash flow statement.

Concept of Ratio Analysis

Definition and Overview: Financial ratio analysis is a powerful tool used to assess a company's performance and financial health by examining the relationships between various financial statement accounts. Ratios are derived from a company's financial statements—primarily the balance sheet and income statement—and provide insights that might not be apparent from the raw numbers alone.

Definition and Overview

According to C. Van Horne and John M. Wachowicz Jr., ratio analysis is "the process of determining and interpreting numerical relationships based on financial statements." It is a widely used tool for evaluating the financial performance and condition of a business by examining the relationships between various accounts in the financial statements.

Myers' Definition: Myers defines ratio analysis as "a study of relationships among various financial factors in a business." This means analyzing how different financial elements such as assets, liabilities, revenue, and expenses interact with each other to provide insights into the company's financial health.

5.1.1. Importance of Ratio Analysis

Performance Evaluation: Ratios help in evaluating the performance of a company over time (trend analysis) and in comparison to other companies (comparative analysis). This allows stakeholders to see how the company is progressing, identify trends, and assess the effectiveness of its strategies.

Financial Health: Ratios provide a quick snapshot of a company's financial health. They indicate the company's ability to pay off short-term obligations (liquidity), manage its debt (solvency), and generate profits (profitability). This information is crucial for understanding the company's overall financial stability and viability.

Decision Making: Investors, creditors, and management use financial ratios to make informed decisions. For investors, ratios help in evaluating the profitability and risk associated with

Potential investments. Creditors assess the creditworthiness and ability of the company to meet its obligations. Management uses ratios to guide strategic planning and operational decisions.

Efficiency Measurement: Ratios measure how efficiently a company utilizes its assets and manages its operations. For example, turnover ratios like inventory turnover and receivables turnover indicate how effectively the company is managing its resources. Higher efficiency typically leads to better performance and profitability.

Comparative Analysis: Ratios enable comparison across firms and industries. By benchmarking performance against industry standards and competitors, companies can identify their strengths and weaknesses. This comparative analysis helps in setting performance goals and implementing best practices to improve operational efficiency and financial performance.

5.1.2. Users of Financial Ratios

Investors

Investors use financial ratios to evaluate the profitability and risk associated with their investments. Ratios such as Return on Equity (ROE), Earnings Per Share (EPS), and Price-to-Earnings (P/E) provide insights into a company's financial health and growth potential. By analyzing these ratios, investors can make informed decisions about buying, holding, or selling stocks, and assess the long-term viability of their investments. Ratios also help in comparing companies within the same industry to identify the best investment opportunities.

Creditors

Creditors assess the creditworthiness and ability of a company to meet its short-term and long-term obligations using financial ratios. Ratios like the Current Ratio, Quick Ratio, and Debt-to-Equity Ratio help creditors evaluate a company's liquidity, solvency, and overall financial stability. This analysis is crucial for determining the terms of credit, interest rates, and the likelihood of repayment, thereby mitigating the risk of default.

Management

Management utilizes financial ratios to monitor internal performance and make strategic decisions. Ratios such as Gross Margin, Operating Margin, and Return on Assets (ROA) help management evaluate operational efficiency, cost control, and asset utilization. By regularly analyzing these ratios, management can identify areas of improvement, set performance targets, and develop strategies to enhance profitability and growth. Additionally, ratios help in benchmarking against competitors and industry standards.

Regulators

Regulators ensure that companies comply with financial regulations and maintain transparency in reporting by analyzing financial ratios. Ratios such as the Capital Adequacy Ratio and Liquidity Coverage Ratio are used to assess the financial soundness of institutions, especially in the banking sector. Regulators use these ratios to enforce regulatory standards, monitor

Systematic risk, and protect the interests of stakeholders, including consumers and investors. This oversight helps maintain the stability and integrity of the financial system.

Analysts

Analysts provide insights and recommendations based on ratio analysis. They use a wide range of ratios to evaluate a company's financial performance, trends, and potential for future growth. Analysts often publish detailed reports that include ratio analysis to inform investors, creditors, and other stakeholders. Ratios such as Price-to-Book (P/B), Debt-to-Equity, and Dividend Yield are commonly used to offer a comprehensive view of a company's financial health. These insights assist stakeholders in making informed decisions and formulating investment strategies.

5.1.3. Limitations of Ratio Analysis

Historical Data

Ratios are based on historical financial statements and may not reflect current or future conditions. Since they rely on past data, they might not accurately predict future performance or account for recent developments affecting the company's financial health. This lag can limit their usefulness in fast-changing markets or industries.

Accounting Policies

Different accounting policies and practices can affect the comparability of ratios across companies. Companies may use various methods for depreciation, inventory valuation, and revenue recognition, which can lead to significant differences in financial ratios, making it challenging to compare firms accurately.

Non-Financial Factors

Ratios do not consider non-financial factors such as market conditions, competition, and management quality. Elements like regulatory changes, technological advancements, and industry dynamics are critical to a company's success but are not reflected in financial ratios, limiting their comprehensiveness.

Single Ratio Limitation

A single ratio does not provide a complete picture; it must be interpreted in conjunction with other ratios and qualitative information. Relying on one ratio can lead to misleading conclusions. A holistic analysis requires looking at multiple ratios to understand various aspects of a company's financial health.

Window Dressing

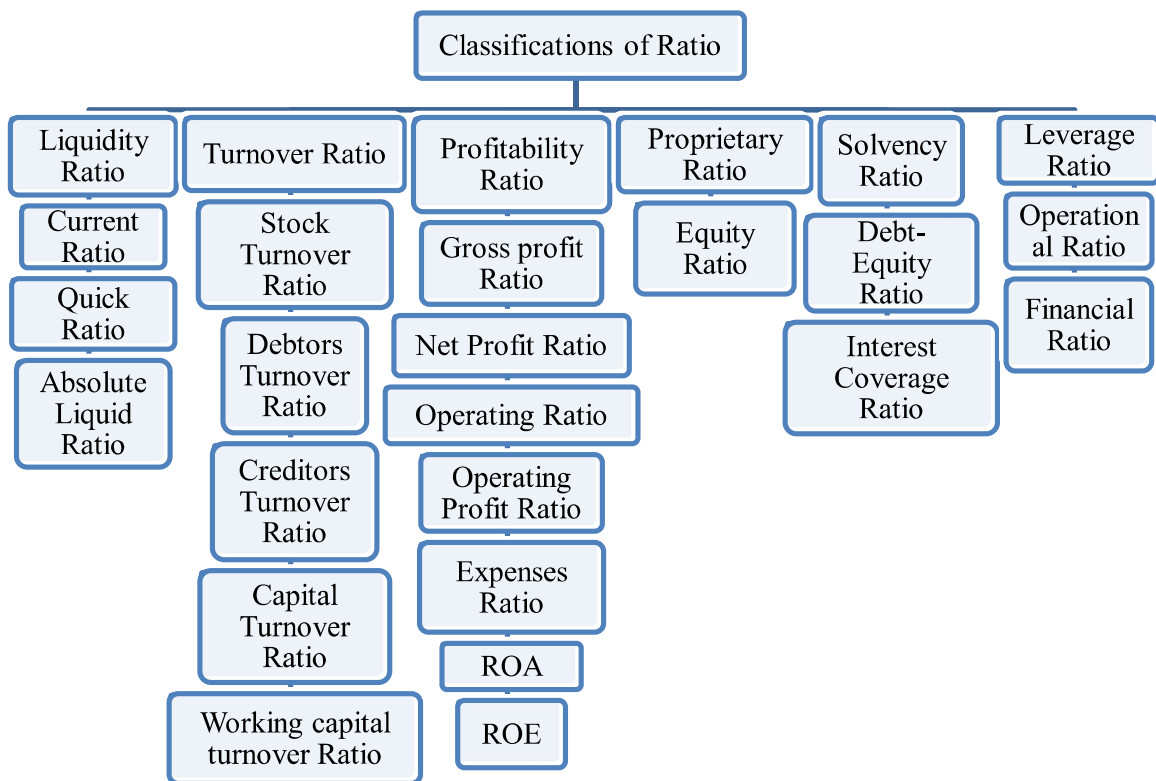
Companies may manipulate financial statements to present better ratios, thus misleading users. Techniques like altering year-end transactions, changing accounting policies, or reclassifying

Items can temporarily improve ratios, giving a false impression of financial stability and performance. This manipulation can deceive investors, creditors, and other stakeholders.

5.2. Types of Financial Ratios

Financial ratios are essential tools in the analysis of a company's financial health and performance. They are calculated by dividing one financial statement item by another, providing insights into various aspects of the business. These ratios help stakeholders make informed decisions by evaluating different facets of a company's operations.

5.2.1. Classification of Ratios



5.3. Liquidity Ratios:

Liquidity ratios, also known as short-term solvency ratios, measure a company's ability to meet its short-term obligations using its most liquid assets. These ratios are crucial for assessing the financial health and operational efficiency of a business, particularly its capacity to convert assets quickly into cash to cover immediate liabilities.

5.3.1. Current Ratio

The current ratio is a financial metric that evaluates a company's ability to pay off its short-term liabilities with its short-term assets. It provides insight into the liquidity position of a business, indicating whether the company has enough resources to cover its immediate

obligations.

Objectives

1. **Assess Short-Term Financial Health:** To determine the company's capacity to meet its short-term liabilities with its current assets.
2. **Evaluate Liquidity:** To measure how easily the company can convert its current assets into cash to pay off its current liabilities.
3. **Inform Stakeholders:** To provide valuable information to investors, creditors, and management about the company's liquidity and operational efficiency.
4. **Identify Potential Issues:** To highlight potential liquidity problems that could affect the company's ability to operate smoothly and meet its financial commitments.

Components

Current Assets

1. **Cash and Cash Equivalents:** Highly liquid assets that can be readily converted into cash.
2. **Accounts Receivable:** Money owed to the company by customers for goods or services sold on credit.
3. **Inventory:** Goods and materials that the company holds for the purpose of resale.
4. **Prepaid Expenses:** Payments made in advance for goods or services to be received in the future.
5. **Marketable Securities:** Liquid financial instruments that can be quickly converted into cash.

Current Liabilities

1. **Accounts Payable:** Money the company owes to suppliers for goods and services purchased on credit.
2. **Short-Term Debt:** Borrowings those are due within one year.
3. **Accrued Liabilities:** Expenses that have been incurred but not yet paid.
4. **Other Current Liabilities:** Various other obligations those are due within one year, such as taxes payable and wages payable.

Formula

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Current ratio is also known as working capital ratio as the excess of current assets over current liabilities is called working capital.

Current Assets	Current Liabilities
Cash in hand/ Cash at bank	Outstanding expenses (accrued expenses)
Marketable securities	Bills Payable
Temporary investments	Sundry creditors
Bills Receivable	Short-term loans and advances
Sundry Debtors	Income –tax Payable
Inventories (Stocks)	Dividends Payable

Short –term loans and advances Outstanding incomes /(accrued incomes) Prepaid expenses.	Income Received in advance Bank overdraft.
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5.3.2. Quick Ratio

The quick ratio, also known as the acid-test ratio, measures a company’s ability to meet its short-term liabilities with its most liquid assets. Unlike the current ratio, the quick ratio excludes inventory from current assets, as inventory may not be quickly convertible to cash. This ratio provides a more stringent assessment of a company's short-term financial health.

Objectives

1. **Assess Immediate Liquidity:** To evaluate a company's ability to pay off its current liabilities without relying on the sale of inventory.
2. **Evaluate Financial Stability:** To measure the financial resilience of a company in meeting its short-term obligations using its most liquid assets.
3. **Provide a Conservative Measure:** To offer a conservative view of the company's liquidity by focusing only on assets that can be quickly converted into cash.
4. **Aid Stakeholders in Decision-Making:** To give investors, creditors, and management a clear understanding of the company’s ability to handle unexpected financial demands.

Components

Quick Assets (Liquid Assets)

1. **Cash and Cash Equivalents:** Immediate cash on hand and assets that can be converted to cash within 90 days.
2. **Accounts Receivable:** Money owed to the company by customers for goods or services sold on credit, expected to be collected within a short period.
3. **Marketable Securities:** Financial instruments that can be quickly sold on the market for cash.

Current Liabilities

1. **Accounts Payable:** Money the company owes to suppliers for goods and services purchased on credit.
2. **Short-Term Debt:** Borrowings that are due within one year.
3. **Accrued Liabilities:** Expenses that have been incurred but not yet paid.
4. **Other Current Liabilities:** Various other obligations that are due within one year, such as taxes payable and wages payable.

Formula:

$$\text{QUICK RATIO} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}}$$

Where:

Quick Assets = Current Assets – (Stock + Prepaid Expenses)

Quick Liabilities = Current Liability – Bank Over Draft

5.3.3. Absolute Liquid Ratio

The absolute liquid ratio, also known as the cash ratio or super quick ratio, measures a company's ability to meet its short-term liabilities using its most liquid assets, specifically cash and cash equivalents. This ratio excludes receivables and inventory, providing the most stringent test of a company's short-term solvency.

Objectives

1. **Assess Immediate Solvency:** To evaluate a company's capacity to pay off its current liabilities instantly with its absolute liquid assets.
2. **Provide a Conservative Liquidity Measure:** To offer a conservative assessment of liquidity by focusing only on cash and cash equivalents.
3. **Highlight Financial Safety:** To indicate the level of financial safety and preparedness for unexpected cash requirements.
4. **Support Decision-Making:** To aid creditors, investors, and management in making decisions based on the company's immediate financial strength.

Components

Absolute Liquid Assets (Most Liquid Assets)

1. **Cash and Cash Equivalents:** Includes cash on hand, demand deposits, and short-term investments that can be quickly converted into cash without significant loss of value.
2. **Marketable Securities:** Liquid financial instruments that can be sold in the short term for cash, such as government bonds and treasury bills.

Current Liabilities

1. **Accounts Payable:** Money the company owes to suppliers for goods and services purchased on credit.
2. **Short-Term Debt:** Borrowings that is due within one year.
3. **Accrued Liabilities:** Expenses that have been incurred but not yet paid.
4. **Other Current Liabilities:** Various other obligations due within one year, such as taxes payable and wages payable.

Formula:

Absolute Liquid Ratio	Absolute Liquid Assets
	Current Liability

Formulas and Interpretation

Liquidity ratios

Sl.no	Ratio	Formula	Interpretation
1.	CURRENT RATIO	$\frac{\text{Current assets}}{\text{Current liabilities}}$	2:1
2.	QUICK RATIO	$\frac{\text{Quick Assets}}{\text{Quick Liabilities}}$ <p>Quick Assets = Current Assets – (Stock + Prepaid Expenses) Quick Liabilities = Current Liability – Bank overdraft</p>	1:1
3	Absolute Liquid Ratio	$\frac{\text{Absolute Liquid Assets}}{\text{Current Liability}}$	0.5:1 or 1:2

Example 1: The following is the Balance Sheet of Bharath Electronic Limited for the year ending 31stDec 2020.

Liabilities	Rs.	Assets	Rs.
Capital	6,00,000	Fixed assets	10,00,000
Reserves & Surplus	4,00,000	Investments	3,00,000
Debentures	7,00,000	Cash	50,000
Sundry creditors	60,000	Debtors	1,50,000
Bills payable	1,00,000	Marketable securities	2,00,000
O/S expenses	10,000	Stock	3,00,000
Bank overdraft	1,30,000		
	20,00,000		20,00,000

From the above balance sheet, ascertain:

- Current ratio
- Quick ratio
- Absolute liquid ratio
- Comment on these ratios.

Sol:

$$(a) \text{ Current ratio} = \frac{\text{Current Assets } 7,00,000}{\text{Current Liabilities } 3,00,000} = 2.33:1$$

Where

Current assets = Cash 50,000+ Debtors 1,50,000+ Marketability Securities 2,00,000+ Stock 3,00,000 = 7,00,000

Current Liability = Sundry Creditors 60,000+Bills Payable 1, 00,000+ Outstanding Expenses 10,000+Bank overdraft 1,30,000 =3,00,000

$$\text{b) Quick ratio} = \frac{\text{Quick Assets } 4,00,000}{\text{Current Liabilities } 3, 00,000} = 2.33 : 1$$

Where Quick Assets= Current asset-(Stock+ Prepaid expenses)

Quick Assets = 7, 00,000-3, 00,000 =4, 00,000

$$\text{c) Absolute Liquid ratio} = \frac{\text{Absolute Liquid Assets } 2,50,000}{\text{Current Liabilities } 3,00,000} = 0.83 : 1$$

Where

Absolute Liquid Assets = cash 50,000 + marketability securities 2, 00,000 =2, 50,000

d) Comment on these ratios

- a) **Current Ratio (2.33):** This ratio being significantly higher than the standard 2:1 indicates a strong ability to meet short-term obligations. The company has more than enough current assets to cover its current liabilities, providing a comfortable cushion.
- b) **Acid-Test Ratio (1.33):** This ratio focuses on the most liquid assets and is considered a more conservative measure. Even with the exclusion of inventory, the company still has a healthy ratio exceeding the standard 1:1. This suggests the company can readily meet its immediate short-term needs.
- c) **Absolute Liquid Ratio (0.83):** This ratio solely considers cash and marketable securities, providing the most stringent test of immediate liquidity. While lower than the standard 0.5 to 1 range, the ratio is still considerably high, further strengthening the company's short-term financial position.

5.4. Turnover Ratios

Turnover ratios are a crucial tool in financial analysis, measuring how efficiently a company utilizes its assets to generate sales. They assess a company's operational effectiveness and its ability to convert resources into revenue.

5.4.1. Stock Turnover Ratio

The stock turnover ratio, also known as the inventory turnover ratio, measures how efficiently a company manages its inventory. It indicates the number of times the company sells and replaces its inventory within a specific period, usually a year.

Objectives:

The main objective of analyzing the stock turnover ratio is to assess a company's inventory management efficiency. A high turnover ratio suggests that the company is effectively selling and replacing its inventory, leading to:

1. **Reduced inventory carrying costs:** Lowering the average amount of inventory held reduces storage and financing costs.
2. **Improved cash flow:** Faster inventory turnover leads to quicker conversion of inventory into cash, improving the company's financial health.
3. **Increased sales:** Efficient inventory management can support higher sales by ensuring sufficient stock availability to meet customer demand.

Components:

The stock turnover ratio is calculated using two components:

1. **Cost of Goods Sold (COGS):** This represents the direct costs associated with the production or acquisition of goods sold during the period.
2. **Average Inventory:** This is the average value of the company's inventory throughout the period. It's typically calculated as the average of the beginning and ending inventory balances.

Formula:

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

Cost of Goods Sold (COGS):

$$\text{Cost of goods sold} = \text{Opening Stock} + \text{Purchases} + \text{Direct Expenses} - \text{Closing Stock}$$

Average Inventory:

$$\text{Average Stock} = \frac{(\text{Opening Stock} + \text{Closing Stock})}{2}$$

Example

Calculate inventory turnover ratio of XYZ Ltd. As per the given Information:

Opening inventories	50,000
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Closing inventories	60,000
Cost of goods manufactured	4,90,000

Solution:

Cost of goods sold = Opening stock + Purchases + Direct expenses - Closing stock

Cost of goods sold = 50,000 + 4,90,000 - 60,000 = 4,80,000

Average inventories = $\frac{(50,000 + 60,000)}{2} = 55,000$

Inventory turnover ratio = $4,80,000 \div 55,000 = 8.73$

The inventory turnover ratio for XYZ Ltd. is **8.73**. This indicates that the company turns over its inventory approximately 8.91 times during the year.

5.4.2. Debtors Turnover Ratio

The Debtors Turnover Ratio, also known as the Accounts Receivable Turnover Ratio, is a crucial metric used to assess a company's efficiency in collecting its outstanding debts from customers. This ratio measures how many times, on average, a company collects its accounts receivable (money owed by customers) within a specific period, usually a year. It indicates the effectiveness of the company's credit management and collection practices.

Objectives:

The main objectives of analyzing the Debtors Turnover Ratio are:

1. **Assess the efficiency of credit management:** A high ratio suggests that the company is effectively collecting its receivables and has a strong credit policy.
2. **Evaluate the collection period:** The ratio helps determine how long it takes the company to collect its outstanding debts, which can impact its cash flow and financial health.
3. **Identify areas for improvement:** By analyzing the ratio over time, companies can identify potential issues in their credit and collection processes and implement corrective measures.

Components:

The Debtors Turnover Ratio is calculated using two components:

1. **Net Credit Sales:** This represents the total revenue generated from sales made on credit during the period. It's calculated by subtracting sales returns and allowances from the total sales figure.
2. **Average Accounts Receivable:** This represents the average balance of accounts receivable held by the company throughout the period. It's typically calculated as the average of the beginning and ending accounts receivable balances.

Formula:

The Debtors Turnover Ratio is calculated as:

The Debtors Turnover Ratio is calculated as:

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average accounts receivables}}$$

Net Credit Sales = Gross credit sales- sales return

$$\text{Average Trade Debtors} = \frac{(\text{Opening Debtors} + \text{closing debtors})}{2}$$

Interpretation:

A higher Debtors Turnover Ratio generally indicates more efficient credit and collection practices. However, industry benchmarks and the company's specific circumstances should be considered.

High turnover: A very high ratio might suggest overly strict credit policies, potentially limiting sales opportunities.

Low turnover: A low ratio could indicate ineffective collection processes, leading to delayed payments and potential bad debts.

Example

Let us assume XYZ has the following result of the previous financial year calculate Debtor turnover ratio

Opening Debtors	64,000
Closing Debtors	72,000
Credit Sale	8,00,000

Solution:**Formula for Debtor Turnover Ratio:**

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average accounts receivables}}$$

Calculate the Average Debtors:

$$\text{Average Debtors} = \frac{(\text{opening debtors} + \text{closing debtors})}{2}$$

$$\text{Average Debtors} = \frac{(64,000 + 72,000)}{2}$$

Average Debtors= 68,000

Credit Sales:

Credit Sales=8, 00,000

Calculate the Debtor Turnover Ratio:

$$\text{Debtors Turnover Ratio} = \frac{8,00,000}{68,000}$$

Debtor Turnover Ratio= 11.76

The debtor turnover ratio for XYZ Ltd. is **11.76**. This indicates that the company collects its average receivables approximately 11.76 times during the year.

5.4.3. Creditors Turnover Ratio

The Creditors Turnover Ratio, also known as the Accounts Payable Turnover Ratio, is a financial metric that assesses a company's efficiency in managing its accounts payable (short-term debts owed to suppliers).

Meaning:

This ratio measures how many times, on average, a company pays off its accounts payable within a specific period, usually a year. It indicates the effectiveness of the company's payables management practices and its ability to maintain good relationships with suppliers.

Objectives:

The main objectives of analyzing the Creditors Turnover Ratio are:

Evaluate payables management: A high ratio suggests that the company is effectively managing its accounts payable and taking advantage of favorable payment terms.

Assess supplier relationships: A healthy ratio indicates that the company is paying its suppliers promptly, which can strengthen relationships and potentially lead to better terms.

Identify potential cash flow issues: A very high or low ratio could indicate potential problems with cash flow management or supplier relationships.

Formula:

The Creditors Turnover Ratio is calculated as:

The Creditors Turnover Ratio is calculated as:

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit purchases}}{\text{Average trade creditors}}$$

Net credit purchase = Gross credit purchases – purchase returns

$$\text{Average creditors} = \frac{(\text{opening creditors} + \text{closing creditors})}{2}$$

Interpretation:

A higher Creditors Turnover Ratio generally indicates more efficient payables management and potentially stronger supplier relationships. However, industry benchmarks and the company's specific circumstances should be considered.

- **High turnover:** A very high ratio might suggest overly aggressive payables management, potentially straining relationships with suppliers.
- **Low turnover:** A low ratio could indicate the company is taking longer to pay its suppliers, which could lead to strained relationships and potential late payment penalties.

Therefore, the optimal Creditors Turnover Ratio depends on the industry, business model, and the company's payables management policies.

Example

Let us assume XYZ has the following result of the previous financial year calculate Creditor Turnover Ratio

Opening Creditors	30,000
Closing Creditors	50,000
Credit Purchase	5,00,000

Solution:

$$\text{Average Creditors} = \frac{(30,000 + 50,000)}{2} = 40,000$$

$$\text{Creditors Turnover ratio} = \frac{5,00,000}{40,000} = 12.5$$

The creditor turnover ratio for XYZ Ltd. is **12.5**. This indicates that the company pays its average creditors approximately 12.5 times during the year.

5.4.4.Capital Turnover Ratio

This ratio indicates how much revenue a company generates for each dollar of invested capital. It reflects the company's ability to convert its capital into sales effectively.

Objectives:

The main objectives of analyzing the Capital Turnover Ratio are:

Assess capital efficiency: A high ratio suggests that the company is effectively using its capital to generate revenue, which can lead to higher profitability.

Compare performance: Comparing the ratio with industry benchmarks and the company's historical data can provide insights into its relative efficiency and track progress over time.

Identify areas for improvement: A low ratio might indicate an over-reliance on debt or underutilization of capital, prompting investigation into potential areas for improvement.

Formula:

The Capital Turnover Ratio is calculated as:

$$\text{Capital Turnover Ratio} = \frac{\text{Net Sales}}{\text{Capital employed}}$$

Net sales= Gross sales – sales return

Capital employed = long term debt + shareholders fund

Interpretation:

A higher Capital Turnover Ratio generally indicates more efficient capital utilization and potentially higher profitability. However, industry benchmarks and the company's specific circumstances should be considered.

- **High turnover:** A very high ratio might suggest the company is reaching the limit of its capital efficiency, requiring further investment for growth.
- **Low turnover:** A low ratio could indicate underutilization of capital, excessive debt, or inefficient operations, potentially impacting profitability.

Therefore, the optimal Capital Turnover Ratio depends on the industry, business model, and the company's capital structure and operational efficiency.

Example: XYZ Ltd. has the following financial information for the year ending 31st December 2023:

Gross Sales 2,000,000
Sales Returns 100,000
Long-term Debt 500,000
Shareholders' Funds 800,000

Calculate the Capital Turnover Ratio and interpret the results based on the provided information.

Step-by-Step Solution:

Calculate Net Sales:

Net Sales=Gross Sales–Sales Returns

Net Sales=2,000,000–₹100,000

Net Sales=19, 00,000

Calculate Capital Employed:

Capital Employed=Long-term Debt Shareholders'

Capital Employed = 5, 00,000 + 8, 00,000

Capital Employed = 13, 00,000

Calculate the Capital Turnover Ratio:

Capital Turnover Ratio=Net Sales/Capital Employed

Capital Turnover Ratio=19, 00,000/13, 00,000

Capital Turnover Ratio=1.46

Interpretation:

Capital Turnover Ratio of 1.46: This indicates that for every ₹1 of capital employed, XYZ Ltd. generates ₹1.46 in sales.

5.4.5. Working capital turnover Ratio

This ratio indicates how much revenue a company generates for each dollar of invested working capital. Working capital represents the difference between current assets and current liabilities, essentially the funds readily available for day-to-day operations.

Objectives:

The main objectives of analyzing the Working Capital Turnover Ratio are:

Assess working capital efficiency: A high ratio suggests that the company is effectively using its working capital to generate sales, leading to better cash flow and profitability.

Identify areas for improvement: A low ratio might indicate inefficient management of working capital, such as excessive inventory or slow collection of receivables. This can prompt corrective actions to optimize working capital usage.

Compare performance: Comparing the ratio with industry benchmarks and the company's historical data can provide insights into its relative efficiency and track progress over time.

Formula:

The Working Capital Turnover Ratio is calculated as:

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

Net sales = gross sales – sales return

Working capital = current assets – current liability

Interpretation:

A higher Working Capital Turnover Ratio generally indicates more efficient utilization of working capital and potentially higher profitability. However, industry benchmarks and the company's specific circumstances should be considered.

High turnover: A very high ratio might suggest that the company is reaching the limit of its working capital efficiency, requiring careful monitoring and potentially adjustments to avoid cash flow issues.

Low turnover: A low ratio could indicate underutilization of working capital, excessive inventory, or slow collection of receivables, potentially impacting cash flow and profitability.

Therefore, the optimal Working Capital Turnover Ratio depends on the industry, business model, and the company's working capital management practices.

Example Calculate Working Capital Turnover ratio of XYZ Ltd. As per the given Information:

Net Sales	5,00,000
Current Asset	10,00,000
Closing Creditors	7,50,000

Solution:

Working Capital Turnover Ratio=Net Sales/Working Capital

Where Net Sales= 5, 00,000

Working Capital=Current Assets–Closing Creditors

Working Capital=10, 00,000–7, 50,000

Working Capital=2, 50,000

Working Capital Turnover Ratio = 5, 00,000 / 2, 50,000

Working capital turnover ratio=2

Conclusion:

The Working Capital Turnover Ratio for XYZ Ltd. is **2**. This indicates that for every ₹1 of working capital, the company generates ₹2 in sales. This ratio provides insight into how efficiently the company is using its working capital to generate revenue. A higher ratio suggests more efficient use of working capital, while a lower ratio may indicate inefficiencies or the need for better management of working capital.

5.4.6. Fixed asset turnover Ratio

This ratio indicates how much revenue a company generates for each dollar invested in its fixed assets, which include property, plant, and equipment (PP&E). A higher FATR suggests that the company is efficiently using its fixed assets to produce revenue.

Objectives:

The main objectives of analyzing the Fixed Asset Turnover Ratio are:

Assess fixed asset utilization: A high ratio indicates that the company is effectively utilizing its fixed assets, potentially leading to higher sales and profitability.

Identify areas for improvement: A low ratio might suggest underutilization of fixed assets, such as idle machinery or excessive capacity, prompting investigation into potential improvements.

Compare performance: Comparing the ratio with industry benchmarks and the company's historical data can provide insights into its relative efficiency and track progress over time.

Formula:

The Fixed Asset Turnover Ratio is calculated as:

$$\text{Fixed Asset Turnover Ratio} = \frac{\text{Net Sales}}{\text{Net total Fixed Assets}}$$

Net sales = gross sales – sales return

Net total fixed assets = gross fixed asset - depreciation

Interpretation:

A higher Fixed Asset Turnover Ratio generally indicates more efficient utilization of fixed assets and potentially higher profitability. However, industry benchmarks and the company's specific circumstances should be considered.

- **High turnover:** A very high ratio might suggest that the company is reaching the limit of its fixed asset efficiency, requiring careful monitoring and potentially adjustments to avoid overcapacity.
- **Low turnover:** A low ratio could indicate underutilization of fixed assets, excessive capacity, or inefficient production processes, potentially impacting profitability.

Therefore, the optimal Fixed Asset Turnover Ratio depends on the industry, business model, and the company's production processes and fixed asset management practices.

Example: XYZ Ltd. has the following financial information for the year ending 31st December 2023:

Gross Sales	2,500,000
Sales Returns	100,000
Gross Fixed Assets	1,500,000
Accumulated Depreciation	300,000

Calculate the Fixed Asset Turnover Ratio and interpret the results based on the provided information.

Solution:

Fixed Asset Turnover Ratio=Net Sales/Net Total Fixed Asset

Net Sales=Gross Sales–Sales Returns

Net Sales=₹2,500,000–₹100,000

Net Sales=₹2,400,000

Calculate Net Total Fixed Assets:

Net Total Fixed Assets=Gross Fixed Assets–Accumulated Depreciation

Net Total Fixed Assets=₹1,500,000–₹300,000

Net Total Fixed Assets=₹1,200,000

Fixed Asset Turnover Ratio=24, 00,000/12, 00,000

Fixed Asset Turnover Ratio=2

Interpretation:

Fixed Asset Turnover Ratio of 2: This indicates that for every ₹1 invested in fixed assets, XYZ Ltd. generates ₹2 in sales.

Formulas and Interpretation

Sl.no	Ratio	
1.	Stock Turnover Ratio	<p>Stock Turnover Ratio = Stock Turnover Ratio = Cost of goods sold/ Average Stock</p> <p>Cost of Goods Sold (COGS):</p> <p>Cost of goods sold = Opening Stock + Purchases + Direct Expenses - Closing Stock</p> <p>Average Inventory:</p> <p>Average Stock = (Opening Stock + Closing Stock) / 2</p>
2.	Debtors Turnover Ratio	<p>Debtors Turnover Ratio = Net Credit Sales / Average Accounts Receivable</p> <p>Net Credit Sales = Gross credit sales- sales return</p> <p>Average Accounts Receivable (or) Average Trade Debtors = (Opening Debtors + Closing debtors) / 2</p>
3	Creditors Turnover Ratio	<p>Creditors Turnover Ratio = Net credit purchase / Average trade creditors</p>

		<p>Net credit purchase = gross credit purchases – purchase returns</p> <p>Average trade creditors =(opening trade creditors + closing trade creditors) / 2</p>
4	Capital Turnover Ratio	<p>Capital Turnover Ratio = Net Sales / Capital employed</p> <p>Net Sales = gross sales – sales return</p> <p>Capital employed = long term debt + shareholders fund</p>
5	working capital turnover Ratio	<p>Working Capital Turnover Ratio = Net Sales / Working Capital</p> <p>Net sales = gross sales – sales return</p> <p>Working capital = current assets – current liability</p>
6	Fixed asset turnover Ratio	<p>Fixed Asset Turnover Ratio = Net Sales / Net total Fixed Assets</p> <p>Net sales = gross sales – sales return</p> <p>Net total fixed assets = gross fixed asset - depreciation</p>

5.5. Profitability ratios

Profitability ratios are a crucial set of financial metrics used to assess a company's ability to generate profit from its operations. They provide valuable insights into a company's financial health and efficiency in converting revenue into earnings.

5.5.1. Gross Profit Ratio

The Gross Profit Ratio (GPR) is a financial metric that measures the percentage of revenue remaining after deducting the cost of goods sold (COGS). It indicates the efficiency of the company's core business in generating profit from sales.

Objectives:

Assess the effectiveness of cost management and pricing strategies: A higher GPR suggests that the company is effectively managing its production costs and pricing its products or services competitively.

Evaluate the profitability of the core business: The GPR provides a snapshot of the company's ability to generate profit from its core operations before considering other expenses.

Formula:

Gross profit Ratio	$\text{Gross profit} / \text{Net Sales} \times 100$
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Interpretation:

- A higher GPR is generally considered better, indicating more efficient cost management and pricing strategies.
- However, it's important to compare the GPR with industry benchmarks and the company's historical performance for a more accurate assessment.

5.5.2. Net Profit Ratio

The Net Profit Ratio, also known as the Net Profit Margin, is a crucial financial metric that measures a company's overall profitability. It indicates the percentage of revenue remaining after deducting all expenses, including:

Operating expenses: Costs associated with the day-to-day operations of the business.

Interest expense: Cost of borrowing money.

Taxes: Taxes paid to the government.

Objectives of Analyzing the Net Profit Ratio:

Evaluate the company's ability to generate sustainable profits: A higher Net Profit Ratio suggests that the company is effectively managing its costs and generating a healthy profit margin. This indicates financial stability and the potential for future growth.

Assess the effectiveness of overall cost management and operational efficiency: Analyzing the Net Profit Ratio over time can help identify areas where the company can improve its cost control and operational efficiency. This can lead to strategies for reducing expenses and increasing profitability.

Compare the company's profitability with industry benchmarks: Comparing the Net Profit Ratio with industry averages provides insights into the company's relative performance within its sector. This allows for benchmarking and identifying potential areas for improvement.

In essence, the Net Profit Ratio is a key indicator of a company's financial health and its ability to generate sustainable profits.

Formula:

Net Profit Ratio.	$\text{Net profit (after tax) / Net sales X 100}$
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5.5.3. Operating Ratio

The Operating Ratio is a profitability ratio that measures the efficiency of a company's core business operations. It indicates the percentage of revenue consumed by operating expenses.

Meaning:

The Operating Ratio, also known as the Expense Ratio, shows how much of a company's revenue is used to cover its operating costs. These costs include:

Cost of Goods Sold (COGS): Direct costs associated with producing or acquiring goods sold.

Selling, General & Administrative Expenses (SG&A): Expenses related to marketing, advertising, administration, and other general business operations.

Objectives:

Assess the effectiveness of expense management and operational efficiency: A lower Operating Ratio suggests that the company is effectively controlling its operating costs and generating more profit from its core business activities.

Identify areas for improvement: Analyzing the Operating Ratio over time can help companies identify areas where they can reduce expenses and improve operational efficiency.

Compare performance with industry benchmarks: Comparing the Operating Ratio with industry averages provides insights into the company's relative cost management and operational efficiency compared to its competitors.

Formula:

$$\text{Operating Ratio} = (\text{Operating cost}) / \text{net Sales} * 100$$

Interpretation:

- A lower Operating Ratio is generally considered better, indicating more efficient expense management and operational control.
- However, it's important to consider the company's industry and business model when interpreting the Operating Ratio.
- For example, a company with a higher Operating Ratio might be justified if it operates in a high-growth industry where significant investments are made in marketing and research & development.

Formula:

Operating Ratio.	$\text{Operating Cost} / \text{Sales} * 100$ $\text{Operating cost} = \text{Cost of goods sold} + \text{operating expenses (Administration Expenses + Selling \& Distribution exp)}$ $\text{Cost of goods sold} = \text{Sales} - \text{Gross Profit}$
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5.5.4. Operating profit ratio

The Operating Profit Ratio (OPR), also known as the EBIT Margin, measures the percentage of revenue remaining after deducting all operating expenses. These expenses include:

- **Cost of Goods Sold (COGS):** Direct costs associated with producing or acquiring goods sold.
- **Selling, General & Administrative Expenses (SG&A):** Expenses related to marketing, advertising, administration, and other general business operations.

Objectives:

Assess the effectiveness of expense management and operational efficiency: A higher OPR suggests that the company is effectively managing its operating costs and generating more profit from its core business activities.

Identify areas for improvement: Analyzing the OPR over time can help companies identify areas where they can reduce expenses and improve operational efficiency.

Compare performance with industry benchmarks: Comparing the OPR with industry averages provides insights into the company's relative cost management and operational efficiency compared to its competitors.

Formula:

Operating Profit Ratio.	$\frac{\text{Operating profit}}{\text{Net sales}} \times 100$ or $100 - \text{Operating ratio}$
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Interpretation:

- A higher Operating Profit Ratio is generally considered better, indicating more efficient expense management and operational control.
- However, it's important to consider the company's industry and business model when interpreting the OPR.
- For example, a company with a lower OPR might be justified if it operates in a high-growth industry where significant investments are made in marketing and research & development.

5.5.5. Expenses Ratio

The Expenses Ratio is a financial metric that measures the percentage of revenue consumed by both operating expenses and interest expense. It provides a broader view of the company's overall cost structure.

Objectives:

1. **Assess the efficiency of both operational and financial expense management:** A lower Expenses Ratio suggests that the company is effectively controlling both its operating costs (COGS, SG&A) and its financing costs (interest expense).
2. **Identify areas for improvement:** Analyzing the Expenses Ratio over time can help companies identify areas where they can reduce both operating and financial expenses.
3. **Compare performance with industry benchmarks:** Comparing the Expenses Ratio with industry averages provides insights into the company's relative cost management and financial efficiency compared to its competitors.

Formula:

Expenses Ratio	$\frac{\text{Amount of expenses}}{\text{Net sales}} \times 100$ Amount of expenses are Administrative expenses Selling and distribution expenses Financial expenses
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Interpretation:

- A lower Expenses Ratio is generally considered better, indicating more efficient cost management across both operational and financial aspects.
- However, it's important to consider the company's industry and specific circumstances when interpreting the Expenses Ratio.
- For example, a company with a higher Expenses Ratio might be justified if it operates in a capital-intensive industry with significant debt financing.

5.5.6 Return on Total Assets (ROA)

The Return on Total Assets (ROA) is a financial metric that measures a company's profitability in relation to its total assets. It indicates how effectively the company is utilizing its assets (both debt and equity) to generate profit.

Objectives:

Assess asset utilization efficiency: A higher ROA suggests that the company is effectively using its assets to generate profits, indicating good financial management and potentially higher returns for investors.

Identify areas for improvement: Analyzing the ROA over time can help companies identify areas where they can improve their asset utilization, such as reducing unnecessary assets or optimizing their investment in productive assets.

Compare with industry benchmarks: Comparing the ROA with industry averages provides insights into the company's relative efficiency in utilizing its assets compared to its competitors.

Formula:

Return on Total Assets	$ROA = \left(\frac{\text{Net Profit Before Interest and Tax}}{\text{Total Assets}} \right) * 100$
------------------------	--

Interpretation:

- A higher ROA is generally considered better, indicating more efficient asset utilization and potentially higher profitability.
- However, it's important to consider the company's industry and specific circumstances when interpreting the ROA.
- For example, a capital-intensive industry like manufacturing might have a lower ROA compared to a service-based industry due to the higher investment in fixed assets.

5.5.7 Return on Equity (ROE)

The Return on Equity (ROE) is a financial metric that measures the profitability of a company in relation to its shareholders' equity. It indicates how effectively the company is utilizing the investments made by its shareholders to generate profit.

Objectives:

Assess the efficiency of shareholder investments: A higher ROE suggests that the company is generating a good return on the money invested by its shareholders. This is important for attracting and retaining investors.

Identify areas for improvement: Analyzing the ROE over time can help companies identify ways to improve their profitability and increase the return on shareholder investments.

Compare with industry benchmarks: Comparing the ROE with industry averages provides insights into the company's relative performance in generating returns for its shareholders compared to its competitors.

Formula:

Return on equity	$\text{ROE} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$ <p>Share holders equity= equity share holder fund + preference share holders fund +reserve and surplus – fictitious assets (if any)</p>
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Interpretation:

- A higher ROE is generally considered better, indicating more efficient use of shareholder investments and potentially higher returns for shareholders.
- However, it's important to consider the company's industry, financial leverage (debt), and specific circumstances when interpreting the ROE.
- For example, companies in capital-intensive industries might have a lower ROE due to the higher investment in fixed assets.
- Additionally, companies with high levels of debt might have a higher ROE due to the financial leverage effect, but this also increases financial risk.

Profitability Formulas

These ratios measure the results of business operations or overall performance and effectiveness of the firm.

SL.NO	RATIO	FORMULAE
1.	Gross profit Ratio	$\text{Gross profit} / \text{Net Sales} \times 100$
2.	Operating Ratio.	$\text{Operating cost} = \text{Cost of goods sold} + \text{Administration Expenses} + \text{Selling \& Distribution expenses}$ $\text{Cost of goods sold} = \text{Sales} - \text{Gross Profit}$
3.	Operating Profit Ratio.	$\text{Operating profit} / \text{Net sales} \times 100$ or $100 - \text{Operating ratio}$
4.	Net Profit Ratio.	$\text{Net profit (after tax)} / \text{Net sales} \times 100$
5.	Expenses Ratio	$\text{Amount of expenses} / \text{Net sales} \times 100$ <p>Amount of expenses are Administrative expenses Selling and distribution expenses Financial expenses</p>
6	Return on Total Assets	$\text{ROA} = (\text{Net Profit Before Interest and Tax} / \text{Total Assets}) \times 100$
7	Return on equity	$\text{ROE} = \text{Net Income} / \text{Shareholder's Equity}$ <p>Share holders equity= equity share holder fund + preference share holders fund +reserve and surplus – fictitious assets (if any)</p>

5.6 Proprietary ratio

The proprietary ratio, also known as the equity ratio or net worth ratio, is a financial metric that measures the proportion of a company's total assets financed by its shareholders' equity. It essentially reflects the extent to which a company relies on internal funds as opposed to external debt.

5.6.1. Equity Ratio

The **Equity Ratio**, also known as the **Shareholders' Equity Ratio** or **Net worth Ratio**, is a crucial financial metric that measures the proportion of a company's total assets financed by its shareholders' equity.

Meaning:

The Equity Ratio indicates the extent to which a company relies on internal funds (equity) as opposed to external debt to finance its operations and assets. It essentially reflects the company's capital structure and financial health.

Objectives:

Assess financial stability and solvency: A higher Equity Ratio suggests a stronger financial position, as the company has a larger cushion against potential financial difficulties and relies less on debt.

Evaluate reliance on equity financing: The ratio helps understand the company's capital structure and financing strategy.

Compare with industry benchmarks: Comparing the Equity Ratio with industry averages provides insights into the company's relative financial position and risk profile compared to its competitors.

Formula:

Equity Ratio = Shareholders' Equity / Total Assets

Components:

- **Shareholders' Equity:** This represents the total amount of money invested by shareholders in the company. It is calculated as the difference between total assets and total liabilities.
- **Total Assets:** This represents the total value of all assets owned by the company, including current assets and non-current assets.

Interpretation:

- **Higher Ratio:** Generally considered better, indicating a stronger financial position with less reliance on debt.
- **Lower Ratio:** Suggests a higher dependence on debt, which can increase financial risk and make the company more vulnerable to economic downturns.

Example: XYZ Ltd. has the following financial information for the year ending 31st December 2023:

Total Assets: ₹4,000,000

Total Liabilities: ₹1,500,000

Calculate the Equity Ratio and interpret the results based on the provided information.

Solution:

Calculate the Equity Ratio:

Equity Ratio = Shareholders' Equity / Total Assets

Calculate Shareholders' Equity:

Shareholders' Equity = Total Assets - Total Liabilities

Shareholders' Equity = ₹4,000,000 - ₹1,500,000

Shareholders' Equity = ₹2,500,000

Equity Ratio = $\frac{2,500,000}{4,000,000}$

Equity Ratio = 0.625

Interpretation:

Equity Ratio of 0.625: This indicates that 62.5% of XYZ Ltd.'s total assets are financed by shareholders' equity.

5.7 Solvency Ratios

Solvency ratios are a crucial set of financial metrics used to assess a company's ability to meet its long-term financial obligations. They provide insights into the company's financial health and its capacity to survive and thrive in the long run.

5.7.1. Debt- Equity Ratios

The Debt-to-Equity (D/E) Ratio is a solvency ratio that measures the extent to which a company finances its operations with debt compared to its shareholders' equity. It indicates the company's financial leverage, or the reliance on borrowed funds to finance its assets.

Objectives:

Assess financial leverage: The D/E Ratio helps evaluate the company's risk profile and its ability to meet its debt obligations.

Analyze capital structure: It provides insights into the company's mix of debt and equity financing, allowing for comparisons with industry benchmarks and competitors.

Identify potential financial risks: A high D/E Ratio can indicate a higher risk of default and financial distress if the company faces economic challenges.

Formula:

Debt-to-Equity Ratio = Total Long term Debts / Shareholders' Equity

Or

Debt equity Ratio = External equities/Internal equities

Where Total Long term Debts = long term debt mean long term loans whether secured or UN secured (Debentures, bonds, loans from financial institutions)

Share holders' equity: share holders fund means equity share capital + preference share capital + reserves and surplus-fictitious assets (e.g., preliminary expenses)

Interpretation:

- **Higher D/E Ratio:** Generally indicates higher financial leverage and potential risk, as the company relies more on debt financing.
- **Lower D/E Ratio:** Suggests a more conservative capital structure with less reliance on debt, potentially indicating lower financial risk.

5.7.2. Interest Coverage Ratio

The Interest Coverage Ratio (ICR), also known as the Times Interest Earned (TIE) Ratio, is a solvency ratio that measures a company's ability to meet its interest payments on outstanding debt. It indicates how easily the company can cover its interest expenses with its earnings before interest and taxes (EBIT).

Objectives:

Assess debt servicing capacity: The ICR helps evaluate a company's financial health and its ability to fulfill its debt obligations.

Analyze profitability and risk: A higher ICR suggests that the company has sufficient earnings to comfortably cover its interest expenses, indicating lower financial risk.

Compare with industry benchmarks: Comparing the ICR with industry averages provides insights into the company's relative financial strength and debt management compared to its competitors.

Formula:

Interest Coverage Ratio = $\text{EBIT} / \text{Interest Expense}$

Components:

- **EBIT (Earnings before Interest and Taxes):** This represents the company's operating profit before deducting interest and income taxes.
- **Interest Expense:** This includes all the interest payments made by the company on its outstanding debt, such as loans and bonds.

Interpretation:

- **Higher ICR:** Generally considered better, indicating a stronger ability to meet interest obligations and lower financial risk.
- **Lower ICR:** Suggests a tighter financial situation and potential difficulty in covering interest expenses, raising concerns about financial stability.

Example: XYZ Ltd. has the following financial information for the year ending 31st December 2023:

Earnings before Interest and Taxes (EBIT): ₹600,000

Interest Expense: ₹150,000

Calculate the Interest Coverage Ratio and interpret the results based on the provided information.

Solution:

Identify EBIT:

EBIT=₹600,000

Identify Interest Expense:

Interest Expense=₹150,000

Calculate the Interest Coverage Ratio

Interest Coverage Ratio=EBIT/Interest Expenses

Interest Coverage Ratio=6, 00,000/1, 50,000

Interest Coverage Ratio= 4

Interpretation:

Interest Coverage Ratio of 4: This indicates that XYZ Ltd. earns four times its interest expense before taxes and interests are considered.

5.8 Leverage Ratios

Leverage ratios are a crucial set of financial metrics used to assess the extent to which a company or individual relies on borrowed funds (debt) to finance its operations and assets. They provide insights into the company's capital structure, financial risk profile, and ability to meet its financial obligations.

5.8.1. Operating Leverage

Operating leverage is a financial concept that measures the sensitivity of a company's operating income to changes in sales volume. It essentially reflects how much a company's profits magnify or amplify changes in its sales.

Objectives:

Assess profit sensitivity: Operating leverage helps understand how fluctuations in sales volume affect the company's profitability.

Evaluate risk profile: Companies with high operating leverage experience larger swings in profits for even small changes in sales, potentially increasing financial risk.

Inform strategic decisions: Operating leverage can be used to make informed decisions about pricing, cost management, and investment strategies.

Formula:

There are two main ways to calculate operating leverage:

Operating Leverage (DOL):

$$\text{Operating Leverage} = \text{Fixed Costs} / \text{Total Costs}$$

Interpretation:

- **Higher DOL:** Indicates a higher degree of operating leverage, meaning small changes in sales can lead to larger changes in operating income.
- **Lower DOL:** Suggests a lower degree of operating leverage, meaning changes in sales have a smaller impact on operating income.

Example: XYZ Ltd. has the following financial information for the year ending 31st December 2023:

Fixed Costs: ₹200,000

Variable Costs: ₹300,000

Total Sales: ₹800,000

Calculate the Operating Leverage and interpret the results based on the provided information.

Sol:

Calculate Total Costs:

Total Costs = Fixed Costs + Variable Costs

Total Costs = ₹200,000 + ₹300,000

Total Costs = ₹500,000

Calculate Operating Leverage:

Operating Leverage = Fixed Cost / Total Cost

Operating Leverage = 2,00,000 / 5,00,000

Operating Leverage = 0.4

Interpretation:

Operating Leverage of 0.4: This indicates that for every ₹1 in total costs, ₹0.4 is fixed costs.

5.8.2. Financial Leverage

Financial leverage refers to the strategy of using borrowed funds (debt) to finance investments or operations. The goal is to amplify the return on equity (ROE) by potentially earning a higher return on the invested capital than the cost of borrowing.

Objectives:

1. **Increase potential returns:** By using borrowed funds, companies can potentially invest in more assets or projects than they could with their own equity, leading to higher potential returns.
2. **Expand operations:** Leverage can help companies finance growth initiatives and expansion plans without diluting ownership through issuing new equity.
3. **Improve financial performance:** If the return on investments financed with debt exceeds the cost of borrowing, the company's overall financial performance can be enhanced.

Formula:

Financial Leverage = Total Debt / share holder equity

Interpretation:

- **Higher Ratios:** Generally indicate a higher degree of financial leverage, meaning the company relies more on debt financing. This can potentially lead to higher returns but also increases financial risk.
- **Lower Ratios:** Suggest a more conservative capital structure with less reliance on debt, potentially indicating lower financial risk.

Example: ABC Corp. has the following financial information for the year ending 31st December 2023:

Total Debt: ₹1,500,000

Shareholder Equity: ₹2,000,000

Calculate the Financial Leverage and interpret the results based on the provided information

Sol:

Calculate Financial Leverage

Financial Leverage = Total Debt / Shareholder's equity

Financial Leverage = 1,500,000 / 2,000,000

Financial Leverage = 0.75

Interpretation:

Financial Leverage of 0.75: This indicates that for every ₹1 of shareholder equity, ABC Corp. has ₹0.75 of total debt.

Examples

The following Trading and Profit and Loss Account of xyz Ltd. for the year 31-3-2020 is given below:

Particular	Amount	Particular	Amount
To Opening Stock	76,250	By Sales	5,00,000
To Purchases	3,15,250	By Closing stock	98,500
To Carriage and Freight	2,000		
To Wages	5,000		
To Gross Profit b/d	2,00,000		
	5,98,500		5,98,500
To Administration expenses	1,01,000	By Gross Profit b/d	2,00,000
To Selling and Dist. expenses	12,000	By Non-operating incomes:	
To Non-operating expenses	2,000	By Interest on Securities	1,500
To Financial Expenses	7,000	By Dividend on shares	3,750
To Net Profit c/d	84,000	By Profit on sale of shares	750
	2,06,000		2,06,000

Calculate:

- 1) Gross Profit Ratio
- 2) Net Profit Ratio
- 3) Operating Ratio
- 4) Operating (Net) Profit Ratio
- 5) Expenses Ratio
- 6) Stock Turnover Ratio.

1) **Gross Profit Ratio** = (Gross profit/Net Sales)*100

Gross profit = 2, 00,000/5, 00,000*100

Gross profit = 40 %

2) **Net Profit Ratio** = (Net profit/Net Sales)*100

Net Profit = 84,000/5, 00,000*100

Net Profit = 16.8%

3) **Operating Ratio** = (Operating Profit/Net Sales)*100

Where operating Profit = Cost of Goods sold + Operating Expenses

Operating Profit = 3, 00,000+1, 13,000 =4, 13,000

Cost of goods sold = opening stock + purchases + carriage and Freight + wages – Closing Stock

Cost of goods sold = = 76250 + 315250 + 2000 + 5000 - 98500

Cost of goods sold = Rs.3, 00,000

Operating Expenses = Administration expenses + Selling and Dist. expenses

Operating Expenses = 1, 01,000+12,000

Operating Expenses = 1, 13,000
 Operating Ratio = $4, 13,000/5, 00,000 \times 100$
 Operating profit = 82.60%

4) **Operating Profit Ratio** = $100 - \text{operating Ratio}$

Operating Profit Ratio = 17.4%

5) **Expenses Ratio** = $(\text{operating expenses}/\text{Net Sales}) \times 100$

Operating Expenses = Administration expenses + Selling and Dist. expenses

Operating Expenses = 1, 01,000 + 12,000

Operating Expenses = 1, 13,000

Expenses Ratio = $1, 13,000/5, 00,000 \times 100$

Expenses Ratio = 22.60%

6) **Stock Turnover Ratio** = $(\text{cost of goods sold}/ \text{average stock})$

Cost of goods sold = opening stock + purchases + carriage and Freight + wages – Closing Stock

Cost of goods sold = $76250 + 315250 + 2000 + 5000 - 98500$

Cost of goods sold = Rs. 3, 00,000

Average Stock = $(\text{opening stock} + \text{closing stock})/2$

Average stock = $(76,250 + 98, 500)/2$

Average Stock = 87,375

Stock Turnover Ratio = $(3, 00,000/87,375)$

Stock turnover Ratio = 3.43 times

Example Problems:

Given below is the balance sheet as on 31st mar 2000

Liabilities	Amount	Assets	Amount
Equity Share Capital	100000	Land and Building	120000
Reserve Fund	50000	Plant and machinery	90,000
5% Debentures	800000	Stock	30,000
CURRENT			
Liabilities	20000	Debtors	10,000
	2,50,000		2,50,000

Find Out:

a. Debt-Equity Ratio

b. Proprietary Ratio.

c. Fixed Assets to Net worth Ratio

d. Current Assets to Net worth Ratio.

A) Debt-Equity Ratio

Debt-Equity Ratio= Total Debt/Shareholders' Equity

Where

Total Debt (includes long-term and current liabilities) = 6% Debentures + Current Liabilities
= 80,000 + 20,000 = 100,000

Shareholders' Equity (Equity Share Capital + Reserve Fund) = 100,000 + 50,000 = 150,000

Debt-Equity Ratio=1, 00,000/1, 50,000

Debt-Equity Ratio=0.67

b) Proprietary Ratio

Proprietary Ratio= Shareholders' Equity/ Total Assets

Proprietary Ratio=1, 50,000/2, 50,000

Proprietary Ratio=0.60

C) Fixed Assets to Net worth Ratio

Fixed Assets to Net Worth Ratio= Fixed Asset/Net Worth

Fixed Assets = Land & Building + Plant & Machinery = 120,000 + 90,000 = 210,000

Net Worth=Shareholders' Equity=150,000

Fixed Assets to Net Worth Ratio=2, 10,000/1, 50,000

Fixed Assets to Net Worth Ratio=1.4

d) Current Assets to Net worth Ratio

Current Assets to Net Worth Ratio=Current Assets / Net worth

Current Assets = Stock on Trade + Debtors = 30,000 + 10,000 = 40,000

Current Assets to Net Worth Ratio=40,000/1, 50,000

Current Assets to Net Worth Ratio=0.27

Important Questions

Short questions:

1. What are activity ratios? Give two examples.
2. Define Ratio Analysis with objectives.
3. What is the importance of capital structure ratio?
4. What are profitability ratio
5. Define Current Ratio, explain its formula.
6. What is debt-equity ratio? Explain its formula
7. Importance of ratio analysis
8. What are solvency ratios? Explain

Long Questions:

1. Describe the significance ratio analysis and briefly explain the salient features of activity ratios.
2. Explain the significance of Ratio Analysis in the financial decision making.
3. Define Ratio Analysis? Explain its classifications
4. What is liquidity ratio? Explain briefly
5. The following Trading and Profit and Loss Account of xyz Ltd. for the year 31 March 2020 is given below:

Particular	Amount	Particular	Amount
To Opening Stock	76,250	By Sales	5,00,000
To Purchases	3,15,250	By Closing stock	98,500
To Carriage and Freight	2,000		
To Wages	5,000		
To Gross Profit b/d	2,00,000		
	5,98,500		5,98,500
To Administration expenses	1,01,000	By Gross Profit b/d	2,00,000
To Selling and Dist. expenses	12,000	By Non-operating incomes:	
To Non operating expenses	2,000	By Interest on Securities	1,500
To Financial Expenses	7,000	By Dividend on shares	3,750
To Net Profit c/d	84,000	By Profit on sale of shares	750
	2,06,000		2,06,000

Calculate:

- 1) Gross Profit Ratio
- 2) Net Profit Ratio
- 3) Operating Ratio
- 4) Operating (Net) Profit Ratio
- 5) Expenses Ratio
- 6) Stock Turnover Ratio.

6. The following is the Balance Sheet of Bharath Electronic Limited for the year ending 31st Dec 2020.

Liabilities	Rs.	Assets	Rs.
Capital	6,00,000	Fixed assets	10,00,000
Reserves & Surplus	4,00,000	Investments	3,00,000
Debentures	7,00,000	Cash	50,000
Sundry creditors	60,000	Debtors	1,50,000
Bills payable	1,00,000	Marketable securities	2,00,000
O/S expenses	10,000	Stock	3,00,000
Bank overdraft	1,30,000		
	20,00,000		20,00,000

From the above balance sheet, ascertain:

- (a) Current ratio
- (b) Quick ratio
- (c) Absolute liquid ratio
- (d) Comment on these ratios

Objective Type Questions:

MCQs

1. Liquidity ratios measure a company's ability to:

- A) Generate profits
- B) Meet short-term obligations
- C) Finance long-term investments
- D) Pay dividends to shareholders

Answer: B) Meet short-term obligations

2. The current ratio is calculated by dividing:

- A) Total assets by total liabilities
- B) Current assets by current liabilities
- C) Net income by total assets
- D) Long-term debt by equity

Answer: B) Current assets by current liabilities

3. A quick ratio excludes which of the following from current assets?

- A) Cash
- B) Accounts receivable
- C) Inventory
- D) Prepaid expenses

Answer: C) Inventory

4. The acid-test ratio is another name for:

- A) Current ratio
- B) Quick ratio
- C) Debt ratio
- D) Inventory turnover ratio

Answer: B) Quick ratio

5. A current ratio of less than 1 indicates:

- A) Strong liquidity
- B) Weak liquidity
- C) High profitability
- D) Efficient inventory management

Answer: B) Weak liquidity

6. Turnover ratios measure a company's efficiency in:

- A) Generating profits
- B) Managing inventory and assets
- C) Obtaining financing
- D) Distributing dividends

Answer: B) Managing inventory and assets

7. The inventory turnover ratio is calculated by dividing:

- A) Cost of goods sold by average inventory
- B) Sales by total assets
- C) Net income by total sales
- D) Accounts payable by total purchases

Answer: A) Cost of goods sold by average inventory

8. A high accounts receivable turnover ratio indicates:

- A) Efficient collection of receivables
- B) Slow collection of receivables
- C) Low sales volume
- D) High inventory turnover

Answer: A) Efficient collection of receivables

9. The fixed asset turnover ratio measures:

- A) How efficiently a company uses its fixed assets to generate sales
- B) How quickly a company pays off its long-term debt
- C) The ratio of fixed assets to total assets
- D) The proportion of sales that are reinvested in fixed assets

Answer: A) How efficiently a company uses its fixed assets to generate sales

10. A low total asset turnover ratio may indicate:

- A) Efficient use of assets
- B) Inefficient use of assets
- C) Low profitability
- D) High liquidity

Answer: B) Inefficient use of assets

11. Profitability ratios measure a company's ability to:

- A) Meet short-term obligations
- B) Generate profits relative to sales, assets, or equity
- C) Manage inventory efficiently
- D) Obtain financing from shareholders

Answer: B) Generate profits relative to sales, assets, or equity

12. The gross profit margin is calculated by dividing:

- A) Gross profit by net income
- B) Gross profit by sales
- C) Net income by sales
- D) Net income by total assets

Answer: B) Gross profit by sales

13. A high return on equity (ROE) indicates:

- A) Low profitability
- B) Efficient use of equity to generate profits
- C) High liquidity
- D) Low financial risk

Answer: B

Fill in the Blanks

1. The formula for the current ratio is _____ divided by _____.

Answer: Current assets; current liabilities

2. The acid-test ratio excludes _____ from current assets.

Answer: Inventory

3. A current ratio of 2:1 means that current assets are _____ current liabilities.

Answer: Double

4. A quick ratio of 1:1 indicates that _____ are equal to current liabilities.

Answer: Quick assets

5. The formula for the acid-test ratio is _____ divided by _____.

Answer: Quick assets; current liabilities

6. The inventory turnover ratio is calculated by dividing _____ by _____.

Answer: Cost of goods sold; average inventory

7. A high accounts receivable turnover ratio indicates efficient _____.

Answer: Collection of receivables

8. The fixed asset turnover ratio measures how efficiently a company uses its fixed assets to generate _____.

Answer: Sales

9. The total asset turnover ratio is calculated by dividing _____ by _____.

Answer: Sales; total assets

10. A low total asset turnover ratio may indicate _____ use of assets.

Answer: Inefficient