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محاضرة (12)

FINANCIAL RATIOS ANALYSIS
تحليل النسب المالية

A ratio analysis is a quantitative analysis of information contained in a company's financial statements. Ratio analysis is used to evaluate various aspects of a company's operating and financial performance such as its efficiency, liquidity, profitability and solvency.

- **Classification/Types of Ratios** **تصنيف/ أنواع النسب**
- **Liquidity Ratios/Solvency Ratios** **نسب السيولة/ نسب الملاءة**

- Liquidity ratios refers to the ability of a firm to meet its obligations in short-run, usually, one year.
- Liquidity ratios are generally based on relationship between current assets and current liabilities.
- The important liquidity ratios are :

  (i) Current ratio, نسبة التداول

  (ii) Acid Test Ratio, and نسبة السيولة السريعة

  (iii) Fund Flow Ratio. نسبة التدفق النقدي

- **Activity Ratios (Turnover Ratios)** **نسب النشاط (نسب الدوران)**

- Turnover ratios measure how effectively the assets are employed by the firm.
- These ratios are based on the relationship between level of activity represented by sales or cost of goods sold and levels of various assets.
- The important turnover ratios are :
  1. Inventory Turnover Ratio, نسبة دوران المخزون
  2. Accounts Receivable Turnover Ratio, نسبة دوران الذمم المدينة
  3. Fixed Assets Turnover Ratio, نسبة دوران الموجودات الثابتة
  4. Average Collection Period Ratio, and معدل فترة التحصيل
  5. Total Assets Turnover Ratio. نسبة دوران مجموع الموجودات

- **Profitability Ratios** **نسب الربحية**

- Profitability ratios reflects the final result of business operations.
- There are two types of profitability ratios, i.e.

  (i) Profit Margin Ratios, and نسب هامش الربح

(ii) Rate of Return Ratios. معدل نسب العائد

- Profit margin ratios show the relationship between profit and sales.
- The two popular profit margin ratios are gross profit margin ratio, and net profit margin ratio.

❖ **<u>Solvency Ratios</u>** **نسب الملاءة المالية**

Solvency ratios are also known as "**<u>Liquidity Ratios</u>**".

❖ **<u>Miscellaneous Group Ratios</u>** **نسب المجموعة المتنوعة**

(1) <u>Balance Sheet Ratios</u> **نسب الميزانية العمومية**

These ratios are classified into the following categories, viz. :

i. Current Ratio **نسبة التداول**

Current ratio indicates the solvency of the business, i.e. abilities to meet the liabilities of the business as and when they fall due.

Formula : current ratio = $\frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$

ii. Proprietary Ratio : **نسبة الملكية**

It is primarily the ratio between proprietor's funds and total assets. It indicates the strength of the funding of the company.

Formula: Proprietary Ratio = $\frac{\text{Proprietor's Funds}}{\text{Total Assets}}$

iii. Debt Equity Ratio **نسبة حق المديونية**

- This ratio is calculated to measure the comparative proportions of outsiders funds and shareholders' funds invested in the company.
- The Debt-Equity Ratio indicates how many Dinars have come from borrowings for every Dinar of shareholders' funds.

Formula: Debt Equity Ratio = $\frac{\text{Long−term Debts}}{\text{Shareholders Funds}}$

- A low debt equity ratio indicates that the management of the firm is following a very conservative policy which is quite satisfactory from creditors angle.
- A very high debt equity ratio indicates a risky situation as proportion of borrowed funds is quite high.

(2) Profit and Loss Account Ratios نسب حساب الأرباح والخسائر

These ratios are classified into the following categories, viz.:

i. Net Profit Ratio نسبة صافي الربح

- This ratio shows the earnings left for shareholders (equity and preference) as a percentage of net sales.
- This ratio measures overall efficiency of all the functions of a business firm like production, administration, selling, financing, pricing, tax management etc.
- This ratio is very useful for prospective investors as it reveals the overall profitability of the firm.
- Higher the ratio, the better it is because it gives an idea of overall efficiency of the firm.
- This ratio is calculated as follows :

Formula :

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

Example :

Net Profit : 600,000

Net Sales: 6,000,000

Net Profit Ratio= $\frac{600,000}{6,000,000}$ =10%

ii. Operating Ratio نسبة التشغيل

- Operating Ratio is the relationship between cost of activities and net sales.
- Operating Ratio show at what percentage the operating expenses are comprised in net sales.
- This Ratio is expressed as a percentage.

Formula :

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

(3) Composite Ratios النسب المركبة

These ratios are classified into the following categories, viz. :

i. Return on Capital Employed Ratio : نسبة العائد على راس المال المستخدم

This ratio indicates the percentage of net profits before interest and tax to total capital employed. The capital employed is calculated as follows :

Formula : Capital Employed = Equity Capital (+) Preference Capita! (+) Reserves and Surplus (+) Long-term Borrowings (-) Fictitious Assets.

This ratio is calculated as follows :

Formula :

Return on Capital Employed Ratio $=\frac{\substack{\text{Net Profit before Dividend} \\ \text{interest and Finance Charges}}}{\text{Capital Employed}} \times 100$

- This ratio is considered to be a very important because it reflects the overall efficiency with which capital is used.
- This ratio of a particular business should be compared with other business firms in the same industry to find out the exact position of the business.

ii. Return on Equity Ratio **نسبة العائد على حق الملكية**

- This ratio is also known as Return on shareholders' funds or Return on proprietor's funds or Return on net worth.
- This ratio indicates the percentage of net profit available for equity shareholders. In other words, this ratio measures the return only on equity shareholders' funds and not on total capital employed.

Formula :

Return of Equity $=\frac{\substack{\text{Net Profit after Interest} \\ \text{Income Tax and Prefrence Dividend (if any)}}}{\text{Equity Shareholders Funds}} \times 100$

[Note : Equity Shareholders' Funds = Equity Capital (+) Reserves, retained earnings and Surplus].

This ratio indicates the productivity of the owned funds employed in the firm. However, in judging the profitability of a firm, it should not be overlooked that during inflationary periods, the ratio may show an upward trend because the numerator of the ratio represents current values whereas, the denominator represents historical values.

iii. Price Earnings Ratio **نسبة عوائد (أرباح) السهم**

This ratio is calculated with the help of the following formula :

Formula : Price Earnings Ratio = $\frac{\text{Market Price Per Equity Share}}{\text{EPS}}$

Example : If the share price of a company is 240 and EPS is 40, the P/E ratio will be $\frac{240}{40}$= 6 times. It indicates that the market value of every Dinar of earnings is six times.

iv. Dividend Payout Ratio : نسبة توزيع الأرباح

Dividend payout ratio indicates the percentage of profit distributed as dividends to the shareholders.

- A higher ratio indicates that the organization is following a liberal policy regarding the dividend, while a lower ratio indicates a conservative approach of the management towards the dividend.
- The ratio is calculated as shown below :

Formula :

Dividend Payout Ratio $= \frac{\text{Dividend Per Equity Share}}{\text{EPS}} \times 100$

❖ Project Evaluation تقييم المشروع

The following points highlight the top four methods of project evaluation in a firm. The methods are:

1. **Return of Investment (ROI)** العائد على الاستثمار
2. **Payback Period Method** طريقة فترة الاسترداد
3. **Net Present Value (NPV)** صافي القيمة الحالية
4. **The Internal Rate of Return (IRR).** معدل العائد الداخلي

We will address the method of return on investment as one of the methods of financial analysis. Other methods are the study of financial management.

سوف نتطرق إلى طريقة العائد على الاستثمار باعتبارها من طرائق التحليل المالي أما الطرائق الأخرى فهي من اختصاص دراسة الإدارة المالية .

1. Return of Investment (ROI)

The ratio of profit expected from an investment project and the proposed investment for the project is called Return on Investment (ROI).

This ROI ratio is used as a criterion for the evaluation of an investment project. The greater the ROI of a project, the greater is its acceptability. There are three concepts about the amount of investment on a project. The amount of investment may mean the amount of assets, amount of capital invested, or the amount of equity capital. We may obtain three types of ROI on the basis of these three concepts.

These are:

(i) Return on Assets (ROA) العائد على الموجودات

By definition, ROA is the ratio between net profit and the assets. We may write, therefore,

ROA = net profit excluding taxes ÷ total assets

Here net profit does not include the interest to be paid to the lenders. But, since interest is included in the real return on total assets, an improved form of ROA is:

(ii) Return on Capital Employed (ROCE) **العائد على راس المال المستخدم**

ROA = (net profit excluding taxes+ interest paid) ÷ total assets

ROCE is the second type of ROI. Here net profit, excluding tax, is expressed as a ratio of the total amount of invested capital. The total amount of capital provided by the owner of the firm and the lenders is the total invested capital in this case.

We may have this estimate of capital in two ways

- **First**, the total amount of invested capital is the sum total of long-term liabilities and equity of the shareholders.
- **Second,** invested capital is the summation of the net circulating capital and fixed assets. Therefore, we may write here:-

$$\text{ROCE}= \frac{\textbf{net profit minus tax}}{\textbf{total investment capital}}$$

Add the interest paid in net profit and write:

$$\text{ROCE} = \frac{\textbf{net profit minus tax+interest paid}}{\textbf{total invested capital}}$$

(iii) Return on Shareholders' Equity (ROSE) **العائد على حقوق المساهمين**

By definition, a general estimate of ROSE is:

$$\text{ROSE} = \frac{\textbf{net profit minus tax}}{\textbf{total equity of the shareholders}}$$

Now the shares of a company may be of two types: preference shares and ordinary shares. Here, if the shares are ordinary shares, then we may write:

$$\text{ROSE} = \frac{\textbf{net profit minus tax} - \textbf{dividend paid to perference shareholders}}{\textbf{equity of the ordinary shareholders}}$$

We may mention here two more measures of the rate at which the owners of ordinary shares may obtain return from their company. These two rates of return are **"earning per share"** (EPS) and **"dividend per share"** (DPS).

By definition, we have:-

$$\text{EPS} = \frac{\textbf{net profit minus tax} - \textbf{dividend paid to perference shareholders}}{\textbf{number of ordinary shares}}$$

$$\text{DPS} = \frac{\textbf{dividend paid to the owners of ordinary shares}}{\textbf{number of ordinary shares}}$$

It may be noted here that the share owners may earn at the rate of EPS only when the company actually distributes all the money equal to the numerator of the formula for EPS among the shareholders.

Exercise Solved

The following are the summarized Profit and Loss A/c and Balance Sheet of Zane Ltd. for

Dr. Profit and Loss Account Cr.

Particulars	IQD	**Particulars**	IQD
To Opening Stock	99,000	By Sales	950,000
To Purchases	545,000	By Closing Stock	150,000
To Freight Inward	16,000		
To Gross Profit	440,000		
	1,100,000		**1,100,000**
To Operating Expenses	200,000	By Gross Profit	440,000
To Loss on Sale of Asset	40,000	By Non-operating income	60,000
To Net Profit	260,000		
	500,000		**500,000**

Balance Sheet

Liabilities	IQD	**Assets**	IQD
Share Capital	200,000	Land and Building	150,000
Reserve and Surplus	260,000	Plant and Machinery	180,000
Bills Payable	40,000	Stocks	150,000
Other Current Liabilities	90,000	Debtors	45,000
		Bills Receivable	5,000
		Cash & Bank	60,000
	590,000		**590,000**

Requirement: Calculate the following:

1. Gross Profit Ratio.
2. Operating Profit Ratio.
3. Return on Capital Employed.
4. Stock Turnover Ratio.
5. Debtors Turnover Ratio.
6. Current Ratio.
7. Sales to Fixed Assets Ratio.
8. Net Profit to Fixed Assets Ratio.
9. Sales to Capital Employed Ratio.
10. Turnover to Total Assets Ratio.

Solution :

(1) Gross Profit Ratio $= \frac{\text{G.P}}{\text{Sales}} \times 100$

$$= \frac{440{,}000}{950{,}000} \times 100$$

$$= 46.32\ \%$$

(2) Operating Profit Ratio $= \frac{\text{Operating Profit}}{\text{Sales}} \times \mathbf{100}$

$$= \frac{240{,}000}{950{,}000} \times 100$$

$$= 25.26\%$$

(3) Return on Capital Employed $= \frac{\text{Net Profit}}{\text{Capital Employed}} \times \mathbf{100}$

$$= \frac{260{,}000}{460{,}000\ (200{,}000 + 260{,}000)} \times 100$$

$$= 56.52\%$$

(4) Stock Turnover Ratio $= \frac{\text{Cost of Goods Sold}}{\text{Average Stock}}$

$$= \frac{510{,}000}{124{,}500}$$

$$= 4.096$$

(5) Debtors Turnover Ratio $= \frac{\text{Credit Sales}}{\text{Average Debtors (+) Average Bills Receivable}}$

$$= \frac{950{,}000}{45{,}000 + 5{,}000}$$

$$= \frac{950.000}{50{,}000}$$

$$= 19$$

(6) Current Ratio $= \frac{\text{Current Assets}}{\text{Current Liabilities}}$

$$= \frac{260{,}000\ (150{,}000 + 45{,}000 + 5{,}000 + 60{,}000)}{130{,}000 (40{,}000 + 90{,}000)}$$

$$= 2{:}1$$

(7) Sale to Fixed Assets Ratio $= \frac{\text{Sales}}{\text{Fixed Assets}}$

$$= \frac{950{,}000}{330{,}000}$$

$$= 2.88 \text{ Times}$$

(8) Net Profit to Fixed Assets Ratio $= \frac{\text{N.P}}{\text{Fixed Assets}} \times \mathbf{100}$

$$= \frac{260{,}000}{330{,}000} \times 100$$

$$= 78.79\%$$

(9) Sales to Capital Employed Ratio $= \frac{\text{Sales}}{\text{Capital Employed}}$

$$= \frac{950{,}000}{460{,}000}$$

$$= 2.06$$

(10) Turnover to Total Assets Ratio $= \frac{\text{Sales}}{\text{Total Assets}}$

$$= \frac{950{,}000}{590{,}000}$$

$$= 1.61 \text{ Times}$$