ACMP

Lecture-2 (Session-2)

Financial Statement Analysis: Ratio Analysis Technique

BASICS OF FINANCIAL STATEMENT ANALYSIS

- Three characteristics of a company:
  1) liquidity
  2) profitability
  3) solvency
- In order to obtain information as to whether the amount:

1) represents an increase over prior years or
2) is adequate in relation to the company's need for cash, or
3) the amount of cash must be compared with other financial statement data.

RATIO ANALYSIS

- **Ratio analysis** expresses the relationship among selected items of financial statement data.
- A **ratio** expresses the mathematical relationship between one quantity and another.
- A single ratio by itself is not very meaningful, in the upcoming illustrations we will use:

1) **Intracompany comparisons** for two years for the Quality Department Store.
2) **Industry average comparisons** based on median ratios for department stores from Dun & Bradstreet and Robert Morris Associates' median ratios.
3) **Intercompany comparisons** based on the Sears, Roebuck and Co., as Quality Department Store's principal competitor.

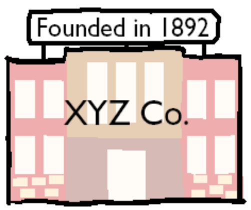
FINANCIAL RATIO CLASSIFICATIONS

Liquidity Ratios

Measures of short-term ability of the enterprise to pay its maturing obligations and to meet unexpected needs for cash

Profitability Ratios

Measures of the income or operating success of an enterprise for a given period of time



Solvency Ratios

Measures of the ability of the enterprise to survive over a long period of time

CURRENT RATIO

- The current ratio (working capital ratio) is a widely used measure for evaluating a company's liquidity and short-term debt-paying ability.
- It is computed by dividing current assets by current liabilities and is a more dependable indicator of liquidity than working capital.
- The current ratios for Quality Department Store and comparative data are shown below.

$$\text{CURRENT RATIO} = \frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}}$$

ACID-TEST (Quick) RATIO

- The acid-test ratio (quick ratio) is a measure of a company's short-term liquidity.
- It is computed by dividing the sum of cash, marketable securities, and net receivables by current liabilities.
- The acid-test ratios for Quality Department Store and comparative data are on the next slide.

$$\text{ACID-TEST RATIO} = \frac{\text{CASH + MARKETABLE SECURITIES + RECEIVABLES (NET)}}{\text{CURRENT LIABILITIES}}$$

RECEIVABLES TURNOVER

- The receivables turnover ratio is used to assess the liquidity of the receivables.
- It measures the number of times, on average, receivables are collected during the period.
- The ratio is computed by dividing net credit sales by average net receivables.

$$\text{RECEIVABLES TURNOVER} = \frac{\text{NET CREDIT SALES}}{\text{AVERAGE NET RECEIVABLES}}$$

INVENTORY TURNOVER

- The inventory turnover ratio measures the number of times, on average, the inventory is sold during the period.
- Its purpose is to measure the liquidity of the inventory. It is computed by dividing cost of goods sold by average inventory during the year.

$$\text{INVENTORY TURNOVER} = \frac{\text{COST OF GOODS SOLD}}{\text{AVERAGE INVENTORY}}$$

PROFIT MARGIN

- The profit margin ratio is a measure of the percentage of each dollar of sales that results in net income.
- It is computed by dividing net income by net sales.

$$\text{PROFIT MARGIN ON SALES} = \frac{\text{NET INCOME}}{\text{NET SALES}}$$

ASSET TURNOVER

- **Asset turnover measures how efficiently a company uses its assets to generate sales.**
- **It is determined by dividing net sales by average assets.**

$$\text{ASSET TURNOVER} = \frac{\text{NET SALES}}{\text{AVERAGE ASSETS}}$$

RETURN ON ASSETS

An overall measure of profitability is **return on assets.** It is computed by dividing **net income** by **average assets for the period.**

$$\text{RETURN ON ASSETS} = \frac{\text{NET INCOME}}{\text{AVERAGE ASSETS}}$$

RETURN ON COMMON STOCKHOLDERS' EQUITY

- A ratio that measures profitability from the viewpoint of the common stockholder is **return on common stockholders' equity.**
- It is computed by dividing **net income** by **average common stockholders' equity**.

$$\text{RETURN ON COMMON STOCKHOLDERS' EQUITY} = \frac{\text{NET INCOME}}{\text{AVERAGE COMMON STOCKHOLDERS' EQUITY}}$$

RETURN ON COMMON STOCKHOLDERS' EQUITY WITH PREFERRED STOCK

- When preferred stock is present, preferred dividend requirements are deducted from net income to compute income available to common stockholders.
- The par value of preferred stock (or call price – if applicable) must be deducted from total stockholders' equity to determine the amount of common stockholders' equity used in this ratio. The ratio then appears as shown below.

$$\text{RATE OF RETURN ON COMMON STOCKHOLDERS' EQUITY} = \frac{\text{NET INCOME – PREFERRED DIVIDENDS}}{\text{AVERAGE COMMON STOCKHOLDERS' EQUITY}}$$

EARNINGS PER SHARE

- **Earnings per share (EPS)** is a measure of net income earned on each share of common stock.
- It is calculated by dividing **net income** by the number of **weighted average common shares outstanding during the year**.

$$\text{EARNINGS PER SHARE} = \frac{\text{NET INCOME}}{\text{WEIGHTED AVERAGE COMMON SHARES OUTSTANDING}}$$

PRICE-EARNINGS RATIO

- **The price-earnings (PE) ratio measures the ratio of the market price of each share of common stock to the earnings per share.**
- **It is computed by dividing the market price per share of common stock by earnings per share.**

$$\text{PRICE-EARNINGS RATIO} = \frac{\text{MARKET PRICE PER SHARE OF COMMON STOCK}}{\text{EARNINGS PER SHARE}}$$

DEBT TO TOTAL ASSETS

- The **debt to total assets ratio** measures the percentage of total assets provided by creditors.
- It is computed by dividing **total debt** by **total assets.**

$$\text{DEBT TO TOTAL ASSETS} = \frac{\text{TOTAL DEBT}}{\text{TOTAL ASSETS}}$$

TIMES INTEREST EARNED

Times interest earned provides an indication of the company's ability to meet interest payments as they come due. It is computed by dividing income before income taxes and interest expense by interest expense.

$$\text{TIMES INTEREST EARNED} = \frac{\text{INCOME BEFORE INCOME TAXES AND INTEREST EXPENSE}}{\text{INTEREST EXPENSE}}$$

Analysis of Liquidity

- Current Ratio=CA/CL

- Quick Ratio (Acid Test)=[CA-(Inv.+Prep. Exp.)]/CL

Analysis of Profitability

- Net Profit (NP) Margin=(Net Income/Net Sales)*100
- Return on Asset (RoA)=(NI/Av. Total Asset)*100
- Return on Investment (RoI)=NI/[Av. (LTL+OE)]*100
- Return on Equity (RoE)=(NI/Av. OE)*100

*TA=CL+LTL+OE

Analysis of Activity/Efficiency

- Asset Turnover= Net Sales/(Av.) Total Assets=Assets Utilization Efficiency
- Inventory Turnover=Total COGS/(Av.) Inventory=Selling Efficiency
- Accounts Receivable Turnover=Total Sales/(Av.) AR=Collection Efficiency

Analysis of Solvency/Leverage

- Debt (Liabilities) to Total Asset Ratio=Total Liability/Total Asset

- Debt-Equity Ratio=Total Liability/Total Equity

Other Ratios

- Interest Coverage (Times Interest Earned) Ratio = NOI or EBIT/Interest Expense

- Earning Per Share (EPS)=Net Income/No. of Shares

- Price-Earning (P/E) Ratio=Market Price per Share/EPS