



FINANCIAL STATEMENTS ANALYSIS - AN INTRODUCTION

You have already learnt about the preparation of financial statements i.e. Balance Sheet and Trading and Profit and Loss Account in the module titled 'Financial Statements of Profit and Not for Profit Organisations'. After preparation of the financial statements, one may be interested in analysing the financial statements with the help of different tools such as comparative statement, common size statement, ratio analysis, trend analysis, fund flow analysis, cash flow analysis, etc. In this process a meaningful relationship is established between two or more accounting figures for comparison. In this lesson you will learn about analysing the financial statements by using comparative statement, common size statement and trend analysis.



OBJECTIVES

After studying this lesson, you will be able to :

- explain the meaning, need and purpose of financial statement analysis;
- identify the parties interested in analysis of financial statements;
- explain the various techniques and tools of analysis of financial statements.

27.1 FINANCIAL STATEMENTS ANALYSIS (MEANING, PURPOSE AND PARTIES INTERESTED)

We know business is mainly concerned with the financial activities. In order to ascertain the financial status of the business every enterprise prepares certain statements, known as financial statements. Financial statements are mainly prepared for decision making purposes. But the information as is provided in the financial statements is not adequately helpful in drawing a meaningful conclusion. Thus, an effective analysis and interpretation of financial statements is required.

**Notes**

Analysis means establishing a meaningful relationship between various items of the two financial statements with each other in such a way that a conclusion is drawn. By financial statements we mean two statements :

- (i) Profit and loss Account or Income Statement
- (ii) Balance Sheet or Position Statement

These are prepared at the end of a given period of time. They are the indicators of profitability and financial soundness of the business concern.

The term financial analysis is also known as analysis and interpretation of financial statements. It refers to the establishing meaningful relationship between various items of the two financial statements i.e. Income statement and position statement. It determines financial strength and weaknesses of the firm.

Analysis of financial statements is an attempt to assess the efficiency and performance of an enterprise. Thus, the analysis and interpretation of financial statements is very essential to measure the efficiency, profitability, financial soundness and future prospects of the business units. Financial analysis serves the following purposes :

- **Measuring the profitability**

The main objective of a business is to earn a satisfactory return on the funds invested in it. Financial analysis helps in ascertaining whether adequate profits are being earned on the capital invested in the business or not. It also helps in knowing the capacity to pay the interest and dividend.

- **Indicating the trend of Achievements**

Financial statements of the previous years can be compared and the trend regarding various expenses, purchases, sales, gross profits and net profit etc. can be ascertained. Value of assets and liabilities can be compared and the future prospects of the business can be envisaged.

- **Assessing the growth potential of the business**

The trend and other analysis of the business provides sufficient information indicating the growth potential of the business.

- **Comparative position in relation to other firms**

The purpose of financial statements analysis is to help the management to make a comparative study of the profitability of various firms



Notes

engaged in similar businesses. Such comparison also helps the management to study the position of their firm in respect of sales, expenses, profitability and utilising capital, etc.

- **Assess overall financial strength**

The purpose of financial analysis is to assess the financial strength of the business. Analysis also helps in taking decisions, whether funds required for the purchase of new machines and equipments are provided from internal sources of the business or not if yes, how much? And also to assess how much funds have been received from external sources.

- **Assess solvency of the firm**

The different tools of an analysis tell us whether the firm has sufficient funds to meet its short term and long term liabilities or not.

PARTIES INTERESTED

Analysis of financial statements has become very significant due to widespread interest of various parties in the financial results of a business unit. The various parties interested in the analysis of financial statements are :

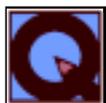
- (i) **Investors** : Shareholders or proprietors of the business are interested in the well being of the business. They like to know the earning capacity of the business and its prospects of future growth.
- (ii) **Management** : The management is interested in the financial position and performance of the enterprise as a whole and of its various divisions. It helps them in preparing budgets and assessing the performance of various departmental heads.
- (iii) **Trade unions** : They are interested in financial statements for negotiating the wages or salaries or bonus agreement with the management.
- (iv) **Lenders** : Lenders to the business like debenture holders, suppliers of loans and lease are interested to know short term as well as long term solvency position of the entity.
- (v) **Suppliers and trade creditors** : The suppliers and other creditors are interested to know about the solvency of the business i.e. the ability of the company to meet the debts as and when they fall due.



Notes

- (vi) **Tax authorities** : Tax authorities are interested in financial statements for determining the tax liability.
- (vii) **Researchers** : They are interested in financial statements in undertaking research work in business affairs and practices.
- (viii) **Employees** : They are interested to know the growth of profit. As a result of which they can demand better remuneration and congenial working environment.
- (ix) **Government and their agencies** : Government and their agencies need financial information to regulate the activities of the enterprises/ industries and determine taxation policy. They suggest measures to formulate policies and and regulations.
- (x) **Stock exchange** : The stock exchange members take interest in financial statements for the purpose of analysis because they provide useful financial information about companies.

Thus, we find that different parties have interest in financial statements for different reasons.



INTEXT QUESTIONS 27.1

- I. Fill in the blanks with suitable word/words :
 - (i) Financial statements are and
 - (ii) The term financial analysis include both and
 - (iii) In order to ascertain the financial status of the business every enterprise prepares a statement.
 - (iv) Financial statements are mainly prepared for purposes.
- II. Two columns are given below. Column I lists the parties interested in analysis and column II states the subject of their interest. Match the two columns.

Column I	Column II
(i) Management	(a) about solvency of the business
(ii) Employees	(b) Profitability
(iii) Shareholders	(c) Performance of the enterprise as a whole
(iv) Suppliers and creditors	(d) Better remunerations

27.2 TECHNIQUES AND TOOLS OF FINANCIAL STATEMENT ANALYSIS**Notes**

Financial statements give complete information about assets, liabilities, equity, reserves, expenses and profit and loss of an enterprise. They are not readily understandable to interested parties like creditors, shareholders, investors etc. Thus, various techniques are employed for analysing and interpreting the financial statements. Techniques of analysis of financial statements are mainly classified into three categories :

(i) Cross-sectional analysis

It is also known as inter firm comparison. This analysis helps in analysing financial characteristics of an enterprise with financial characteristics of another similar enterprise in that accounting period. For example, if company A has earned 15% profit on capital invested. This does not say whether it is adequate or not. If we analyse further and find that a similar company has earned 16% during the same period, then only we can make a conclusion that company B is better. Thus, it turns into a meaningful analysis.

(ii) Time series analysis

It is also called as intra-firm comparison. According to this method, the relationship between different items of financial statement is established, comparisons are made and results obtained. The basis of comparison may be :

- Comparison of the financial statements of different years of the same business unit.
- Comparison of financial statement of a particular year of different business units.

(iii) Cross-sectional cum time series analysis

This analysis is intended to compare the financial characteristics of two or more enterprises for a defined accounting period. It is possible to extend such a comparison over the year. This approach is most effective in analysing of financial statements.

The analysis and interpretation of financial statements is used to determine the financial position. A number of tools or methods or devices are used to study the relationship between financial statements. However, the following are the important tools which are commonly used for analysing and interpreting financial statements :



- Comparative financial statements
- Trend analysis
- Funds flow analysis
- Common size statements
- Ratio analysis
- Cash flow analysis

● **Comparative financial statements**

In brief, comparative study of financial statements is the comparison of the financial statements of the business with the previous year's financial statements. It enables identification of weakpoints and applying corrective measures. Practically, two financial statements (balance sheet and income statement) are prepared in comparative form for analysis purposes.

1. Comparative Balance Sheet

The comparative balance sheet shows the different assets and liabilities of the firm on different dates to make comparison of balances from one date to another. The comparative balance sheet has two columns for the data of original balance sheets. A third column is used to show change (increase/decrease) in figures. The fourth column may be added for giving percentages of increase or decrease. While interpreting comparative Balance sheet the interpreter is expected to study the following aspects :

- (i) Current financial position and
Liquidity position
 - (ii) Long-term financial position
 - (iii) Profitability of the concern
- (i) For studying current financial position or liquidity position of a concern one should examine the working capital in both the years. Working capital is the excess of current assets over current liabilities.
- (ii) For studying the long-term financial position of the concern, one should examine the changes in fixed assets, long-term liabilities and capital.
- (iii) The next aspect to be studied in a comparative balance sheet is the profitability of the concern. The study of increase or decrease in profit will help the interpreter to observe whether the profitability has improved or not.

After studying various assets and liabilities, an opinion should be formed about the financial position of the concern.



Illustration 1

The following is the Balance Sheets of MS Gupta for the years 2006 and 2007. Prepare the comparative Balance Sheet and study the financial position of the concern.

Notes

Balance Sheet as on 31st December

Liabilities	2006 Rs	2007 Rs	Assets	2006 Rs	2007 Rs
Equity share capital	500,000	700,000	Land and Building	270,000	1,70,000
Reserves and surplus	330,000	222,000	Plant and Machinery	400,000	600,000
Debentures	200,000	300,000	Furniture	20,000	25,000
Long term loan on mortgage	100,000	150,000	Other fixed assets	25,000	30,000
Bill Payables	50,000	45,000	Cash in hand	20,000	40,000
Sundry creditors	100,000	120,000	Bill Receivables	100,000	80,000
Other current liabilities	5000	10,000	Sundry debtors	200,000	250,000
			Stock	250,000	350,000
			Prepaid Expenses	—	2000
	1285000	1547000		1285000	1547000

Solution :

Comparative Balance Sheet of MS Gupta for the year ending December 2006 and 2007

	Year ending 31st Dec		Increase/ Decrease (Amount) (Rs)	Increase Decrease (Percentage)
	2006	2007		
Assets				
I. Current Assets				
Cash in hand	20,000	40,000	+20,000	+100
Bill Receivables	100,000	80,000	-20,000	-20
Sundry Debtors	200,000	250,000	+50,000	+25



Notes

Stock	250,000	350,000	+100000	+40
Prepaid expenses	–	2000	+2000	+100
Total current assets	570,000	722,000	+152,000	26.67
II. Fixed Assets				
Land and Building	270,000	170,000	–100000	–37.03
Plant and Machinery	400,000	600,000	+200,000	+50.00
Furniture	20,000	25,000	+5000	+25.00
Other fixed assets	25000	30,000	+5000	+20.00
Total Fixed Assets	715000	825000	+110000	+13.49
Total Assets	1285000	1547000	+262000	20.39
Liabilities & Capital :				
I. Current liabilities				
Bill Payables	50,000	45,000	–5,000	–10
Sundry creditors	100,000	120,000	+20,000	+20
Other current liabilities	5,000	10,000	+5,000	+100
Total current liabilities	155,000	175,000	+20,000	+12.9
II.				
Debentures	200,000	300,000	+100,000	+50
Long term loan on mortgage	100,000	150,000	+50000	+50
Total long term liabilities	300,000	450,000	+150,000	+50
Total liabilities	455000	625000	+170,000	+37.36
III.				
Equity share capital	500,000	7,00,000	+200,000	+40.00
Reserve & surplus	330,000	2,22,000	–108,000	–32.73
Total owned equities	8,30,000	9,22,000	+82,000	+50
Total capital & liabilities	1285000	1547000	+262,000	+20.39

Interpretation

- (i) The comparative balance sheet of the company reveals that during 2007 there has been an increase in fixed assets of 110,000 i.e. 13.49%. Long

**Notes**

term liabilities to outsiders have relatively increased by Rs 150,000 and equity share capital has increased by Rs 200000. This fact indicates that the policy of the company is to purchase fixed assets from the long-term sources of finance.

- (ii) The current assets have increased by Rs 152000 i.e. 26.67% and cash has increased by Rs 20,000. The current liabilities have increased only by Rs 20000 i.e. 12.9%. This further confirms that the company has used long-term finances even for the current assets resulting into an improvement in the liquidity position of the company.
- (iii) Reserves and surplus have decreased from Rs 330,000 to Rs 222,000 i.e. 32.73% which shows that the company has utilized reserves and surplus for the payment of dividends to shareholders either in cash or by way of bonus.
- (iv) The overall financial position of the company is satisfactory.

Comparative Income statement

The income statement provides the results of the operations of a business. This statement traditionally is known as trading and profit and loss A/c. Important components of income statement are net sales, cost of goods sold, selling expenses, office expenses etc. The figures of the above components are matched with their corresponding figures of previous years individually and changes are noted. The comparative income statement gives an idea of the progress of a business over a period of time. The changes in money value and percentage can be determined to analyse the profitability of the business. Like comparative balance sheet, income statement also has four columns. The first two columns are shown figures of various items for two years. Third and fourth columns are used to show increase or decrease in figures in absolute amount and percentages respectively.

The analysis and interpretation of income statement will involve the following :

- The increase or decrease in sales should be compared with the increase or decrease in cost of goods sold.
- To study the operating profits
- The increase or decrease in net profit is calculated that will give an idea about the overall profitability of the concern.



Notes

Illustration 2

The income statements of a concern are given for the year ending 31st December 2006 and 2007. Rearrange the figures in a comparative form and study the profitability of the concern

Details	2006 Amount (Rs)	2007 Amount (Rs)
Net Sales	785,000	900,000
Cost of goods sold	450,000	500,000
Operating expenses :		
General and administrative expenses	70,000	72,000
Selling expenses	80,000	90,000
Non-operating expenses :		
Interest paid	25,000	30,000
Income tax	70,000	80,000

Solution :

Comparative income statement for the year ended 31st Dec 2006 and 2007

Details	2006 Amount (Rs)	2007 Amount (Rs)	Increase (+) Decrease (-) (Rs)	Increase (+) Decrease (-) (Percentage)
Net sales	785,000	900,000	+115000	+14.65
Less cost of goods sold	450,000	500,000	+50000	+11.11
Gross profit	335,000	400,000	+65000	+19.40
Operating expenses :				
General & Administrative	70,000	72,000	+2000	+2.8
Selling expenses	80,000	90,000	+10000	+12.5
Total operating expenses	150,000	162,000	+12000	+8.0
Operating profit	185,000	238,000	+53000	+28.65
Less : other deductions				
Interest received	25,000	30,000	+5000	+20
Net profit before tax	160,000	208,000	+48000	+30.0
Less income tax	70,000	80,000	+10000	+14.28
Net profit after tax	90,000	128,000	+38000	+42.22



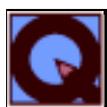
Interpretation

The comparative income statement given above shows that there has been an increase in net sales of 14.65%. The cost of goods sold has increased by 11%. This has resulted in increase of gross profit by 19.4%.

Operating expenses have increased by 8%. The increase in gross profit is sufficient to cover the operating expenses. There is also an increase in net profit after tax of Rs 38000 i.e. 42.22%.

It is concluded from the above analysis that there is sufficient progress in the performance of the company and the overall profitability of the company is good.

Notes



INTEXT QUESTIONS 27.2

Fill in the blanks with appropriate word/words :

- (i) Time series analysis is a technique of
- (ii) Comparative statement is a for financial statement analysis.
- (iii) is the comparison of the financial statement of business with the previous years financial statement.
- (iv) Comparative shows the different assets and liabilities of the firm on different dates to make comparison of balance from one date to another.
- (v) income statement gives an idea of the progress of a business over a period of time.

27.3 COMMON SIZE STATEMENTS AND TREND ANALYSIS

The common size statements (Balance Sheet and Income Statement) are shown in analytical percentages. The figures of these statements are shown as percentages of total assets, total liabilities and total sales respectively. Take the example of Balance Sheet. The total assets are taken as 100 and different assets are expressed as a percentage of the total. Similarly, various liabilities are taken as a part of total liabilities.

Common size balance sheet

A statement where balance sheet items are expressed in the ratio of each asset to total assets and the ratio of each liability is expressed in the ratio of total liabilities is called common size balance sheet.



Notes

Thus the common size statement may be prepared in the following way.

- The total assets or liabilities are taken as 100
- The individual assets are expressed as a percentage of total assets i.e. 100 and different liabilities are calculated in relation to total liabilities.

For example, if total assets are Rs10 lakhs and value of inventory is

Rs 100,000, then inventory will be 10% of total assets $\left(\frac{100000 \times 100}{1000000} \right)$

Illustration 3

The balance sheet of Mr Anoop Private (Pvt) Limited (Ltd) and Bansal Private Limited are given below :

Balance Sheet as on 31st December, 2007

Liabilities	Anoop Pvt Ltd Rs	Bansal Pvt Ltd Rs
Preference share capital	120,000	150,000
Equity share capital	140,000	410,000
Reserves and surpluses	24,000	28,000
Long-term loans	110,000	120,000
Bill Payables	7000	1000
Sundry creditors	12000	3000
Outstanding Expenses	15000	6000
Proposed Dividend	10000	90000
	438,000	808,000
Land and Building	80,000	123,000
Plant and Machinery	334,000	600,000
Temporary Investments	5000	40,000
Investment	6000	20,000
Sundry Debtors	4000	13,000
Prepaid expenses	1000	2000
Cash and Bank balance	8000	10,000
	438,000	808,000

Compare the financial position of two companies with the help of common size balance sheet.



Solution :

Common size Balance Sheet as on 31st December 2007

	Anoop Pvt Ltd		Bansal Pvt Ltd	
	Amount Rs	%	Amount Rs	%
Fixed assets				
Land and Building	80,000	18.26	123,000	15.22
Plant and machinery	334,000	76.26	600,000	74.62
Total Fixed Assets	414,000	94.52	723,000	89.48
Current asset				
Temporary investment	5000	1.14	40,000	4.95
Investment	6000	1.37	20,000	2.48
Sundry Debtors	4000	0.91	13,000	1.61
Prepaid Expenses	1000	0.23	2,000	0.25
Cash and Bank	8000	1.83	10,000	1.25
Total current assets	24000	5.48	85,000	10.54
Total Assets	438,000	100.00	808,000	100.00
Share Capital and Reserves				
Preference share capital	120,000	27.39	150,000	19.80
Equity share capital	140,000	31.96	410,000	50.74
Reserve and surpluses	24,000	5.48	28,000	3.47
Total Capital and Reserves	284,000	64.83	588,000	74.01
Long term loans	110,000	25.11	120,000	14.85
Current liabilities				
Bill Payables	7,000	1.60	1,000	0.12
Sundry creditor	12,000	2.74	3,000	0.37
Outstanding expenses	15,000	3.44	6,000	0.74
Proposed Dividend	10,000	2.28	90,000	11.15
	39,000	10.06	109,000	12.38
Total liabilities	438,000	100.00	808,000	100.00

Notes

Interpretation

- (i) An analysis of pattern of financing of both the companies shows that Bansal Ltd is more traditionally financed as compared to Anoop Ltd. The former company has depended more on its own funds as is shown



Notes

by balance sheet. Out of total investment, 74.01% of the funds are proprietary funds and outsiders funds account only for 25.9%. In Anoop Ltd proprietors' fund are 64.83% while the share of outsiders funds is 34.17% which shows that this company has depended more upon outsiders funds.

- (ii) Both the companies are suffering from shortage of working capital. The percentage of current liabilities is more than the percentage of current assets in both the companies.
- (iii) A close look at the balance sheet shows that investments in fixed assets have been from working capital in both the companies. In Anoop Ltd. fixed assets account for 94.52% of total assets while in Bansal Ltd fixed assets account for 89.48%.
- (iv) Thus, both the companies face working capital problem and immediate steps should be taken to issue more capital or raise long term loans to improve working capital position.

Common size income statement

The items in income statement can be shown as percentages of sales to show the relations of each item to sales.

Illustration 4

Following are the income statements of a company for the year ending 31st December 2006 and 2007

	2006 Rs	2007 Rs
Sales	500,000	700,000
Miscellaneous income	20,000	15,000
	520,000	715,000
Expenses		
Cost of sales	330,000	510,000
Office expenses	20,000	30,000
Interest	25,000	30,000
Selling expenses	30,000	40,000
	405,000	610,000
Net profit	115,000	105,000
	520,000	715,000



Solution :

Common size Income Statement for the year ending 31st December 2006 and 2007.

	2006		2007	
	Amount Rs	%	Amount Rs	%
Sales	500,000	100.00	700,000	100.00
Less : Cost of sales	330,000	66.00	510,000	72.86
Gross profit	170,000	34.00	190,000	27.14
Operating expenses				
Office expenses	20,000	4.00	30,000	4.29
Selling expenses	30,000	6.00	40,000	5.71
Total operating expenses	50,000	10.00	70,000	10.00
Operating profit	120,000	24.00	120,000	17.14
Miscellaneous income	20,000	4.00	15,000	2.14
Total income	140,000	28.00	135,000	19.28
Less : Non operating expenses	25,000	5.00	30,000	4.28
Net profit	115,000	23.00	105,000	15.00

Notes

Interpretation

- The sale and gross profit have increased in absolute figures in 2007 as compared to 2006. But the percentage of gross profit to sales has gone down in 2007.
- The increase in cost of sales as a percentage of sales has brought the profitability from 34% to 27.14%.
- Operating expenses have remained the same in both the years.
- Net profit have decreased both in absolute figures and as a percentage in 2007 as compared to 2006.

Trend percentage analysis (TPA)

The trend analysis is a technique of studying several financial statements over a series of years. In this analysis the trend percentages are calculated for each item by taking the figure of that item for the base year taken as 100. Generally the first year is taken as a base year. The analyst is able to see the trend of figures, whether moving upward or downward.



Notes

In brief, the procedure for calculating trends is as :

- One year is taken as a base year which is generally is the first year or last year.
- Trend percentages are calculated in relation to base year

Illustration 5

From the following data relating to Ms Rekha Gupta for the year 2004 to 2007, calculate trend percentages (taking 2004 as base year)

	2004	2005	2006	2007
Net sales	200,000	190,000	249,000	260,000
Less : Cost of goods sold	120,000	117,800	139,200	145,600
Gross profit	80,000	72,000	100,800	114,400
Less : Expenses	20,000	19,400	22,000	24,000
Net profit	60,000	52,800	78,800	90,400

Solution :

Trend percentages

	2004	2005	2006	2007
Net Sales	100	95.0	124.5	130.0
Less : Cost of goods sold	100	98.2	116.0	121.3
Gross profit	100	90.3	126.0	143.0
Less : Expenses	100	97.0	110.0	120.0
Net profit	100	88.0	131.3	150.6

Interpretation

On the whole, 2005 was a bad year but the recovery was made during 2006. In this year there is increase in sales as well as profit.

The figure of 2005 when compared with 2004 reveal that the sales have come down by 5%. However, the cost of goods sold and the expenses have decreased only by 1.8% and 3% respectively. This has resulted in decrease in Net profit by 12%.

The position was recovered in 2006 and not only the decline but also there is positive growth in both 2006 and 2007. Moreover, the increase in profit by 31.3% (2006) and 50.6% (2007) is much more than the increased in sales by 20% and 30% respectively. This shows major portion of cost of goods sold and expenses is of fixed nature.



INTEXT QUESTIONS 27.3

Fill in the blanks with appropriate word/words

- (i) statement shows analytical percentage. (comparative, common size)
- (ii) balance sheet items are expressed in the ratio of each asset to total assets and ratio of each liability to total liability. (comparative, common size)
- (iii) analysis is a technique of studying several financial statements over a series of years. (Trend, time series)
- (iv) Trend percentage is calculated on the basis of year. (current, base)



WHAT YOU HAVE LEARNT

- Analysis of financial statements means establishing meaningful, relationship between various items of the two financial statements i.e. income statement and position statement.
- The main parties interested in analysis of financial statement are
 - (i) Investor
 - (ii) Management
 - (iii) Trade unions
 - (iv) Lenders
 - (v) Trade creditors
 - (vi) Employees
 - (vii) The authorities
 - (viii) Government
 - (ix) Stock exchange
 - (x) Researchers
- The major techniques of financial statement analysis are
 - (i) Cross-sectional analysis
 - (ii) Time series analysis
 - (iii) Cross-sectional and time series analysis.
- The major tools for financial statement analysis are :
 - (i) comparative statement
 - (ii) Common size statement
 - (iii) Trend analysis
 - (iv) Ratio analysis
 - (v) Funds flow analysis
 - (vi) cash flow analysis



Notes



Notes

- Comparative study of financial statements is the comparison of the financial statements of the business with the previous years financial statements.
- Comparative Balance Sheet shows the different assets and liabilities of the firm on different dates to make comparison of balances from the date to another.
- Common size balance sheet items are expressed in the ratio of each asset to total assets and the ratio of each liability is expressed in the ratio of total liabilities.



TERMINAL QUESTIONS

1. State any four tools which are commonly used for analysing and interpreting financial statements.
2. What are the main techniques of financial statement analysis?
3. Briefly explain the parties interested in analysis of financial statements.
4. Write a brief notes on comparative statement, common size statement and trend analysis.
5. The following are the Balance Sheets of Ms Shivani Ltd for the year ending 31st December 2006 and 2007.

Liabilities	2006 Rs	2007 Rs	Assets	2006 Rs	2007 Rs
Equity share capital	200000	330000	Fixed Assets less depreciation	340000	450000
Preference share capital	200000	250000	Stock	40000	50000
Reserve	20000	30000	Debtors	100000	125000
Profit and loss A/c	15000	20000	Bills receivable	20000	60000
Bank overdraft	50000	50000	Prepaid expenses	10000	12000
Creditors	40000	50000	Cash in hand	40000	53000
Provision for taxation	20000	25000	Cash at Bank	10000	30000
Proposed dividend	15000	25000			
	560000	780000		560000	780000

Prepare a comparative balance sheet of the company and study its financial position.



6. The following are the Balance Sheets of Ms Anjani Anand for the year 2006 and 2007. Discuss the financial position of the company in two years with the help of common size Balance Sheet.

Liabilities	2006 Rs	2007 Rs	Assets	2006 Rs	2007 Rs
Share capital	625000	675000	Goodwill	80000	50000
Reserve surplus	352000	352000	Plant	526000	513000
Surplus	175535	59070	Patent	30000	26000
6% debentures	225000	200000	Investment	205000	125000
Accrued interest on debenture	3750	3000	Cash at bank	170650	287000
Sundry creditors	112000	143000	Prepaid expenses	3200	4600
Dividend payable	—	25000	Debtors	138760	153000
Taxation provision	8000	48000	Stock	235800	287670
			Debenture discount	6875	5000
	1401285	1405070		1401285	1405070

Notes



ANSWERS TO INTEXT QUESTIONS

Intext Questions 27.1

- I. (i) income statement or profit and Loss A/c, position statement or balance sheet.
 (ii) analysis and interpretation
 (iii) financial statement
 (iv) decision making
- II. (i) (c) (ii) (d) (iii) (b) (iv) (a)

Intext Questions 27.2

- (i) financial statement analysis (ii) tool
 (iii) comparative statement (iv) balance sheet
 (v) comparative

Intext Questions 27.3

- (i) Comparative (ii) Comparative
 (iii) Trend (iv) base



ACCOUNTING RATIOS – I

In the previous lesson, you have learnt the relationship between various items of the financial statements. You have also learnt various tools of analysis of financial statements such as comparative statements, common size statement, and trend analysis. However, like the above tools another important tool which is very useful to examine the financial statements is ratio analysis. Accounting ratios are calculated from the financial statements to arrive at meaningful conclusions pertaining to liquidity, profitability, and solvency. Accounting ratio can be of different types. In this lesson, we will learn about different types of accounting ratios and their method of calculation.



OBJECTIVES

After studying this lesson, you will be able to :

- state the meaning of accounting ratio;
- classify the accounting ratios;
- explain various types of accounting ratios on the basis of liquidity and turnover.

28.1 MEANING AND ITS CLASSIFICATION

The ratio is an arithmetical expression ie. relationship of one number to another. It may be defined as an indicated quotient of the mathematical expression. It is expressed as a proportion or a fraction or in percentage or in terms of number of times. A financial ratio is the relationship between two accounting figures expressed mathematically. Suppose there are two accounting figures of a concern are sales Rs 100000 and profits Rs 15000. The ratio between these two figures will be

Accounting Ratios - I

$$\frac{15000}{100000} = 3 : 20 \text{ or } 15\%$$

Ratios provide clues to the financial position of a concern. These are the indicators of financial strength, soundness, position or weakness of an enterprise. One can draw conclusions about the financial position of a concern with the help of accounting ratios.

Suppose one shopkeeper (X) earns a profit of Rs 1000 and another (Y) earns Rs 20000 which one is more efficient? We may say that the one who earns a higher profit is running his shop better. In fact to answer the questions, we must ask, how much is the capital employed by each shopkeeper? Let, X employ Rs 100000 and Y Rs 400000. We can work out the percentage of profit earned by each to the capital employed. Thus,

X

$$Y \quad \frac{\text{Rs } 20000}{\text{Rs } 400000} \times 100 = 5\%$$

These figures show that for every Rs100 of capital X earns $\frac{\text{Rs } 10000}{\text{Rs } 100000} \times 100 = 1\%$ and Y earns Rs 5. Y is obviously making a better use of the funds employed by him. He must be treated as more efficient of the two. The above example shows that absolute figures by themselves do not communicate the meaningful information.

Broadly accounting ratios can be grouped into the following categories :

- (a) Liquidity ratios (b) Activity ratios (c) Solvency ratios
- (c) profitability ratios (e) Leverage ratio

Liquidity Ratios

The term liquidity refers to the ability of the company to meet its current liabilities. Liquidity ratios assess capacity of the firm to repay its short term liabilities. Thus, liquidity ratios measure the firms' ability to fulfil short term commitments out of its liquid assets. The important liquidity ratios are

- (i) Current ratio
- (ii) Quick ratio

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Analysis of Financial Statements



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(i) Current ratio

Current ratio is a ratio between current assets and current liabilities of a firm for a particular period. This ratio establishes a relationship between current assets and current liabilities. The objective of computing this ratio is to measure the ability of the firm to meet its short term liability. It compares the current assets and current liabilities of the firm. This ratio is calculated as under :

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

Current Assets are those assets which can be converted into cash within a short period ie. not exceeding one year. It includes the following :

Cash in hand, Cash at Bank, Bill receivables, Short term investment, Sundry debtors, Stock, Prepaid expenses

Current liabilities are those liabilities which are expected to be paid within a year. It includes the following :

Bill payables, Sundry creditors, Bank overdraft, Provision for tax, Outstanding expenses

Significance

It indicates the amount of current assets available for repayment of current liabilities. Higher the ratio, the greater is the short term solvency of a firm and vice a versa. However, a very high ratio or very low ratio is a matter of concern. If the ratio is very high it means the current assets are lying idle. Very low ratio means the short term solvency of the firm is not good. Thus, the ideal current ratio of a company is 2 : 1 ie. to repay current liabilities, there should be twice current assets.

Illustration 1

Calculate current ratio from the following :

	Rs.
Sundry debtors	4,00,000
Stock	160,000
Marketable securities	80,000
Cash	120,000
Prepaid expenses	40,000
Bill payables	80,000
Sundry creditors	160,000
Debentures	200,000
Outstanding Expenses	160,000

Accounting Ratios - I

Solution.

Current Ratio =

$$\begin{aligned}\text{Current Assets} &= \text{Sundry debtors} + \text{Stock} + \text{Marketable securities} + \\ &\quad \text{Cash} + \text{Prepaid expenses} \\ &= \text{Rs } (400,000 + 160,000 + 80,000 + 120,000 + 40,000) \\ &= \text{Rs } 800,000\end{aligned}$$

$$\begin{aligned}\text{Current liabilities} &= \text{Bill Payables} + \text{Sundry creditors} + \text{Outstanding} \\ &\quad \text{Expenses} \\ &= \text{Rs } (80,000 + 160,000 + 160,000) = \text{Rs } 400,000\end{aligned}$$

Current ratio =

(ii) Quick ratio

Quick ratio is also known as Acid test or Liquid ratio. It is another ratio to test the liability of the concern. This ratio establishes a relationship between quick assets and current liabilities. This ratio measures the ability of the firm to pay its current liabilities. The main purpose of this ratio is to measure the ability of the firm to pay its current liabilities. For the purpose of calculating this ratio, stock and prepaid expenses are not taken into account as these may not be converted into cash in a very short period. This ratio is calculated as under :

$$\text{Liquid ratio} = \frac{\text{Liquid or quick assets}}{\text{Current liabilities}}$$

where, liquid assets = current assets – (stock + prepaid expenses)

Significance

Quick ratio is a measure of the instant debt paying capacity of the business enterprise. It is a measure of the extent to which liquid resources are immediately available to meet current obligations. A quick ratio of 1 : 1 is considered good/favourable for a company.

Illustration 2

Taking the same information as given in illustrated 1 calculate the quick ratio.

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Solution :

Quick ratio =

$$\begin{aligned} \text{Quick Assets} &= \text{currents assets} - (\text{Stock} + \text{Prepaid expenses}) \\ &= \text{Rs } 800,000 - (\text{Rs } 160,000 + \text{Rs } 40,000) = \text{Rs } 600,000 \end{aligned}$$

Current liabilities = Rs 600,000

$$\text{Quick Ratio} = \frac{\text{Rs } 600,000}{\text{Rs } 600,000} = 1 : 1$$

Illustration 3

Calculate liquidity ratios from the following information :

Total current assets	Rs 90,000
Stock (included in current assets)	Rs 30,000
Prepaid expenses	Rs 3,000
Current liabilities	Rs 60,000

Solution :

$$\frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{\text{Rs } 90,000}{\text{Rs } 60,000} = 1.5 : 1$$

A Current ratio =

$$= 3 : 2 \text{ or } 1.5 : 1$$

B. Liquid ratio = $\frac{\text{Current Assets} - (\text{Stock} + \text{Prepaid Expenses})}{\text{Current liabilities}}$

=

Illustration 4

The balance sheet of BCD Ltd. shows the following figures :

Share capital	Rs 152,000
Cash in hand and at Bank	Rs 30,000
Fixed Assets	Rs 113,000
Creditors	Rs 20,000
5% Debentures	Rs 24,000

Accounting Ratios - I

Bill Payables	Rs	4,000
Debtors	Rs	18,000
Stock	Rs	52,000
General reserve	Rs	8,000
Profit and Loss A/c	Rs	5,000

Calculate (i) current ratio and (ii) liquid ratio.

Solution :

$$(i) \quad \text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned} \text{where Current assets} &= \text{Cash in hand and at bank} + \text{Debtors} + \text{Stock} \\ &= \text{Rs } 30,000 + \text{Rs } 18,000 + \text{Rs } 52,000 \\ &= \text{Rs } 1,00,000 \end{aligned}$$

$$\text{Current liabilities} = \text{Creditors} + \text{Bill Payable}$$

$$= \text{Rs } 20,000 + \text{Rs } 4,000$$

$$= 24,000$$

$$\text{Rs } 48,000$$

$$\text{Rs } 24,000$$

$$= \quad = 426 : 1$$

$$(ii) \quad \text{Quick ratio} = \frac{\text{Quick Assets}}{\text{Current liabilities}}$$

$$\text{where Quick assets} = \text{current Assets} - \text{Stock}$$

$$= \text{Rs } 1,00,000 - \text{Rs } 52,000$$

$$= \text{Rs } 48,000$$

$$\text{Quick ratio} = \quad = 2 : 1$$

Illustration 5

From the following information, if Rs 1000 is paid to creditors what will be the effect (increase or decrease or no change) on current ratio, if before payment, balances are : Cash Rs 15000, Creditors Rs 7,500?

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Solution :

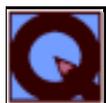
$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

Before payment = = 2 : 1

After payment = Rs1000 to creditors

$$\begin{aligned} \text{Current Ratio} &= \frac{\text{Cash}}{\text{Creditors}} = \frac{\text{Rs } 15,000 - \text{Rs } 1000}{\text{Rs } 7,500 - \text{Rs } 1000} \\ &= \frac{\text{Rs } 14,000}{\text{Rs } 6,500} = 215 : 1 \end{aligned}$$

Hence, it increases the current ratio from 2 : 1 to 215 : 1



INTEXT QUESTIONS 28.1

I. Select the current assets from the list given below

- | | |
|-----------------------|---|
| Cash at bank | Debtors |
| Stock | Cash Rs 15,000 |
| Short term investment | Prepaid expenses |
| Building | Creditors Rs 7,500 |
| Furniture | Goodwill |
| Bill Receivables | Cash in hand |

II. Fill in the blanks with suitable words or figures :

- (i) Current ratio = $\frac{\text{_____}}{\text{Current liabilities}}$
- (ii) The ideal current ratio is —
- (iii) The ideal liquid ratio is —
- (iv) Liquid assets = — – (Stock + prepaid expenses)

28.2 ACTIVITY OR TURNOVER RATIOS

Activity ratios measure the efficiency or effectiveness with which a firm manages its resources. These ratios are also called turnover ratios because they indicate the speed at which assets are converted or turned over in sales.

Accounting Ratios - I

These ratios are expressed as 'times' and should always be more than one. Some of the important activity ratios are :

- (i) Stock turnover ratio
- (ii) Debtors turnover ratio
- (iii) Creditors turnover ratio
- (iv) Working capital turnover ratio

(i) Stock turnover ratio

Stock turnover ratio is a ratio between cost of goods sold and the average stock or inventory. Every firm has to maintain a certain level of inventory of finished goods. But the level of inventory should neither be too high nor too low. It evaluates the efficiency with which a firm is able to manage its inventory. This ratio establishes relationship between cost of goods sold and average stock.

Stock Turnover Ratio =

$$\text{Cost of goods sold} = \frac{\text{Opening stock} + \text{Purchases} + \text{Direct expenses} - \text{Closing Stock}}{\text{Average Stock}} \times \text{Days Sold year}$$

Inventory Turnover ratio (times)

OR Cost of goods sold = Sales – Gross Profit

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

- (i) If cost of goods sold is not given, the ratio is calculated from the sales.
- (ii) If only closing stock is given, then that may be treated as average stock.

Inventory/stock conversion period

It may also be of interest to see average time taken for clearing the stocks. This can be possible by calculating inventory conversion period. This period is calculated by dividing the number of days by inventory turnover.

Inventory conversion period =

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Significance

The ratio signifies the number of times on an average the inventory or stock is disposed off during the period. The high ratio indicates efficiency and the low ratio indicates inefficiency of stock management.

Illustration 6

Calculate stock turnover ratio from the following information:

Opening stock	Rs	45000
Closing stock	Rs	55000
Purchases	Rs	160000

Solution :

$$\text{Stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

$$= \frac{\text{Rs } (45000 + 55000)}{2}$$

$$= \text{Rs } 50000$$

Average stock =

= Rs 50000

$$\begin{aligned} \text{Cost of goods sold} &= \text{Opening stock} + \text{Purchases} - \text{closing stock} \\ &= \text{Rs } 45000 + 160000 - 55000 \\ &= \text{Rs } 150000 \end{aligned}$$

$$\text{Stock Turnover Ratio} = \frac{150000}{50000} = 3 \text{ times}$$

Illustration 7

Opening stock	Rs	19,000
Closing stock	Rs	21,000
Sales	Rs	2,00,000

Gross Profit 25% of sale. Calculate stock turnover ratio.

Accounting Ratios - I

Solution :

$$\begin{aligned}\text{Cost of good sold} &= \text{Sales} - \text{Gross profit} \\ &= \text{Rs } 2,00,000 - 25\% \text{ of Rs } 2,00,000 \\ &= \text{Rs } (2,00,000 - 50,000) \\ &= \text{Rs } 1,50,000\end{aligned}$$

$$\text{Average stock} =$$

=

$$= 20,000$$

$$\text{Stock turn over ratio} =$$

$$= \frac{\text{Rs } 1,50,000}{\text{Rs } 20,000}$$

$$= 7.5 \text{ times}$$

Illustration 8

Annual sales	Rs 4,00,000
Gross profit	20% on sales
Opening stock	Rs 38,500
Closing stock	Rs 41,500

Calculate stock turnover ratio and inventory conversion period for 2006. Assume 360 days in the year.

Solution :

$$\text{Stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

$$\begin{aligned}\text{Costs of goods sold} &= \text{Sales} - \text{Gross profit} \\ &= \text{Rs } 4,00,000 - (20\% \text{ on Rs } 4,00,000) \\ &= \text{Rs } 4,00,000 - \text{Rs } 80,000 \\ &= \text{Rs } 320,000\end{aligned}$$

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$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

=

$$= \text{Rs } 40,000$$

$$\text{Stock turnover ratio} = \frac{\text{Rs } 320,000}{\text{Rs } 40,000}$$

$$= 8 \text{ times}$$

Inventory conversion period =

$$= \frac{360}{8} = 45 \text{ days}$$

Illustration 9

From the following information, calculate opening stock and closing stock:

$$\text{Sales during the year} = \text{Rs } 2,00,000$$

$$\text{Gross profit on sales} = 50\%$$

$$\text{Stock turnover ratio} = 4 \text{ times}$$

If closing stock was Rs 10,000 more than the opening stock what will be the amount for the opening stock and closing stock?

Solution :

$$\text{Sales} = \text{Rs } 2,00,000 \text{ (given)}$$

$$\text{Gross profit on sales} = 50\% \text{ (given)}$$

$$\text{Gross profit} =$$

$$\text{Cost of goods sold} = \text{Sales} - \text{Gross profit}$$

$$= \text{Rs } 2,00,000 - \text{Rs } 1,00,000$$

$$= \text{Rs } 1,00,000$$

Accounting Ratios - I

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

$$4 = \frac{\text{Rs 1,00,000}}{\text{Average stock}}$$

∴ By cross multiplying

$$\text{Average stock} = \frac{\text{Rs 1,00,000}}{4} = \text{Rs 25,000}$$

$$\text{Average stock} =$$

Let opening stock be x

$$\text{Closing stock} = x + 10,000$$

$$\text{Average stock} = \quad = 25,000 \text{ (given)}$$

$$\text{or } x + x + 10,000 = 50,000$$

$$\text{or } 2x = 50,000 - 10,000$$

$$\text{or } 2x = 40,000$$

$$\text{or } x = 20,000$$

$$\text{Hence opening stock} = \text{Rs 20,000}$$

$$\begin{aligned} \text{Closing stock} &= \text{Rs 20,000} + \text{Rs 10,000} = 5 \text{ times} \\ &= \text{Rs 30,000} \end{aligned}$$



INTEXT QUESTION 28.2

Fill in the blank with suitable word/words :

(i) Inventory turnover ratio is divided by average inventory.

(ii) Average inventory =

(iii) Stock turnover ratio =

$$(iv) \text{ Stock turnover ratio} = \frac{30000}{10000} =$$

$$(v) \text{ —} = \frac{\text{Days in a year}}{\text{Inventory turnover ratio}}$$

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28.3 ACTIVITY OR TURNOVER RATIOS

Debtors Turnover ratio

This ratio establishes a relationship between net credit sales and average account receivables i.e. average trade debtors and bill receivables. The objective of computing this ratio is to determine the efficiency with which the trade debtors are managed. This ratio is also known as Ratio of Net Sales to average receivables. It is calculated as under

$$\text{Debtors Turnover Ratio} = \frac{\text{Net credit annual sales}}{\text{Average debtors}}$$

In case, figure of net credit sale is not available then it is calculated as if sales are credit sales :

$$\text{Average debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

Note : If opening debtors are not available then closing debtors and bills receivable are taken as average debtors.

Debt collection period $\frac{\text{Net credit sales for Debtors}}{\text{Average of credits in the period}}$

This period refers to an average period for which the credit sales remain unpaid and measures the quality of debtors. Quality of debtors means payment made by debtors within the permissible credit period.

It indicates the rapidity at which the money is collected from debtors. This period may be calculated as under :

$$\begin{aligned} \text{Debt collection period} &= \\ \text{or} &= \frac{12 \text{ months} / 52 \text{ weeks} / 365 \text{ days}}{\text{Debtors turnover ratio}} \end{aligned}$$

Note : Average credit sales per day

=

Significance

Debtors turnover ratio is an indication of the speed with which a company collects its debts. The higher the ratio, the better it is because it indicates

Accounting Ratios - I

that debts are being collected quickly. In general, a high ratio indicates the shorter collection period which implies prompt payment by debtor and a low ratio indicates a longer collection period which implies delayed payment for debtors.

Illustration 10

Find out (a) debtors turnover and (b) average collection period from the following information for one year ended 31st March 2006.

	31st March 2006
Annual credit sales	500000
Debtors in the beginning	80000
Debtors at the end	100000
Debt to be taken for the year	360 days

Solution

$$\text{Average debtors} = \frac{\text{Opening debtors} + \text{Closing debtors}}{2} = \frac{80000 + 100000}{2} = \text{Rs } 90000$$
$$\text{Debtors turnover} = \frac{\text{Credit annual sales}}{\text{Average debtors}} = \frac{500000}{90000} = 5.56 \text{ times}$$

Debtors turnover =

$$\text{Average debtors} = \frac{80000 + 100000}{2} = \text{Rs } 90000$$

(a) Debtor turnover ratio = $\frac{500000}{90000} = 5.56 \text{ times}$

(b) Average collection period

$$= \frac{\text{No of working days}}{\text{Debtors turnover}}$$

$$= \frac{360}{5.56} = 64.7 \text{ days (approximately)}$$

Creditors Turnover Ratio

It is a ratio between net credit purchases and average account payables (ie creditors and Bill payables). In the course of business operations, a firm

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has to make credit purchases. Thus a supplier of goods will be interested in finding out how much time the firm is likely to take in repaying the trade creditors. This ratio helps in finding out the exact time a firm is likely to take in repaying to its trade creditors. This ratio establishes a relationship between credit purchases and average trade creditors and bill payables and is calculated as under

$$\text{Creditors turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average trade creditors and / or average bill payables}}$$

$$\text{Average creditors} = \frac{\text{Creditors in the beginning} + \text{Creditors at the end}}{2}$$

=

Significance

Creditors turnover ratio helps in judging the efficiency in getting the benefit of credit purchases offered by suppliers of goods. High ratio indicates the shorter payment period and a low ratio indicates a longer payment period.

Debt payment period

This period shows an average period for which the credit purchases remain unpaid or the average credit period actually availed of :

$$\text{Debt payment period} = \frac{12 \text{ months or } 52 \text{ weeks or } 365 \text{ days}}{\text{Creditors turnover ratio}}$$

Note : Average net credit purchases per day in the year

=

Illustration 11

Calculate creditors turnover ratio and debt payment period from the following information

Accounting Ratios - I

Cash purchases	1,00,000	Total purchases	4,07,000
Opening sundry creditors	25,000	Closing sundry creditors	50,000
Closing bill payables	25,000	Opening bill payables	20,000
Purchase returns	7,000		

Solution :

$$\text{Creditors turnover ratio} = \frac{\text{₹ Credit Purchases}}{\text{Average trade creditors}}$$

$$\begin{aligned}\text{₹ purchases} &= \text{Total purchases} - \text{Purchase returns} \\ &= \text{Rs } 407000 - \text{Rs } 7000 = \text{Rs } 400000\end{aligned}$$

$$\begin{aligned}\text{₹ credit purchases} &= \text{₹ purchases} - \text{cash purchases} \\ &= \text{Rs } 4,00,000 - \text{Rs } 1,00,000 \\ &= \text{Rs } 3,00,000\end{aligned}$$

$$\begin{aligned}\text{Average creditors} &= \frac{\text{Opening creditors} + \text{Opening bills payable} \\ &\quad + \text{Closing creditors} + \text{Closing Bill payable}}{2} \\ &= \frac{\text{Rs } 51,000 + \text{Rs } 20,000 + \text{Rs } 50,000 \\ &\quad + \text{Rs } 25,000}{2} \\ &= \text{Rs } 60,000\end{aligned}$$

$$\text{Creditors Turnover Ratio} = 5 \text{ times}$$

$$\begin{aligned}\text{Debt payment ratio} &= \frac{365}{\text{Creditors turnover ratio}} \\ &= 73 \text{ days}\end{aligned}$$

Illustration 12

Calculate creditors turnover ratio and average age of payables

Credit purchases during the year	Rs 14,40,000
Closing creditors	Rs 1,44,000
Closing Bill payables	Rs 96,000

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Solution :

Creditors Turnover Ratio =

$$= \frac{\text{Rs } 14,40,000}{\text{Rs } 1,44,000 + \text{Rs } 96,000}$$

$$= \frac{\text{Rs } 14,40,000}{\text{Rs } 2,40,000} = 6 \text{ times}$$

$$\text{Average age of payable} = \frac{\text{Months in a year}}{\text{Creditors turnover ratio}} =$$

$$= 2 \text{ months}$$

Note : Where opening creditors and opening bill payables are not given then closing creditors and bill payables are taken as average account payables.

Working Capital Turnover Ratio

Working capital of a concern is directly related to sales. The current assets like debtors, bill receivables, cash, stock etc, change with the increase or decrease in sales.

$$\text{Working capital} = \frac{12 \times \text{Credit sales}}{\text{Average working payable}} = \frac{\text{Current Assets} - \text{Current Liabilities}}{\text{Average working payable}}$$

Working capital turnover ratio indicates the speed at which the working capital is utilised for business operations. It is the velocity of working capital ratio that indicates the number of times the working capital is turned over in the course of a year. This ratio measures the efficiency at which the working capital is being used by a firm. A higher ratio indicates efficient utilisation of working capital and a low ratio indicates the working capital is not properly utilised.

This ratio can be calculated as

$$\text{Working Capital Turnover Ratio} =$$

$$\text{Average working capital} = \frac{\text{Opening working capital} + \text{Closing working capital}}{2}$$

If the figure of cost of sales is not given, then the figure of sales can be used. On the other hand if opening working capital is not discussed then working capital at the year end will be used.

Accounting Ratios - I

Illustration 13

Find out working capital turnover ratio for the year 2006.

Cash	10,000
Bills receivable	5,000
Sundry debtors	25,000
Stock	20,000
Sundry creditors	30,000
Cost of sales	1,50,000

Solution :

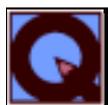
Working capital turnover ratio =

$$\begin{aligned}\text{Current assets} &= \text{Rs } 10,000 + 5,000 + 25,000 + 20,000 \\ &= \text{Rs } 60,000\end{aligned}$$

$$\text{Current liabilities} = \text{Rs } 30,000$$

$$\begin{aligned}\text{Working capital} &= \text{CA} - \text{CL} = \frac{\text{Rs } 60,000 - \text{Rs } 30,000}{\text{Working capital}} \\ &= \text{Rs } 30,000\end{aligned}$$

$$\text{So, working capital turnover ratio} = \frac{\text{Rs } 1,50,000}{\text{Rs } 30,000} = 5 \text{ times}$$



INTEXT QUESTIONS 28.3

I. Fill in the blanks with suitable word or words.

(i) Low debtors turnover ratio indicates collection.

(ii) Average debt collection period = $\frac{12 \text{ months}}{?}$

(iii) Debtors turnover ratio =

(iv) ? = $\frac{\text{Credit purchases}}{\text{Average creditors}}$

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$$(v) \text{ Debtors turnover ratio} = \frac{?}{50,000} = 4$$

$$(vi) \text{ Debtors turnover ratio} = \frac{1,50,000}{?} = 3$$

$$(vii) \text{ Creditors turnover ratio} = \frac{75,000}{15000} = ?$$

$$(viii) \text{ Creditors turnover ratio} = \frac{1,00,000}{?} = 4$$

II. Fill in the blank with suitable word or words :

(i) Working capital = – current liabilities

(ii) = $\frac{\text{Cost of sales}}{\text{Average working capital}}$

(iii) Average working capital =

$$\frac{\text{Opening working capital} + \text{Closing working capital}}{?}$$

(iv) Working capital turnover ratio = $\frac{\text{Cost of Sales}}{\text{Current liabilities}}$



WHAT YOU HAVE LEARNT

- The term ratio means an arithmetical relationship between two numbers.
- Liquidity ratio assesses the capacity of the firm to repay short term liability. It measures the ability to fulfil short term commitments out of liquid assets.
- The important liquidity ratios are :
 - (i) Current ratio : It measures the short term solvency of a business

Current ratio =
 - (ii) Liquid ratio : It measures the ability of the firm to pay current liabilities immediately

Liquid ratio =

Liquid assets = current assets – (stock + prepaid expenses)

Accounting Ratios - I

- Activity or turnover ratios
- The important activity ratios are
 - (i) Stock turnover ratio : It measures the efficiency with which the stock is managed.

$$\text{Stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

- (ii) Debtors turnover ratio : It is calculated to indicate the efficiency of the company to collect its debts.

$$\text{Debtors turnover ratio} = \frac{\text{Net credit sales}}{\text{Average account receivables}}$$

- (iii) Creditors turnover ratio : It indicates the efficiency with which suppliers are paid.

$$\text{Creditors turnover ratio} = \frac{\text{Net credit purchases}}{\text{Average trade creditors}}$$

- (iv) Debt collection period indicates the average time taken by the debtors to pay.

$$\text{Debt collection period} = \frac{\text{Number of days in a year}}{\text{Debtors turnover ratio}}$$

- (v) Debt payment period indicates the average time taken by the firm to settle the accounts payables

$$\text{Debt payment period} =$$



TERMINAL QUESTIONS

1. Explain the significance of debtors turnover ratio and liquid ratio.
2. Explain the meaning and significance of the following ratios.
 - (a) Current ratio
 - (b) Creditors turnover ratio
 - (c) Stock turnover ratio

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3. From the following compute current ratio and quick ratio :

	Rs
Fixed Assets	100000
Stock	30000
Debtors	20,000
Cash	40,000
Prepaid expenses	10,000
Creditors	30,000
Reserves	10,000

4. Balance Sheet of Mr X and Mr. Y as on 31st December 2006 is

Liabilities	Amount	Assets	Amount
	Rs		Rs
Equity share capital	100000	Cash in hand	20000
7% debentures	100000	Cash at Bank	20,000
Bank overdraft	40,000	Bill receivables	100000
Creditors	60000	Investment	10000
Profit and Loss A/c	20000	Debtors	50000
General reserve	30000	Stock	150000
	350000		350000

Sales during the year 2006 were Rs 490000. Calculate stock turnover ratio.

5. Given : Current ratio 2 : 5

Liquidity ratio 1 : 5

working capital Rs60000

Calculate (a) current liabilities (b) current assets (c) Liquid assets (d) stock

6. XYZ Ltd. supplies you following information regarding the year ending 31st, December 2006.

Cash	Rs 80000
Credit sales	Rs 200000
Return inward	Rs 10000
Opening stock	Rs 25000
Closing stock	Rs 30000

Gross profit ratio is 25%. Find out stock turnover ratio.



ANSWERS TO INTEXT QUESTIONS

Intext Questions 28.1

- I. Cash at Bank, stock, short term investment, Bills receivable, debtors, prepaid expenses, cash in hand
- II. (i) current assets (ii) 2 : 1
(iii) 1 : 1 (iv) current assets

Intext Questions 28.2

- (i) Cost of goods sold (ii) Closing inventory
(iii) 2000 (iv) 3 times
(v) Inventory conversion period

Intext Questions 28.3

- I. (i) Delay in collection of debt (ii) Debtors turnover ratio
(iii) ₹ credit annual sale (iv) creditors turnover ratio
(v) 200000 (vi) 50000
(vii) 5 (viii) 25000
- II. (i) Current assets (ii) Working capital turnover ratio
(iii) 2 (iv) Average working capital

Answers to Terminal Questions

3. Current ratio 3 : 1, Quick ratio 167 : 1
4. 327 times
5. (a) 40,000 (b) 100000 (c) 6000 (d) 40000
6. 736 times



Do you know?

What are HIV and AIDS?

HIV is :

**Human
Immunodeficiency
Virus**

AIDS is :

**Acquired
Immunodeficiency
Syndrome**

HIV weakens the body's defence or immune system. AIDS is the late stage of HIV infection, when the immune system of the infected person has been completely destroyed, and when the person contracts a variety of diseases and infections. AIDS is thus not one particular isolated disease but a syndrome, which means that it shows a variety of symptoms related to different disorders and diseases. AIDS may develop as early as 6 months after HIV infection in a severe case, or as late as 8-10 years after infection.

Notes





ACCOUNTING RATIOS – II

You have learnt in the previous lesson that accounting ratios can be classified into five major groups viz. liquidity ratios, activity ratios, solvency ratios, profitability ratios and leverage ratio. You have already learnt the meaning, computations and significance of liquidity and activity ratios. In this lesson, you will learn about the various solvency ratios, profitability ratios and leverage ratio and their significance.



OBJECTIVES

After studying this lesson you will be able to :

- explain various types of accounting ratios i.e. solvency, profitability and leverage ratios;
- calculate the various ratios on the basis of given information;
- describe the limitations of accounting ratios.

29.1 SOLVENCY RATIOS

The term 'solvency' refers to the ability of a concern to meet its long term obligations. The long-term liability of a firm is towards debenture holders, financial institutions providing medium and long term loans and other creditors selling goods on credit. These ratios indicate firm's ability to meet the fixed interest and its costs and repayment schedules associated with its long term borrowings.

The following ratios serve the purpose of determining the solvency of the business firm.

- Debt equity ratio
- Proprietary ratio



Debt-equity ratio

It is also otherwise known as external to internal equity ratio. It is calculated to know the relative claims of outsiders and the owners against the firm's assets. This ratio establishes the relationship between the outsiders funds and the shareholders fund. Thus,

$$\text{Debt-equity ratio} = \frac{\text{Outsiders' funds}}{\text{Share holders' funds}}$$

The two basic components of the ratio are outsiders' funds and shareholders' funds. The outsiders' funds include all debts/liabilities to outsiders i.e. debentures, long term loans from financial institutions, etc. Shareholders' funds mean preference share capital, equity share capital, reserves and surplus and fictitious assets like preliminary expenses. This ratio indicates the proportion between shareholders' funds and the long-term borrowed funds. In India, this ratio may be taken as acceptable if it is 2 : 1. If the debt-equity ratio is more than that, it shows a rather risky financial position from the long term point of view.

Significance

The purpose of debt equity ratio is to derive an idea of the amount of capital supplied to the concern by the proprietors. This ratio is very useful to assess the soundness of long term financial position of the firm. It also indicates the extent to which the firm depends upon outsiders for its existence. A low debt equity ratio implies the use of more equity than debt.

Illustration 1

From the following, calculate the debt-equity ratio

	Rs.
Equity Shares Capital	1,00,000
General Reserve	45,000
Accumulated Profits	30,000
Debentures	75,000
Sundry trade creditors	40,000
Outstanding expenses	10,000

Solution :

$$\begin{aligned} \text{Debt-equity ratio} &= \\ &= \frac{\text{Rs } 75,000}{\text{Rs } 1,75,000} = 3 : 7 \end{aligned}$$

Notes



Notes

Working Notes : Shareholders' fund = Equity share capital + Reserves + Accumulated profits

(i) $Rs100000 + Rs45000 + Rs30000 = Rs175000$

(ii) Long term debt = Debentures = Rs75000

Illustration 2

Calculate the debt-equity ratio from the following data :

Total Assets Rs1,20,000. Total debt Rs1,00,000 current liabilities Rs 60,000.

Solution :

Calculation of debt-equity ratio

$$\text{Long term debt} = \text{Total debt} - \text{current liabilities}$$

$$= Rs\ 1,00,000 - Rs\ 60,000$$

$$= Rs\ 40,000$$

$$\text{Shareholders' fund} = \text{Total Assets} - \text{total debt}$$

$$= 1,20,000 - Rs\ 1,00,000$$

$$= Rs\ 20,000$$

$$\text{Debt equity ratio} = \frac{\text{Debt}}{\text{Equity}}$$

$$= \frac{Rs\ 40,000}{Rs\ 20,000} = 2$$

Proprietary ratio

It is also known as equity ratio. This ratio establishes the relationship between shareholders' funds to total assets of the firm. The shareholders' fund is the sum of equity share capital, preference share capital, reserves and surpluses. Out of this amount, accumulated losses should be deducted. On the other hand, the total assets mean total resources of the concern. The ratio can be calculated as under :

$\text{Proprietary ratio} = \frac{\text{Shareholders' funds}}{\text{Total assets}}$



Notes

Significance

Proprietary ratio throws light on the general financial position of the enterprise. This ratio is of particular importance to the creditors who can ascertain the proportion of shareholders' funds in the total assets employed in the firm. A high ratio shows that there is safety for creditors of all types. Higher the ratio, the better it is for concerned.

A ratio below 50% may be alarming for the creditors since they may have to lose heavily in the event of company's liquidation on account of heavy losses.

Illustration 3

From the following calculate the proprietary ratio :

	Rs	
Equity share capital	1,00,000	
Preference share capital	50,000	
Reserves and surpluses	25,000	
Debentures	60,000	
Creditors	15,000	
Total	2,50,000	Shareholders' funds
Fixed assets	1,25,000	Rs 2,50,000 assets
Current Assets	50,000	
Investment	75,000	
Total	2,50,000	

Solution :

$$\begin{aligned} \text{Proprietary ratio} &= \\ &= \frac{1,75,000}{2,50,000} = 0.7 \text{ or } 70\% \end{aligned}$$



INTEXT QUESTION 29.1

Fill in the blanks with suitable word/words/figures :

- (i) Debt equity ratio =
- (i) ratio measures the long term obligation of a firm.



Notes

$$(iii) \dots\dots\dots = \frac{\text{Shareholders' fund}}{\text{Total Assets}}$$

(iv) Debt equity ratio =

29.2 PROFITABILITY RATIOS

The main aim of an enterprise is to earn profit which is necessary for the survival and growth of the business enterprise. It is earned with the help of amount invested in business. It is necessary to know how much profit has been earned with the help of the amount invested in the business. This is possible through profitability ratio. These ratios examine the current operating performance and efficiency of the business concern. These ratios are helpful for the management to take remedial measures if there is a declining trend. The important profitability ratios are :

- (i) Gross profit ratio
- (ii) Net profit ratio
- (iii) Operating profit ratio $\frac{2,00,000}{3,00,000}$
- (iv) Return on investment ratio

(i) Gross profit ratio

It expresses the relationship of gross profit to net sales. It is expressed in percentage. It is computed as

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

where Net sales = Total sales – (sales returns + excise duty)

Gross profit = Net sales – Cost of goods sold.

Significance

Gross profit ratio shows the margin of profit. A high gross profit ratio is a great satisfaction to the management. It represents the low cost of goods sold. Higher the rate of gross profit, lower the cost of goods sold.

**Illustration 4**

From the following detail of a business concern ascertain the gross profit ratio :

Details	2005 (Rs)	2006 (Rs)
Sales	120,000	160,000
Gross profit	40,000	60,000

Notes**Solution :**

$$2005 \quad \text{Gross profit ratio} = \frac{\text{Rs } 40,000}{\text{Rs } 120,000} \times 100 = 26.67\%$$

$$2006 \quad \text{Gross profit ratio} = \frac{\text{Rs } 60,000}{\text{Rs } 160,000} \times 100 = 37\frac{1}{2}\%$$

Illustration 5

Calculate the gross profit ratio from the following data :

Sales Rs.3,25,000 sales returns Rs.25,000 and cost of goods sold 2,40,000

Solution.

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$\begin{aligned} \text{Gross Profit} &= \text{Net sales} - \text{cost of goods sold} \\ &= 300,000 - 2,40,000 = 60,000 \end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{60,000}{3,00,000} \times 100 = 20\%$$

(ii) Net profit ratio

A ratio of net profit to sales is called Net profit ratio. It indicates sales margin on sales. This is expressed as a percentage. The main objective of calculating this ratio is to determine the overall profitability. The ratio is calculated as :



Notes

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

Significance

Net profit ratio determines overall efficiency of the business. It indicates the extent to which management has been effective in reducing the operational expenses. Higher the net profit ratio, better it is for the business.

Illustration 6

Calculate Net profit ratio from the following :

Net profit	Rs 45,000
Sales	Rs 640,000
Sales Returns	Rs 40,000

Solution :

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

$$\begin{aligned} \text{Net sales} &= \text{Sales} - \text{Sales returns} \\ &= \text{Rs } 640,000 - \text{Rs } 40,000 = \text{Rs } 600,000 \end{aligned}$$

$$\text{Net profit ratio} = \frac{\text{Rs } 45,000}{\text{Rs } 600,000} \times 100 = 7.5\%$$

Illustration 7

Calculate gross profit ratio and net profit ratio from the following figures.

Sales	Rs 150,000
Cost of goods sold	Rs 120,000
Operating expenses	Rs 12,000

Solution :

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

$$\begin{aligned} \text{Gross profit} &= \text{Sales} - \text{Cost of goods sold} \\ &= \text{Rs } 150,000 - \text{Rs } 120,000 \\ &= \text{Rs } 30,000 \end{aligned}$$



Notes

$$\text{Gross profit ratio} = \frac{\text{Rs } 30,000}{\text{Rs } 150,000} \times 100 = 20\%$$

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

$$\begin{aligned} \text{Net profit} &= \text{Gross profit} - \text{operating expenses} \\ &= \text{Rs } 30,000 - \text{Rs } 12,000 \\ &= \text{Rs } 18,000 \end{aligned}$$

$$\text{Net profit ratio} = \frac{\text{Rs } 18,000}{\text{Rs } 150,000} \times 100 = 12\%$$

(iii) Operating profit ratio

Operating profit is an indicator of operational efficiencies. It reveals only overall efficiency. It establishes relationship between operating profit and net sales. This ratio is expressed as a percentage. It is calculated as :

$$\text{Operating profit ratio} = \frac{\text{Operating profit}}{\text{Net sales}} \times 100$$

$$\text{Operating Profit} = \text{Gross Profit} - (\text{Administration expenses} + \text{selling expenses})$$

Significance

It helps in examining the overall efficiency of the business. It measures profitability and soundness of the business. Higher the ratio, the better is the profitability of the business. This ratio is also helpful in controlling cash.

Illustration 8

From the following details of a business concern ascertain the operating profit ratio

Details	2005 Rs	2006 Rs
Sales	60,000	80,000
Interest on debentures	1,000	2,000
Net profit	3,800	6,000



Notes

Solution :

2005

$$\begin{aligned} \text{Net profit before interest} &= \text{Net profit} + \text{Interest} \\ &= \text{Rs } 3,800 + \text{Rs } 1,000 \\ &= \text{Rs } 4,800 \end{aligned}$$

$$\text{Operating profit ratio} = \frac{\text{Rs } 4,800}{\text{Rs } 60,000} \times 100 = 8\%$$

2006

$$\begin{aligned} \text{Net profit before interest} &= \text{Rs } 6,000 + \text{Rs } 2,000 \\ &= \text{Rs } 8000 \end{aligned}$$

$$\begin{aligned} \text{Operating profit ratio} &= \frac{\text{Rs } 8,000}{\text{Rs } 80,000} \times 100 \\ &= 10\% \end{aligned}$$

Some firms take profit before tax but usually companies take profit after tax.

Illustration 9

Calculate operating profit ratio from the following data :

	Rs
Sales	3,00,000
Gross profit	1,20,000
Administration expenses	35,000
Selling and distribution expenses	25,000
Income on investment	15,000
Loss by fire	9,000

Solution :

$$\text{Operating profit Ratio} = \frac{\text{Net operating profit}}{\text{Net sales}} \times 100$$



$$= \frac{\text{Rs}60,000}{\text{Rs } 3,00,000} \times 100 = 20\%$$

Note : Operating profit = Gross profit – (Administration expenses + Selling expenses)

$$\begin{aligned} &= 1,20,000 - (35,000 + 25,000) \\ &= 1,20,000 - 60,000 \\ &= 60,000 \end{aligned}$$

Notes

(iv) Return on investment ratio (ROI)

ROI is the basic profitability ratio. This ratio establishes relationship between net profit (before interest, tax and dividend) and capital employed. It is expressed as a percentage on investment. The term investment here refers to long-term funds invested in business. This investment is called capital employed.

where Capital employed = Equity share capital + preference share capital
+ Reserve and surplus + long term liabilities
– fictitious assets – Non trading investment

or Capital employed = (Fixed asset – depreciation) + (Current Asset – Current liabilities)

or Capital employed = (Fixed Assets – Depreciation) + (Working capital)

This ratio is also known as Return on capital employed ratio. It is calculated as under

$$\text{ROI} = \frac{\text{Net profit before interest, tax and dividend}}{\text{Capital employed}} \times 100$$

Note : If net profit after interest, tax and dividend is given, the amount of interest, tax and dividend should be added back to calculate the net profit before interest, tax and dividend.

Significance

ROI ratio judges the overall performance of the concern. It measures how efficiently the sources of the business are being used. In other words, it tells what is the earning capacity of the net assets of the business. Higher the ratio the more efficient is the management and utilisation of capital employed.



Notes

Illustration 10

Following is the Balance sheet of X Ltd. as on 31st December 2006.

Liabilities	Amount Rs	Assets	Amount Rs
Share capital	20,00,000	Fixed Assets net	29,00,000
Reserves	6,00,000	Current Assets	25,00,000
10% loan	10,00,000	Underwriting commission	100,000
Current liabilities	14,00,000		
Profit for the year	5,00,000		
	55,00,000		55,00,000

Find out the return on investment for the year 2006.

Solution :

	Rs
Profit before interest : Profit as given	500,000
Add : Interest	100,000
NPBI tax & Dividend	600,000
Capital employed : Net Fixed Assets	29,00,000
Working capital	11,00,000
Current Assets – Current liabilities (i.e. 25,00,000 – 14,00,000)	

$$\begin{aligned}
 \text{ROI} &= \frac{\text{Net Profit before Interest and Dividend}}{\text{Capital employed}} \times 100 \\
 &= \frac{60,00,000}{40,00,000} \times 100 = 15\%
 \end{aligned}$$

Alternatively

Share capital	20,00,000
Reserves	11,00,000
Loans	10,00,000
Less : Under writing commission	1,00,000
Capital employed	40,00,000

$$\begin{aligned}
 \text{ROI} &= \frac{\text{Net Profit before interest and dividend}}{\text{Capital employed}} \times 100 \\
 &= \frac{6,00,000}{40,00,000} \times 100 = 15\%
 \end{aligned}$$



Notes

Illustration 11

From the following data, calculate the return on capital employed : Net fixed assets Rs 100,000 current assets Rs 50,000, current liabilities Rs 25,000, Gross profit Rs 32,500, Interest on long-term debt Rs 7500 tax Rs 8750, office and administrative expenses Rs 2500, selling and distribution expenses Rs 5000. There were no long term investments.

Solution :

Calculation of return on capital employed :

Net profit before interest and tax = Gross profit – office and Administrative expenses – selling and distribution expenses

$$= \text{Rs } 32,500 - \text{Rs } 2500 - \text{Rs } 5000$$

$$= \text{Rs } 25000$$

Capital employed = Net fixed Assets + Current Assets – Current liabilities

$$= \text{Rs } 100,000 + 50,000 - 25,000$$

$$= 1,25,000$$

$$\text{Return on capital employed} = \frac{\text{Net profit before interest and tax}}{\text{Capital employed}} \times 100$$

$$= \frac{\text{Rs } 25,000}{\text{Rs } 125,000} \times 100 = 20\%$$

Illustration 12

Given below is the Balance Sheet of M/s ABC Ltd, calculate return on investment (ROI).

Liabilities	Amount Rs	Assets	Amount Rs
Equity share capital	10,00,000	Net fixed assets	15,00,000
Reserves	2,50,000	Current Assets	12,50,000
Profit for the year	2,50,000	Discount on issue of Debentures	50,000
10% debentures	5,00,000		
Current liabilities	8,00,000		
	28,00,000		28,00,000



Notes

Solution :

$$\text{Return on investment} = \frac{\text{Net Profit before Interest, Tax and Dividend}}{\text{Capital Employed}} \times 100$$

Net profit before interest, tax and dividend

$$= \text{Profit} + \text{Interest on debentures}$$

$$= \text{Rs } 2,50,000 + \text{Rs } 50,000$$

$$= \text{Rs } 3,00,000$$

$$\text{Capital employed} = \text{Equity share capital} + \text{Reserves and surplus} + \text{Debentures} - \text{Discount on debentures}$$

$$= \text{Rs } 10,00,000 + \text{Rs } 2,50,000 + \text{Rs } 2,50,000 + 5,00,000 - 50,000$$

$$= 19,50,000$$

or Capital employed = Net fixed Assets + (current assets – current liabilities)

$$= \text{Rs } 15,00,000 + (\text{Rs } 12,50,000 - \text{Rs } 8,00,000)$$

$$= \text{Rs } 15,00,000 + \text{Rs } 4,50,000$$

$$= \text{Rs } 19,50,000$$

$$\text{Return on investment} = \frac{\text{Rs } 300,000}{\text{Rs } 19,50,000} \times 100 = 15.4\%$$

Illustration 13

From the following information, calculate return on investments

Information	Amount (Rs)
Share capital	1,60,000
General reserve	60,000
Profit and Loss A/c	1,00,000
Loan @ 15% Interest	2,00,000
Sales for the year	5,60,000
Tax paid during the year	40,000
Profit for the current year after interest and tax	80,000



Solution :

$$\begin{aligned} \text{Return on investment} &= \frac{\text{Profit before interest and tax}}{\text{Capital employed}} \times 100 \\ &= \frac{1,50,000}{(80,000 + 40,000 + 30,000)} \times 100 \\ &= \frac{\text{Rs } 1,50,000}{\text{Rs } 5,20,000} \times 100 \\ &= \frac{150,000}{5,20,000} \times 100 \\ &= 28.84\% \end{aligned}$$

Notes



INTEXT QUESTIONS 29.2

Fill in the blank with suitable word/words :

- (i) Return on investment is a ratio.
- (ii) Gross profit ratio = $\times 100$
- (iii) Capital employed =
- (iv) = $\frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$
- (v) Name the ratios that relate to the profitability of a business concern

29.3 LEVERAGE RATIO

Leverage ratio is otherwise known as capital structure ratio. The term capital structure refers to the relationship between various long term forms of financing such as debentures (long term), preference share capital and equity share capital including reserves and surpluses. Financing the firm's assets is a very crucial problem in every business and as a rule there should be a proper mix of debt and equity capital in financing the firm's assets. Leverage or capital structure ratios are calculated to test the long term financial position of a firm. Generally capital gearing ratio is mainly calculated to analyse the leverage or capital structure of the firm

Capital gearing ratio

The capital gearing ratio is described as the relationship between equity share capital including reserves and surpluses to preference share capital and



Notes

other fixed interest bearing loans. If preference share capital and other fixed interest bearing loans exceed the equity share capital including reserves, the firm is said to be highly geared. The firm is said to be low geared if preference share capital and other fixed interest bearing loans are less than equity capital and reserves.

Capital gearing ratio

$$= \frac{\text{Equity share capital + reserves and surpluses}}{\text{Preference share capital + long term debt bearing fixed interest}}$$

Significance

Capital gearing ratio is very important ratio. Gearing should be kept in such a way that the company is able to maintain a steady rate of dividend. High gearing ratio is not good for a new company or a company of which future earnings are uncertain.

Illustration 14

From the following information find out capital gearing ratio.

Source	2005		2006	
	500,000 + 250,000	500,000 share capital + Reserves and surplus	500,000 + 250,000	400,000 + 200,000
	Preference share capital + Long term debt bearing fixed interest	Amount (RS)	Amount (RS)	
Equity share capital		500,000	400,000	
Reserves & surplus		300,000	200,000	
8% preference share capital		250,000	300,000	
6% Debentures		250,000	400,000	

Solution :

Capital gearing ratio

=

For the year 2005 = (Low geared)

For the year 2006 = $\frac{400,000 + 200,000}{300,000 + 400,000} = 8 : 7$ (High geared)

**INTEXT QUESTION 29.3**

Fill in the blanks with suitable word/words :

- (i) Leverage ratio is also known as ratio.
- (ii) ratio is calculated to test the long term financial position of a firm.
- (iii) =
$$\frac{\text{Equity share capital} + \text{Reserve and Surpluses}}{\text{Preference share capital} + \text{Long term debt bearing fixed interest}}$$
- (iv) To study capital structure of the firm ratio is used.

29.4 LIMITATION OF ACCOUNTING RATIOS

Accounting ratios are very significant in analysing the financial statements. Through accounting ratios, it will be easy to know the true financial position and financial soundness of a business concern. However, despite the advantages of ratio analysis, it suffers from a number of disadvantages. The following are the main limitations of accounting ratios.

- **Ignorance of qualitative aspect**

The ratio analysis is based on quantitative aspect. It totally ignores qualitative aspect which is sometimes more important than quantitative aspect.

- **Ignorance of price level changes**

Price level changes make the comparison of figures difficult over a period of time. Before any comparison is made, proper adjustments for price level changes must be made.

- **No single concept**

In order to calculate any ratio, different firms may take different concepts for different purposes. Some firms take profit before charging interest and tax or profit before tax but after interest tax. This may lead to different results.

- **Misleading results if based on incorrect accounting data**

Ratios are based on accounting data. They can be useful only when they are based on reliable data. If the data are not reliable, the ratio will be unreliable.



Notes



Notes

● **No single standard ratio for comparison**

There is no single standard ratio which is universally accepted and against which a comparison can be made. Standards may differ from Industry to industry.

● **Difficulties in forecasting**

Ratios are worked out on the basis of past results. As such they do not reflect the present and future position. It may not be desirable to use them for forecasting future events.



WHAT YOU HAVE LEARNT

- The term solvency ratio means ability of a concern to meet its long-term obligations. The solvency ratios are :

Debt-equity ratio

Proprietary ratio

- The purpose of debt equity ratio is to derive an idea of the amount of capital supplied to the concern by the proprietary.

$$\text{Debt equity ratio} = \frac{\text{Shareholders' fund} + \text{Outsiders' fund}}{\text{Shareholders' fund}}$$

- Proprietary ratio establishes relationship between shareholders' funds to total assets of the firm

Proprietary ratio

- Profitability ratio assesses the overall efficiency of the business concern.

- Important profitability ratios are :

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

$$\text{Net profit ratio} = \frac{\text{Net Profit}}{\text{Net sales}} \times 100$$

$$\text{Operating profit ratio} = \frac{\text{Operating profit}}{\text{Net sales}} \times 100$$

$$\text{Return on investment ratio} = \frac{\text{Net profit before interest, tax and dividend}}{\text{capital employed}} \times 100$$



Notes

- Leverage ratio establishes the relationship between various long term forms of financing such as debentures, preference share capital and equity share capital including reserves and surpluses.
- Capital gearing ratio establishes relationship between equity share capital including reserves and surpluses to preference share capital and other fixed interest bearing loans.

Capital gearing ratio

$$= \frac{\text{Equity share capital + reserve and surplus}}{\text{Preference share capital + Long term bearing fixed interest}}$$

- Limitations of accounting ratios are
 - ignorance of price level charges
 - ignorance of qualitative factors
 - no single concept
 - misleading result if based on incorrect accounting data
 - difficulties in forecasting



TERMINAL QUESTIONS

1. Explain solvency ratios in brief.
2. What are profitability ratios? Explain the ratios in brief.
3. What are the limitations of ratio analysis?
4. What is meant by gross profit and net profit?
5. Explain capital gearing ratio.
6. From the following data, calculate (a) Gross profit ratio (b) Net profit ratio.

	Rs
Sales	25,20,000
Cost of sales	19,20,000
Net profit	3,60,000

7. Total assets Rs 12,50,000, Total debt Rs 10,00,000 current liabilities Rs500,000. Calculate debt-equity ratio.



Notes

8. Following is the Profit and Loss account of M/s Bunu Ltd for the year 31st December, 2006.

Opening stock	100000	Sales	560000
Purchases	350000	Closing stock	100000
Wages	9000		
Gross profit c/d	201000		
	660,000		660,000
Administrative expenses	20000	Gross profit b/d	201,000
Salary and administrative expense	89000	Interest on investment	10000
Non-operating expenses	30000	Profit on sale of investment	8000
Net Profit	80000		
	219000		219000

You are required to calculate (a) Gross profit ratio (b) Net profit ratio (c) Operating profit ratio.

9. Following particulars pertaining to assets and liabilities of a XYZ Ltd. are given :

Liabilities	Amount (Rs)	Assets	Amount (Rs)
Equity share capital	250000	Land and Building	450000
Preference share capital	200000	Plant	400000
Reserves	200000	Stock	150000
Debentures	300000	Sundry debtors	100000
Current liabilities	200000	Cash	45000
		Prepaid expenses	5000
	1150000		1150000

Calculate (a) debt equity ratio (b) proprietary ratio.



ANSWERS TO INTEXT QUESTIONS

Intext Questions 29.1

- I. (i) $\frac{\text{Outsiders' funds}}{\text{Shareholders' funds}}$ (ii) Solvency
- (iii) Proprietary ratio (iv) 2 : 3



Notes

Intext Questions 29.2

- (i) Profitability ratio
- (ii)
- (iii) Fixed assets – Depreciation + current asset – current liabilities
- (iv) Operating profit ratio
- (v) Gross profit ratio, Net profit ratio, Return on investments, operating profit ratio

Intext Questions 29.3

- (i) Capital structure
- (ii) Leverage
- (iii) Capital gearing ratio
- (iv) Capital gearing

Answers to Terminal Questions

- 6. (a) 23.8% (b) 14.29%
- 7. 2 : 1
- 8. (a) 35.9%, (b) 14.3% (c) 16.4%
- 9. (a) 1 : 1.3, (b) 1 : 1.77

**Activity**

Visit the office of a stock broker in the nearby market and ask annual report of two joint stock companies. Study the Balance Sheets of the two companies and compute the following ratios :

- (a) Debt Equity Ratio
- (b) Gross Profit Ratio
- (c) Net Profit Ratio
- (d) Return on investment

Compare and comment on the profitability and solvency efficiency of the two companies.