MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

UNIT-V

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Financial Analysis

Financial analysis is the process of determining the financial strengths and weaknesses of a business by setting the strategic relationship between the items of Financial statements like Trading account, Profit & Loss Account and Balance Sheet.
Meaning of Analysis of Financial Statements:

Financial statement analysis is the procedure of analysing an enterprise's financial statements for making decisions for the purposes and to understand the comprehensive health of an organisation. Financial statements document financial information, which must be evaluated through financial statement analysis to become more helpful to shareholders, managers, investors and other interested parties. To put it in other words, the term 'financial analysis' comprises both 'analysis and interpretation'.

Tools of Analysis of Financial Statements:

The most frequently used tools of financial analysis are as follows:

Comparative Statements: These are the statements depicting the financial position and profitability of an enterprise for the distinct timeframe in a comparative form to give a notion about the position of 2 or more periods. It usually applies to the 2 important financial statements, namely, statement of profit and loss and balance sheet outlined in a comparative form. Comparative figures signify the direction and trend of financial position and operating outcomes. This type of analysis is also referred to as 'horizontal analysis'.

Common Size Statements: Common size statements are the statements which signify the association of distinct items of a financial statement with a generally known item by depicting each item as a % of that common item. Such statements allow an analyst to compare the financing and operating attributes of 2 enterprises of distinct sizes in a similar industry. This analysis is also referred to as 'Vertical analyses.

Cash Flow Analysis: It refers to the analysis of the actual movement of cash into and out of an establishment. The flow of cash into the trading concern is called cash inflow or positive cash flow and the flow of cash out of the enterprise is known as negative cash flow or cash outflow. The difference between the outflow and inflow of cash is the net cash flow. Hence, it compiles the reasons for the changes in the cash position of a trading concern between dates of 2 balance sheets.

Ratio Analysis: It characterizes the vital association which exists between several items of a B/S (balance sheet) and a statement of P&L of an enterprise. As a method of financial analysis, accounting ratios compute the comparative importance of the single items of the position and income statements. It is feasible to evaluate the solvency, efficiency, and profitability of an enterprise via the method of ratio analysis.

Ratio Analysis

Ratio Analysis is a tool of Financial Analysis to analyze the business performance and Position for the given period by comparing items of Financial statements within the year, between the years and with other similar companies.

Uses of Ratio Analysis

(i) Ratios help in analyzing the performance trends over a long period of time.

(ii) They also help a business to compare the financial results to those of competitors.

(iii) Ratios assist the management in decision making.

(iv) They also point out problem and weak areas along with the strength areas.

(v) Ratios to help to develop relationships between different financial statement items.

(vi) Ratios have the advantage of controlling for differences in size. For example, two businesses may be quite different in size but can be compared in terms of profitability, liquidity, etc., by the use of ratios.

Users of Ratio analysis

Ratio Analysis provides information on Performance of a Business to the various interested parties.

(1) Bankers and Lenders: Use profitability, liquidity and investment because they want to know the ability of the borrowing business in regular scheduled interest payments and repayments of principal loan amount.

(2) Investors: Use profitability and investment because they are more interested in profitability performance of business and safety & security of their investment and growth potential of their investment.

(3) Government: Use profitability because government may use profit as a basis for taxation, grants and subsidies.

(4) Employees: Use profitability, liquidity and activity because employees will be concerned with job security, bonus and continuance of business and wage bargaining.

(5) Customers: Use liquidity because customers will seek reassurance that the business can survive in the short term and continue to supply.

(6) Suppliers: Use liquidity because suppliers are more interested in knowing the ability of the business to settle its short-term obligations as and when they are due.

(7) Management: Use all ratios because management is interested in all aspects i.e., both financial performance and financial condition of the business.

Types of Ratios

I Profitability Ratios

Profitability ratios measure the ability of a business to earn profit for its owners. While liquidity ratios and solvency ratios explain the financial position of a business, profitability ratios and efficiency ratios communicate the financial performance of a business. Important profitability ratios include:

1) Gross Profit Ratio: Gross Profit ratio is the ratio of gross profit of a business to its revenue. It is a profitability ratio measuring what proportion of revenue is converted into gross profit (i.e. revenue less cost of goods sold).

Formula

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

2) Net Profit Ratio

Net profit margin (also called profit margin) is the most basic profitability ratio that measures the percentage of net income of an entity to its net sales. It represents the proportion of sales that is left over after all relevant expenses have been adjusted.

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

3) Operating Profit Ratio: It is the ratio of operating income of a business to its revenue. It is profitability ratio showing operating income as a percentage of revenue.

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

4) Earnings per Share (EPS)

Earnings per share (EPS) is a profitability indicator which shows dollars of net income earned by a company in a particular period per share of its common stock (also called ordinary shares). Earnings per share is calculated by dividing net income for a period attributable to common stock owners by the weighted average number of common shares outstanding during the period.

$$\text{EPS} = \frac{\text{Net Profit after Tax}}{\text{Number of equity Shares}}$$

5) Price/Earnings (P/E) Ratio

Price/Earnings or P/E ratio is the ratio of a company's share price to its earnings per share. It tells whether the share price of a company is fairly valued, undervalued or overvalued.

$$\text{Price/Earnings (P/E) Ratio} = \frac{\text{Market Price of Share}}{\text{EPS}}$$

II Liquidity Ratios

Liquidity ratios asses a business's liquidity, i.e. its ability to convert its assets to cash and pay off its obligations without any significant difficulty (i.e. delay or loss of value). Liquidity ratios are particularly useful for suppliers, employees, banks, etc. Important liquidity ratios are:

6) Current Ratio

Current ratio is one of the most fundamental liquidity ratio. It measures the ability of a business to repay current liabilities with current assets.

Current assets are assets that are expected to be converted to cash within normal operating cycle, or one year. Examples of current assets include cash and cash equivalents, marketable securities, short-term investments, accounts receivable, short-term portion of notes receivable, inventories and short-term prepayments.

Current liabilities are obligations that require settlement within normal operating cycle or next 12 months. Examples of current liabilities include accounts payable, salaries and wages payable, current tax payable, sales tax payable, etc.

Formula
Current ratio is calculated using the following formula:

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

Ideal Ratio is 2:1

7) Quick Ratio

Quick ratio (also known as acid test ratio) is a liquidity ratio which measures the dollars of liquid current assets available per dollar of current liabilities. Liquid current assets are current assets which can be quickly converted to cash without any significant decrease in their value. Liquid current assets typically include cash, marketable securities and receivables. Quick ratio is expressed as a number instead of a percentage.

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current Liabilities}}$$

Quick Assets = Total Current Assets- (Stock +Prepaid Expenses)

Ideal Ratio is 1:1

III Activity or Turnover Ratios

Activity ratios assess the efficiency of operations of a business. For example, these ratios attempt to find out how effectively the business is converting inventories into sales and sales into cash, or how it is utilizing its fixed assets and working capital, etc. Key activity ratios are:

8) Inventory Turnover Ratio

Inventory turnover is an efficiency ratio which calculates the number of times per period a business sells and replaces its entire batch of inventories. It is the ratio of cost of goods sold by a business during an accounting period to the average inventories of the business during the period.

Inventory turnover ratio is calculated using the following formula:

$$\text{Inventory Turnover or Stock Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$$

Cost of Goods sold= Sales-Gross Profit
Average stock= (Opening Sock+ Closing Stock)/2

9) Debtors Turnover Ratio

Debtors turnover is the ratio of net credit sales of a business to its average debtors during a given period, usually a year. It is an activity ratio which estimates the number of times a business collects its average debtors balance during a period.

$$\text{Debtors Turnover} = \frac{\text{Net Credit Sales or Sales}}{\text{Average Debtors}}$$

Average Debtors= (Opening Debtors+ Closing debtors)/2

IV Solvency Ratios

Solvency ratios assess the long-term financial viability of a business i.e. its ability to pay off its long-term obligations such as bank loans, bonds payable, etc. Information about solvency is critical for banks, employees, owners, bond holders, institutional investors, government, etc. Key solvency ratios are:

10) Debt-to-Equity Ratio

Debt-to-Equity ratio is the ratio of total liabilities of a business to its shareholders' equity. It is a leverage ratio and it measures the degree to which the assets of the business are financed by the debts(outsider Funds) and the shareholders' equity(Owner Funds) of a business.

Formula
Debt-to-equity ratio is calculated using the following formula:

$$\text{Debt-to-Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

Lower values of debt-to-equity ratio are favorable indicating less risk. Higher debt-to-equity ratio is unfavorable because it means that the business relies more on external lenders thus it is at higher risk, especially at higher interest rates. A debt-to-equity ratio of 1.00 means that half of the assets of a business are financed by debts and half by shareholders' equity. A value higher than 1.00 means that more assets are financed by debt that those financed by money of shareholders' and vice versa.

Solved Problems

Problem 1:

The Trading and Profit and Loss Account and Balance sheet of ABC Ltd. for the year 31-3-2019 is given below: Market Price of the Share is Rs 105

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

Balance sheet As on 31-3-202019

Liabilities	Amount(Rs)	Assets	Amount(Rs)
Equity Share Capital(Face value of Rs 10)	200000	Plant & Machinery	125000
Net Profit	84000	Land & Buildings	175000
Bank Loan	124000	Debtors	160000
Creditors	16000	Cash in hand	10000
Bank Overdraft	100000	Closing Stock	98500
Bills Payable	50000	Prepaid Expenses	1500
	570000		**570000**

Calculate:

1. Gross Profit Ratio 2. Net Profit Ratio 3. Operating Profit Ratio 4.EPS 5. P/E Ratio

6.Stock Turnover Ratio.7 Debtors Turnover and Debt Collection Period 8. Current Ratio 9. Quick Ratio 10.Debt-Equity Ratio

1. Gross Profit Ratio $= \frac{\text{Gross profit}}{\text{Sales}} \times 100$

   $=2,00,000/ 5,00,000 \times 100 = 40\%$

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

=84000/500000× 100 = 16.8%

3. Operating Profit Ratio = $\frac{\text{Operating Profit}}{\text{Sales}} \times 100$

Operating Profit=(Net Profit +Non operating Expenses)- Non operating Incomes

=84000+2000-6000
=80000
Operating Profit Ratio=(80000/500000)*100 = 16%

4. Earnings Per Share(EPS)

$$\text{EPS} = \frac{\text{Net Profit after Tax}}{\text{Number of equity Shares}}$$

=84000/(200000/10)
= Rs 4.2

5. Price-Earnings Ratio

$$\text{Price/Earnings (P/E) Ratio} = \frac{\text{Market Price of Share}}{\text{EPS}}$$

=105/4.2
= 25

6. Stock Turnover ratio or Inventory Turnover = $\frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

Cost of Goods sold= Sales-Gross Profit
Average stock= (Opening Sock+ Closing Stock)/2

=500000-200000/((98500+76250)/2) = 3.43 times

7. Debtors Turnover
= Sales or Credit Sales/Average Debtors
= 500000/((0+160000)/2)
= 6.75 times

Debt-Collection Period = 365 Days/Debtors Turnover
=365/6.75
= 54 days

8. Current Ratio

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

Current Assets= Stock+ Debtors+ Cash in Hand+ Prepaid Expenses
= 98500+160000+10000+1500

=270000

Current Liabilities= Creditors+ Bank Overdraft + Bills Payables
=16000+100000+50000
=1660000

Current Ratio = 270000/166000
= 1.62:1

9.

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current Liabilities}}$$

Quick Assets = Total Current Assets- (Stock +Prepaid Expenses)

Quick Assets= 270000-(98500+1500)
=170000

Quick Ratio= 170000/166000
=1.02:1

10. Debt –Equity Ratio

$$\text{Debt-to-Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

Total Debt= outsider Funds =Bank Loans + any other Long term liabilities
= 124000
Shareholder Equity=
Equity Capital+ Reserves + Net Profit
=200000+84000
=284000

Debt-Equity Ratio= 124000/284000
= 0.44:1

2. **From the following Balance sheet of XY Ltd as on 31-3-2019(It is a Listed Company and Shares are selling at a market price of Rs 24)**

Particular	Rs.	Particular	Rs.
Equity Share Capital (Face Value of Rs 10 Each)	40,000	Plant and Machinery	24,000
Capital Reserve	8,000	Land and Buildings	40,000
8% Loan on Mortgage	32,000	Furniture & Fixtures	16,000
Creditors	16,000	Stock	12,000
Bank overdraft	4,000	Debtors	12,000
Taxation:		Investments (Short-term)	4,000
Current	4,000	Cash in hand	12,000
Future	4,000		
Profit and Loss A/c (Net Profit after Taxes)	12,000		
	1,20,000		1,20,000

Calculate

a) Current ratio b) Quick Ratio c))EPS d) P/E Ratio e)Debt-Equity Ratio

Solution:

a) Current Ratio

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

Current Assets= Stock+ Debtors+ Short term investments+ Cash in Hand

= 12000+12000+4000+12000

=40000

Current Liabilities= Creditors+ Bank Overdraft=Outstanding Expenses

=16000+4000+4000(Current Tax Payable)

=24000

Current Ratio= 40000/24000

= 1.66:1

b)Quick Ratio

$$\text{Quick ratio} = \frac{\text{Quick assets}}{\text{Current Liabilities}}$$

$$\text{Quick Assets} = \text{Total Current Assets- (Stock +Prepaid Expenses)}$$

Q.A = 40000-(12000+0)

=28000

Quick ratio = 28000/24000

=1.16:1

c). EPS(Earning Per Share)

$$\text{EPS} = \frac{\text{Net Profit after Tax}}{\text{Number of equity Shares}}$$

=12000/(40000/10)
= Rs 3

d).P/E Ratio (Price-Earnings Ratio)

$$\text{Price/Earnings (P/E) Ratio} = \frac{\text{Market Price of Share}}{\text{EPS}}$$

=24/3
= 8 times

e) Debt-Equity Ratio

$$\text{Debt-to-Equity Ratio} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

Total Debt(Outsider Funds) = 8% Loan
= Rs32000
Share holder Funds =Equity Capital +Reserves + Net Profits After Tax
= 40000+8000+12000
= 60000
Debt-Equity Ratio =32000/60000
=0.53:1