

## Ratio Analysis

### I Liquidity Ratios

1. **Current Ratio** = current Assets/ current liabilities Ideal Ratio= 2;1

2 **Quick /Liquid ratio/acid test Ratio =**

= Quick assets / Quick liabilities Ideal ratio=1:1

Quick assets = Current Assets- (Stock + prepaid exp)

Quick liabilities = Current liabilities- Bank OD

3. **Absolute Liquid Ratio**= Cash+ bank+ short term securities/Quick liabilities

### II Activity /Turnover/Efficiency Ratio

4. **Inventory Turnover Ratio** = COGS/Average Stock

COGS= Opening stock+purchases + direct expenses – closing stock

Average Stock= opening stock+ closing stock/2

In the absence of COGS take Sales as numerator

In the absence of Average stock take closing stock as denominator

**Inventory Conversion Period**= 365/ Stock turnover Ratio

5. **Debtors or receivable turnover ratio /Velocity**= net Credit Annual Sales/ Average Trade debtors

Trade Debtors = Sundry Debtors+ B/R+ A/R

Average trade debtors = Opening Dr + Closing Dr/2

In the absence of Credit Sales take Total Sales as numerator

In the absence of Average Drs take Closing Drs as denominator

Average collection period= 365/Drs turn over ratio

6. **Creditors or payable Turnover Ratio**

Creditors **turnover Ratio/velocity**= net Cr Annual Purchases/ Average Cr

Trade Creditors = Sundry Creditors+ Bills Payable

In the absence of Credit purchases take Total purchases as numerator.

In the absence of Average Creditors take creditors as denominator

**Average Payment Period Ratio**= 365/Crs turnover Ratio

### **8.fixed assets turnover Ratio**

Fixed Assets turnover Ratio = COGS (or Sales)/ Net Fixed Assets

9. capital turnover ratio

Capital turn over ratio= cost of goods sold / capital employed

Capital employed= shareholders fund + long term liabilities

### **III Solvency ratio , Capital structure Ratios or Leverage ratios.**

#### **10.Debt equity ratio**

##### **I method**

Debt equity ratio =Long term debt/ Share holders fund

Long term debt = Debentures , Long term loans

Share holders fund= Equity share capital + pref share capital +, P& L + General Reserves + Capital reserves + and any other funds that belongs to share holders – miscellaneous exp(B/S asset side)

##### **II Method**

Debt Equity Ratio= External equity (total debts) / Internal equity

External equities= CL + Long term liabilities

Internal Equities= Shareholders fund

IDEAL RATIO= 1: 1

#### **11. Proprietary Ratio**

Proprietary ratio= Shareholders fund / Total Assets

Total Assets = All tangible Assets and those intangible assets which have a definite realisable value

( given as at cost)

Note: A high proprietary ratio indicates greater long term solvency but it may prevent a co from trading on equity.

12 .Interest Coverage Ratio (Debt Service Ratio or Fixed Charges Cover)

Interest Coverage Ratio = Earnings before tax and interest/ Fixed interest Charges

Fixed Interest charges= Interest on debentures and long term loans

Note; Interest charges should be covered six times to seven times

13. Capital Gearing Ratio:

Capital Gearing Ratio= Fixed income securities/ Equity share holders fund

Note ; A co is highly geared if this ratio is more than one.

Co is low geared if this ratio is less than one.

Co is evenly geared in this ratio is equal to one

Fixed income securities = Debentures and Pref shares

14 . fixed assets to net worth or fixed assets to proprietors fund

Fixed assets ratio= net fixed assets/ share holders fund

#### **IV Profitability Ratios**

I profitability in relation to Sales. General profitability ratio

II Profitability in relation to investment or over all profitability ratio

General profitability ratios = The ratios are:

1 Gross profit Ratio 2. Net profit Ratio 3. Operating Ratio

**15 . Gross Profit Ratio=Gross Profit / Net Sales \* 100**

Gross Profit= sales- COGS

#### **Net profit Ratio**

a. Net operating Profit Ratio

b. Net Profit Ratio

16.Net Operating Profit Ratio= Net Operating Profit/Net Sales\*100

Net operating Profits= GP- All operating exp(Administration exp and selling n distribution exp)

Operating exp =Advertising exp like directors fees , legal exp office salaries, rent insurance etc.

= Selling & Distribution exp like advertising, travelling exp ,Salaries and commission of salesmen etc.

**17. Net profit Ratio**= Net Profit / Net Sales \*100

### **18. Operating Ratio**

**Operating Ratio** = operating Cost / Net Sales \*100

or

Operating Ratio=Cost of Goods sold +Operating exp /Net sales \*100

### **19. Expenses Ratio**

Particular exp Ratio= Particular exp/net sales \*100

### **Profitability Ratios Based on Investments**

**20. Return on capital employed or (ROI) return on investment**= Net profit/ Capital employed\*100

Capital employed = shareholders fund + long term liabilities

### **21. net worth ratio or return on share holders fund**

Net worth ratio= net profit (after interest and taxes)/ shareholders fund \*100

### **22. Return on Equity capital**

**Return on equity capital** = Net profit after interest n tax n pref dividend/ equity share holders fund \*100

### **23 Earning Per Share (EPS)**

EPS= Net Profit After Tax – Pref dividend/ No.of equity shares

### **24.. dividend pay out ratio**

Dividend pay out ratio= Dividend per share / EPS

### **25 price earning ratio**

Price earning ratio ( P/E ratio) =Market price per equity share/ EPS

## Problems

1. Current Assets of a co are Rs 5,00,000; Current Ratio = 2.5:1 ,and quick Ratio 1:1. Calculate the value of current liabilities , liquid Assets and stock.

2. current liabilities of a company is Rs 1,20,000. Its current ratio is 3 and liquid ratio is 0.90 . calculate the amount of current Assets , Liquid Assets and inventory.

3. current Ratio of a company is 3:1 , working capital is Rs 30,000, Calculate the amount of Current Assets and Current Liabilities.

4. A business has current ratio of 3:1 and quick ratio of 1.2:1 . if the working capital is 1,80,000. Calculate the total current Assets , current Liabilities and value of stock.

5. Z Ltd as a current Ratio of 3.5:1 and quick Ratio of 1.5:1 . If the excess of current assets over quick assets as represented by stock is 60,000 . calculate the current assets and current liabilities.

6. following information is given to you.

a. Current Ratio= 2.5

b. working capital= 90,000.

Find out (i) current assets (ii) current liabilities.

7. The following information of a company is given

Current Ratio 2.5:1, Acid test ratio , 1.5:1 , current liabilities Rs 50,000 , find out

a. current assets

b. Liquid assets

c. Inventory .

8. Given

Current Ratio = 2.8

Acid test ratio=1.5

Working Capital= Rs 1,62,000.

Find out

A, current assets

B. current liabilities

C. liquid assets.

9. closing stock of a company is Rs 2,00,000. Total liquid assets are Rs . 10,00,000

Liquid Ratio is 2;1 . find out working capital .

10. Cost of goods sold is Rs 2,40,000. Stock turn over ratio is 6 times. Opening stock is Rs 6,000 more than closing stock. Calculate opening stock.

11. From the following calculate 1. Current ratio 2. Liquid ratio 3. Absolute liquid ratio

Liabilities	Amount	Assets	Amount
Equity shares of Rs 10 each	1,00,000	Goodwill	50,000
Reserves	25,000	Fixed assets	1,50,000
P&L account	40,000	Stock	40,000
Secured loans	70,000	Sundry Debtors	50,000
Creditors	50,000	Less; RDD	1,000
Bank Over draft	30,000	Advances	10,000
Provision for Tax	20,000	Bank	20,000
		Cash	16,000
	3,35,000		3,35,000

12. Following is the balance Sheet of XYZ Ltd for the year ended 31-12-2002

Liabilities	Amount	Assets	Amount
Equity capital	5,00,000	Land & Building	3,50,000
5% debentures	2,00,000	Plant & Machinery	2,50,000
Bank Loan	1,50,000	Cash	25,000
Sundry Creditors	75,000	Bank	55,000
Bills payable	50,000	Debtors	85,000
O/S Expenses	5,000	Bills Receivable	1,05,000
		Stocks	1,00,000
		Prepaid expenses	10,000
	9,80,000		9,80,000

13. Calculate current Ratio and quick Ratio. Debtors – Rs 4,00,000, prepaid expenses Rs 40,000, Debentures – 2,00,000, Stock – Rs 1,60,000, Bills Payable – Rs 80,000, marketable securities- Rs 80,000, Sundry Creditors – 1,60,000, Cash Rs 1,20,000; Expenses payable –Rs 1,60,000.

14. From the following calculate 1. Stock turn over ratio 2. Stock conversion period or average holding period.

Direct expenses	8,000
Opening stock	12,000
Purchases	1,00,000
Interest paid	3,000
Closing stock	12,000

15. Cost Of Goods Sold 5,00,000 ; opening stock Rs 40,000; Closing stock Rs 60,000. Find out the Inventory ratio. Inventory Coverage period .

16. From the following information calculate stock turnover ratio.

Sales Rs 3,00,000 ; gross profit 25% on cost : opening stock was 1/3 of the value of the closing stock;

Closing stock was 30% of sales.

17. Average stock of a firm is Rs 40,000, its opening stock is Rs 5,000 less than the closing stock. Find out the opening and closing stock.

18. Cash sales during the year	1,50,000
Credit sales	2,70,000
Total debtors at the beginning	55,000
Total debtors at the end	45,000
Return Inwards	20,000

Calculate debtors turn over ratio and Average collection period.

19 from the following calculate

- Debtors turn over ratio
- Average collection period
- Creditors or payable turnover ratio
- Average payment period

20. The comparative balance sheet of A Ltd co for the year ended 31<sup>st</sup> Dec 1998 & 1999 is given

Liabilities	1998	1999	Assets	1998	1999
Equity share capital	3,00,000	4,00,000	Goodwill	2,00,000	2,00,000
Reserve fund	1,50,000	2,80,000	Land & building	3,00,000	4,00,000
8% debentures	2,00,000	3,00,000	Plant n machinery	2,50,000	3,50,000
Mortgage loan	4,00,000	2,58,000	Patents	50,000	50,000
Creditors	50,000	70,000	Stock	1,50,000	2,00,000
Bills payable	25,000,	35,000	Debtors	1,00,000	80,000
Bank overdraft	40,000	60,000	Bills receivables	80,000	90,000
Outstanding exp	10,000	15,000	Marketable securities	18,000	20,000
Tax liabilities	15,000	20,000	Cash balance	40,000	45,000
			Prepaid expenses	2,000	3,000
	11,90,000	14,38,000		11,90,000	14,38,000

Particulars	1998	1999
Sales	5,00,000	6,00,000
Purchases	3,00,000	4,05,000

From the information calculate - current ratio, Acid test ratio , Inventory turn over ratio, Inventory conversion period, Debtors turn over ratio, average collection period, Creditors turnover ratio, average payment period

21. from the following calculate debt equity Ratio.

Equity share capital	1,10,000
6% pref share capital	30,000
General Reserve	50,000
Reserve for contingency	20,000
6% mortgage debentures	50,000
Creditors	20,000
Preliminary expenses	5,000
Prepaid expenses	4,000

Calculate the debt equity ratio from the above.

22. from the following calculate debt equity ratio, proprietary ratio , and ratio of total assets to debt.

Preference share capital	2,00,000
Equity share capital	3,00,,000
Reserves	1,00,000
Debentures	2,00,000
Creditors	50,000



Discount on issue of shares	50,000
Bank Loan(Long term)	1,50,000
Fixed assets	5,50,000
Current assets	4,00,000

Calculate a. Debt equity ratio, b. Proprietary Ratio, c. Total assets to Debt

23. calculate gross profit ratio based on following information

Cash sales 25% of total sales , purchases Rs 2,76,000, credit sales Rs 2,40,000, excess of closing stock over opening stock Rs 20,000.

24 .The following is the trading and P& L account of a co for the year ended 31.-12-2002

particulars	amount	particulars	amount
To opening stock	76,250	By sales	5,00,000
To purchases	3,15,250	By closing stock	98,500
To factory expenses	7,000		
To Gross profit c/d	2,00,000		
	5,98,500		5,98,500
To administration exp	1,01,000	By gross profit b/d	2,00,000
To selling & distribution exp	12,000		
To non operating exp	9,000	By non operating income	6,000
To net prtofit	84,000		
	2,06,000		2,06,000

You are required to calculate a. Expenses ratio. B. Gross profit ratio,. C. operating ratio d. Operating profit ratio e. Net profit ratio.

25. profit after interest and taxes is Rs 100,000, interest paid is Rs 10,000 and provision for tax is Rs 15,000, calculate interest coverage Ratio. May -2013

26. X Ltd had quick ratio 3;1 and current liabilities of Rs 1,00,000. Stock in trade is Rs 50,000. Find out current assets and current ratio may 2007

27. given current ratio =1.4, liquid ratio=1,

Stock turnover ratio= (closing stock )8

Gross profit ratio 20% ,sales for the year Rs 10,00,000

From the above calculate working capital (2010)

28. from the following information for the year ending 31-12-2010

a. stock turn over Ratio= 6 times

b. Gross profit Ratio= 20% on sales, sales Rs 2,00,000, , closing stock is Rs 10,000 more than opening stock, opening creditors is Rs 20,000, closing creditors is Rs 30,000, net working capital s Rs 50,000

find out ---- average stock, average payment period, purchases, working capital turnover ratio

(2011)

29. from the following calculate

a. Debtors turnover Ratio

b. Debt collection period in months

total sales for the year Rs 3,75,000, Cash sales for the year Rs 75,000

At the beginning of the year – Dr 30,000, B/R 10,000

At the end of the year \_ Dr, 45,000 , B/R 15,000 (2012)

30. Calculate . a. Debt equity ratio. b) interest coverage ratio

Equity share capital 2,10,000, pref share capital 4,00,000, General Reserve Rs 2,40,000: preliminary exp 40,000,; net profit before interest and tax rs 3,00,000, Interest Rs 60,000; Debentures Rs 5,00,000; Loan Rs 4,00,000; tax Rs 1,00,000; may 2009

31.. the capital of the co is as follows

9% pref shares of Rs 10 each	3,00,000
Equity shares of Rs 10 each	8,00,000
8% debentures of Rs	10,00,000
Profit after tax Rs	2,70,000
Equity dividend paid	20%
Market price of equity share Rs	40

Calculate

a) Debt – equity Ratio

- b) Capital gearing ratio
- c) Earning per share
- d) Price earning Ratio

2008

32. Using the following data , complete the Balance sheet below

Gross profit (20% on sales )                      Rs 1,20,000

Shareholders equity                                      Rs 1,00,000

Credit Sales to total Sales                              80%

Total assets turn over                                      3 times

(Sales/ total assets)

Inventory turn over                                      8 times

(to cost of sales)

Average collection period                              18 days

(360 days in a year)

Current ratio    1;6

Long term debt to equity                              40%

Balance sheet

Liabilities	amount	Assets	Amount
Shareholders equity	-----	Fixed assets	----
Long term debts	-----	Debtors	-----
Creditors	-----	Inventory	-----
		Cash	-----

Total	-----	Total	-----

33. from the following information prepare trading & P&L A/C & B/S as on 31-03-2007

Current ratio	2.5
Quick ratio	1.3
Proprietary ratio fixed assets/proprietors fund	0.6
Gross profit ratio	10%
Debtors velocity	40 days
Sales	7,30,000
Working capital	1,20,000
Bank OD	15,000
Share capital	2,50,000
Closing stock is 10% more than opening stock	
Net profit 10% of proprietary funds	

34. given the following particulars;

Debtors velocity ; 3 months

Creditors velocity 2 months

Stock velocity 8 months

Fixed assets turn over ratio ; 8 times

Gross profit turn over ratio ; 25 %

Gross profit during the year amounted to Rs 80,000. There is no long term loan or overdraft. Reserves and surplus amounted to Rs 28,000. Liquid assets are Rs 97,333,33 . closing stock is Rs 2,000 more than the opening stock. B/R & B/P are Rs 5,000 and Rs 2,000, respectively.

Find out

a) Sales

- b) Debtors
- c) Closing stock
- d) Creditor
- e) Fixed assets
- f) Proprietors fund

