

05. Financial Concepts:

Ratio Analysis

A financial ratio is a relationship of two values of financial statements. Ratios basically are mathematical expressions, which are calculated to derive certain conclusion. The ratio may be expressed as number of times, proportion or percentage. There are number of ratios, but which to consider for a particular type of analysis is left to the personal judgement of the analyst. As a matter of fact, all the ratios are for different purposes and have different objectives.

Uses of Ratios.

Sr. No.	
1	Ratios offer help in intra firm comparisons, industry comparison and also for inter-firm comparison.
2	Financial position of the entity can be studied.

Limitations & problems of Ratio analysis:

Sr. No.	Limitations
1	Ratios are based on financial statements, so contain almost all of the deficiencies of those accounts.
2	Some ratios are open for manipulation and need to be interpreted with care. E.g. stock levels may be kept artificially low at year-end, creating an impression of high efficiency in this area.
3	Inter-firm comparisons are faced with the problem that different organizations might use rather different accounting policies. E.g. depreciation methods etc.
4	Detailed knowledge of a company's markets is seldom obtainable from the published accounts, but is extremely important for assessing future profitability.
5	Ratios are useful when comparing similar organizations operating under similar conditions. Comparisons with different types of organizations can be misleading.
6	There is a real danger that ratio analysis can lead to conclusions, which are over-simplified. e.g. high current ratio.

Types of Ratios.

Sr. No.	Type of Ratio	Various ratios
1	Turnover Ratios	Debtors, Creditors, Inventory
2	Liquidity Ratios	Current, Acid test
3	Profitability Ratios	Gross profit, Net profit
4	Solvency Ratios	Debt Equity, Interest coverage, DSCR

Sr. No.	Ratios	Formula / Interpretation
1.0	Turnover Ratios:	
1.1	Debtors Turnover Ratio	Average Debtors x 365 divided by Sales. Average Collection period.
1.2	Creditors Turnover Ratio.	Average Creditors x 365 divided by Credit purchases. Average payment period.
1.3	Inventory Turnover Ratio.	Average inventory x 365 divided by material cost Holding period of stock

Sr. No.	Ratios	Formula / Interpretation
2.0	Liquidity Ratios:	
2.1	Current Ratio	Current Assets / Current Liabilities.
2.2	Acid Test Ratio	Quick Assets / Quick liabilities.

Sr. No.	Ratios	Formula / Interpretation
3.0	Profitability Ratios:	
3.1	Gross Profit Ratio	Gross profit / Net sales x 100
3.2	Net Profit Ratio	Net profit / Net sales x 100
3.3	Material cost ratio	Material cost / Net sales x 100
3.4	Expenses Ratios	Expenses / Net sales x 100
3.5	Return on Capital	PBIT / Capital employed x 100
3.6	Return on Proprietor's Funds	PAT / Proprietor's Funds

Sr. No.	Ratios	Formula / Interpretation
4.0	Solvency Ratios:	
4.1	Debt Equity Ratio	Total outside debt / Equity or Shareholders' funds.
4.2	Proprietary Ratio	Proprietor's funds / Total Assets x 100
4.3	Interest coverage Ratio	PBIT / Fixed interest charges
4.4	Debt coverage Ratio	PATID / (Interest + Repayment installments)

Notes	Ratio	Components
1	Average debtors	Opening debtors + Closing debtors divided by 2
2	Current assets	Stock + debtors + cash & bank balance + loans & advances + Prepaid expenses
3	Current liabilities	Creditors + BP + O/S expenses + IT payable + Dividend payable + Bank overdraft (not if permanent)
4	Quick Assets	Current Assets less (Stock + prepaid expenses)
5	Quick Liabilities.	Current liabilities less Bank overdraft

6	Gross Profit	Sales less material cost.
7	Net Profit	Sales less all expenses + any other income.
8	Debt	Long term loans + debentures + Bank overdraft
9	Equity	Equity share capital + Preference share capital + Free Reserves – (Accumulated losses + deferred revenue expenditure) = Net worth = Proprietor's funds.
10	PBIT	Profit before Tax + interest.
11	PATID	Profit after Tax + Interest + Depreciation. = Annual cash flow.
12	PAT	Profit less I. Tax.
13	Capital employed	Net Fixed Assets + Current assets less Current liabilities.

Interpretation of various Ratios:

Sr. no.	Ratio
1.0	Turnover Ratios:
1.1	Debtors Turnover Ratio: This ratio measures the average number of day's credit given to debtors. It helps to assess the efficiency of the debt collection department. Debt collection period should be kept as low as possible, consistent with maintaining customer goodwill and market trend.
1.2	Creditors Turnover Ratio: This ratio measures the average number of days credit is exploited from suppliers. Credit given by suppliers depends on various factors such as demand & supply position of material, industry trends, competition etc.
1.3	Inventory Turnover Ratio: This ratio measures the average number of days for which stock is held. It helps to assess the efficiency of stock utilization. Various factors affect the stock level held by the organization such as product, production-seasonal or otherwise, demand pattern, competition, funds availability etc.
2.0	Liquidity Ratios:
2.1	Current Ratio: This ratio is concerned with the assessment of an organization's ability to meet its short-term obligations. The ratio must be high enough for safety. However, high current assets do not normally lead to high profits in themselves, so the usual trade-off between risk and return exists. Industry norm is 2:1
2.2	Acid Test Ratio: This ratio is also concerned with short-term liquidity. In a sense it is more appropriate measure since liquid assets represent the source of funds from which current liabilities will probably be met. Industry norm is 1:1
3.0	Profitability Ratios:
3.1	Gross Profit Ratio: GP / Margin on sales
3.2	Net Profit Ratio: Net profit on sales. It indicates organization's ability to generate profits from sales.

3.3	Material cost ratio: Material cost to sales
3.4	Expenses Ratios: Expenses to sales.
3.5	Return on Capital: This ratio is expressed as a percentage. Generally higher the return the better.
3.6	Return on Proprietor's Funds: This ratio provides a measure of the percentage return on the investment made by the owners.
4.0	Solvency Ratios:
4.1	Debt Equity Ratio: This ratio is concerned with establishing the relationship between external and internal long-term financing. The use of long-term debt in the capital structure has both advantages and disadvantages, and in practice the level of debt actually existing is the result of a balancing process. The main advantage of debt is that it provides an opportunity for greater returns to shareholders. Industry norm is 2:1
4.2	Proprietary Ratio: It measures the owner's contribution of funds.
4.3	Interest coverage Ratio: This ratio measures the safety available to Bank for recovery of interest. Industry norm is 2:1
4.4	Debt coverage Ratio: This ratio measures the safety available to Bank for recovery of interest & loan installment. Industry norm is 2.5 : 1

Other Ratios:

6.1	Employees Ratios:	
➤	Sales per employee:	Sales / staff strength
➤	Sales generation:	Sales / salaries & wages
➤	Profit per employee:	PBT / staff strength
➤	Profit generation:	PBT / salaries & wages
➤	Remuneration level:	Salaries & wages / staff strength
6.2	Shareholder's Ratios:	
➤	Earnings per share:	PAT less Pref. Dividend / number of shares
➤	Dividend per share:	Dividend / Number of shares
➤	Dividend pay out ratio:	Dividend / Earnings per share
➤	Dividend yield:	Dividend per share / Market price per share
➤	Book value per share:	Ordinary shareholder's equity / number of shares
➤	Price-earnings ratio:	Market price per share / Earnings per share.

Funds Flow Statement

One of the most fundamental objectives of business is to make a profit. Long run survival requires that the business must be able to deal with any possible liquidity problems which arise in the short term. Basically any business must be concerned with making a profit and maintaining a solvent financial position.

➤ **Objectives of Funds Flow statement:**

1. An analysis of the flow of liquid funds can be very useful in making decisions concerning liquidity.
2. A full understanding of a business's affairs requires the identification of the changes or movements in assets, liabilities and capital for a year, and the resultant effect on liquid resources. A profit & loss account or balance sheet does not specifically disclose this information.
3. To show the manner in which the operations have been financed, and how the financial resources have been used.
4. They provide useful guide to creditors & lenders.
5. Various ways to improve the net working capital position can be decided.
6. It focuses attention on resources available for capital investment.
7. It is useful in deciding how fixed assets should be financed.
8. It is useful in planning the retirement of debt.

➤ **It is now necessary to understand the Balance Sheet in a different way. E.g. Long term and short term Funds and its application.**

Liabilities	Assets
Long Term	Long Term
Equity Share Capital	Fixed Assets
Pref. Share Capital	Investments
Reserves & Surplus	
Debentures	

Term Loan	
Long term unsecured loans	
Short Term	Short Term
Bank CC	Stock
Creditors	Debtors
Provisions	Cash & Bank balances
	Loans & Advances

- **Ideally Funds Flow statement should reveal transfer of Long Term Funds to Short Term Use.**
- **If Short-Term Funds are transferred to Long Term Use, it will indicate that Bank's funds have been diverted for Long Term Use. This is not the healthy financial practice, as the firm will always face the liquidity crises.**
- **The effect of increase / decrease in current assets and current liabilities on working capital is shown below:**
 1. Working capital means difference between current assets and current liabilities.
 2. Increase in current assets leads to increase in working capital.
 3. Decrease in current assets leads to decrease in working capital.
 4. Increase in current liabilities leads to decrease in working capital.
 5. Decrease in current liabilities leads to increase in working capital.
- **The various stages in preparing Funds Flow statement are listed below.**
 1. To prepare statement of increase / decrease in Balance sheet figures.
 2. To prepare statement of changes in working capital statement.
 3. To prepare Fund Flow Statement.

Cost of Capital

	Rs'000	%	Before Tax	After Tax	Weighted Avg. Cost
			%	%	%
1	2	3	4	5=4 Less 30%	6=3x5
Capital	6000	30		20.0	6.00
Loans	14000	70	15	10.5	7.35
Total	20000	100			13.35
Before Tax = 13.35 divided by 0.70 = 19.07 % (IT @ 30 %)					

Rs'000

PBIT	19.07 % of 20000	3814
Less: Interest	15 % on 14000	2100
PBT		1714
Less: Income Tax	30 % on 17.14	514
PAT		1200
Dividend	20 % on 6000	1200
Retained earnings		-----

Internal Generation: PAT +Depreciation

Balance Sheet

31-03-2008	Liabilities	31-03-2009	31-03-2008	Assets	31-03-2009
2000	Capital	2000	1000	Machinery	900
-----	Profit	400	----	Debtors	---
			1000	Bank bal.	1500
2000	Total	2400	2000	Total	2400

Profit & Loss A/C

31-03-2008	Expenditure	31-03-2009	31-03-2008	Income	31-03-2009
-----	Purchases	800	-----	Sales	1500
-----	Expenses	200			
-----	Depreciation	100			
-----	Profit	400			
-----	Total	1500	-----	Total	1500

Bank A/C

Capital	2000	Machinery	1000
		Balance as on 31-03-2008	1000
Total	2000	Total	2000

Opening balance	1000	Purchases	800
Debtors	1500	Expenses	200
		Balance as on 31-03-2009	1500
Total	2500	Total	2500

Note: Creditors & Debtors ---Nil

Funds Flow Statement for the year 2008-09
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Profit	400	Increase in Bank balance	500
Add: Depreciation	100		
Internal Generation	500		
Total	500	Total	500

Note: Internal Generation = PAT +Depreciation. In other words cash is generated in the business to the extent of Internal Generation. This example was compiled to demonstrate this fact. In actual situation this surplus cash gets utilized for addition to Fixed Assets, increase in working capital, repayment of loans etc.

Break Even Analysis

Introduction

- ❖ Break-even analysis is used to plan the profit & production.
- ❖ Break-even analysis evaluates and compares the fixed costs and variable costs.
- ❖ This is no profit or no loss situation.

Use of Break even analysis

- ❖ To study the effect of CVP ratio.
- ❖ To know the effect of changes in sales mix.
- ❖ To determine the volume of sales to earn targeted profits.
- ❖ To decide to enhance the production of profitable products or to reduce /discontinue the production of low profitable or loss making products.

Assumptions on Break-even point.

- ❖ The following assumptions are such which are true and valid in certain set of circumstances up to a certain level.
 - All costs are divisible into fixed and variable.
 - All fixed costs remain constant at all levels of output within the installed capacity.
 - The variable costs vary along with production.
 - The selling price is assumed to be constant.
 - The volume of production influences the cost.
 - There is synchronization between production and sales, which would help deciding the break-even point.

Break even point

- ❖ The break-even point may be termed as that point of sales volume at which the total income is equal to total costs.
- ❖ It is a point of sale and production where there is no profit no loss.
- ❖ BEP can be decided in terms of units and as well as in monetary terms.
- ❖ Any production or sales below this point results into loss or any production or sales beyond this, yields profit.

Definitions

❖ Variable Costs:

(Direct materials, direct labor and variable overheads) will be incurred in direct proportion to the level of production.

❖ Fixed Costs:

Most overheads are time-based and remain constant, or fixed, regardless of the level of production.

❖ Total Costs:

Total costs at any level of production are obtained by adding the fixed costs to the variable costs.

Formula of BEP

$$\begin{aligned} \text{BEP in units} &= \frac{\text{Total fixed costs}}{\text{Sales price less variable cost per unit}} \\ &= \text{Total fixed costs divided by contribution per unit.} \end{aligned}$$

Formula of BEP

$$\text{BEP in Sales value} = \frac{\text{Fixed costs} \times \text{Sales}}{\text{Sales Less Variable cost}}$$

Example

❖ Sales	6000 units
❖ Sales price per unit	Rs. 60=00
❖ Variable cost per unit	Rs.40=00
❖ Fixed costs	Rs. 40000=00

BEP in units

❖ Fixed costs	Rs.40000=00
❖ Contribution per unit	Rs. 20=00 (Rs.60=00 less Rs.40=00)
❖ BEP in units	40000 divided by 20 = 2000 units. 2000 x Rs. 60=00 = Rs. 120,000

BEP in Sales Value

❖ Fixed costs	Rs. 40000=00
❖ Sales	Rs. 360,000=00
❖ Variable costs	Rs. 240,000=00
❖ BEP in sales value	40000 x 360,000 divided by 120,000=Rs.120000/-

Margin of safety

- ❖ Margin of safety = Sales less Breakeven Sales.
- ❖ MOS=6000 – 2000 = 4000 / 66.7 %
- ❖ Conclusion: Even if Sales decrease by 66.7 %, unit will not incur loss.

Conclusion

- ❖ BEP Analysis will help the Banker in appraisal of actual / projected performance of the borrower. It also acts as sensitivity analysis tool to judge the projected performance. It will play supporting role to DSCR.