

# ANALYSIS OF FINANCIAL STATEMENTS

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# Analysis of Financial Statements

- Analysis of the financial statements include:
  1. Comparison of the firm's performance with other same firms
  2. Evaluation of the tendency of the company's financial position at all times
- Benefit analysis of the financial statements:
  1. From an investor's standpoint, to predict the conditions and prospects of the company in the future
  2. From the management's standpoint, to assist planning managerial actions that will determine the firm's future performance
  3. From the creditor's standpoint, to help determine the feasibility of providing loans

# Analysis of Financial Statements

- Financial statement analysis generally begins with a set of financial ratios because:
  1. Financial ratios designed to reveal the strengths / weaknesses of a firm compared to other firms in the same industry
  2. Financial ratios can indicate improved /deteriorated financial position during certain periods.

# Liquidity Ratios

- Liquidity ratios are ratios that show the relationship of a firm's cash and other current assets to its current liabilities.
- A liquid asset is an asset that can be converted to cash quickly without having to reduce the asset's price very much.
- Types of liquidity ratios:

1) Current ratio

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

2) Quick test/ acid test ratio

$$\text{Quick or Acid Test Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

# Asset Management Ratios

- The asset management ratios measure how effectively the firm is managing its assets.
- These ratios are designed to answer this question: Does the total amount of each type of assets as reported on the balance sheet seem reasonable, too high or too low in view of current and projected sales level?
- Types of asset management ratios:

1) Inventory turnover ratio

$$\text{Inventory Turnover Ratio} = \frac{\text{Sales}}{\text{Inventories}}$$

2) *Days sales outstanding* (DSO)

$$\text{DSO} = \frac{\text{Receivables}}{\text{Average Sales Per Day}} = \frac{\text{Receivables}}{\text{Annual Sales}/360}$$

# Asset Management Ratios

## 3) Fixed assets turnover ratio

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Net fixed assets}}$$

## 4) Total assets turnover ratio

$$\text{Total Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Total Assets}}$$

# Debt Management Ratios

- Debt management ratios reveal (1) the extent to which the firm is financed with debt and (2) its likelihood of defaulting on its debt obligations.
- The extent to which a firm uses debt financing or financial leverage has three important implications:
  1. By raising funds through debt, stockholders can maintain control of a firm without increasing their investment.
  2. Creditors look to the equity, or owner-supplied funds, to provide a margin of safety, so the higher the proportion of total capital provided by stockholders, the less the risk faced by creditors.
  3. If the firm earns more on investments financed with borrowed funds than it pays on interest, the return on the owner;s capital is magnified or “leveraged”.

# Debt Management Ratios

- Types of debt management ratios:

1) *Debt ratio*

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

2) Times-interest-earned ratio

$$\text{Times Interest Earned} = \frac{\text{EBIT}}{\text{Interest Charges}}$$

3) EBITDA coverage ratio

$$\text{EBITDA Cov. Ratio} = \frac{\text{EBITDA} + \text{Lease Payments}}{\text{Interest} + \text{Principal Payments} + \text{Lease Payments}}$$

# Profitability Ratios

- Profitability ratios show the combined effects of liquidity, asset management and debt on operating results.
- Types of profitability ratios:
  - 1) Profit margin on sales ratio

$$\text{Profit Margin on Sales} = \frac{\text{Net income available to common stockholder}}{\text{Sales}}$$

# Profitability Ratios

## 2) Basic Earning Power Ratio

$$\text{Basic Earning Power} = \frac{\text{EBIT}}{\text{Total Assets}}$$

## 3) Return on Total Assets

$$\text{ROA} = \frac{\text{Net income available to common stockholders}}{\text{Total Assets}}$$

## 4) Return on Common Equity

$$\text{ROE} = \frac{\text{Net income available to common stockholders}}{\text{Common Equity}}$$

# Market Value Ratios

- The market value ratios relates the firm's stock price to its earnings, cash flow, and book value per share.
- These ratios give management an indication of what investors think of the company's past performance and future prospects.
- Types of market value ratios:
  - 1) Price/Earnings (P/E) Ratio

$$\text{PER} = \frac{\text{Price per share}}{\text{Earnings per share}}$$

## 2) Price/Cash Flow Ratio

$$\text{Price/cash flow} = \frac{\text{Price per share}}{\text{Cash flow per share}}$$

# Market Value Ratios

## 3) *Market/Book Ratio*

$$\text{M/BRatio} = \frac{\text{Market price per share}}{\text{Book value per share}}$$

## *Trend Analysis*

- Trend analysis where one plots a ratio over time is important because it reveals whether the firm's condition has been improving or deteriorating over time.
- Common size analysis and percentage change analysis are two other techniques that can be used to identify trends in financial statements. In a common size analysis, all income statements items are divided by sales and all balance sheet items are divided by total assets.
- The advantage of common size analysis is that it facilitates comparisons of balance sheets and income statements over time and across companies.
- In percentage change analysis, growth rates are calculated for all income statements and balance sheet accounts.

# Du Pont Equation

- The Du Pont system is designed to show how the profit margin on sales, the assets turnover ratio and the use of debt interact to determine the rate of return on equity.
- The firm's management can use the Du Pont system to analyze ways of improving performance
- Du Pont Equation:

$$ROA = (Profit\ margin)(Total\ Assets\ Turnover)$$

$$= \frac{Net\ income}{Sales} \times \frac{Sales}{Total\ Assets}$$

$$ROE = (ROA)(Equity\ Multiplier)$$

$$= \frac{Net\ income}{Total\ Assets} \times \frac{Total\ Assets}{Common\ Equity}$$

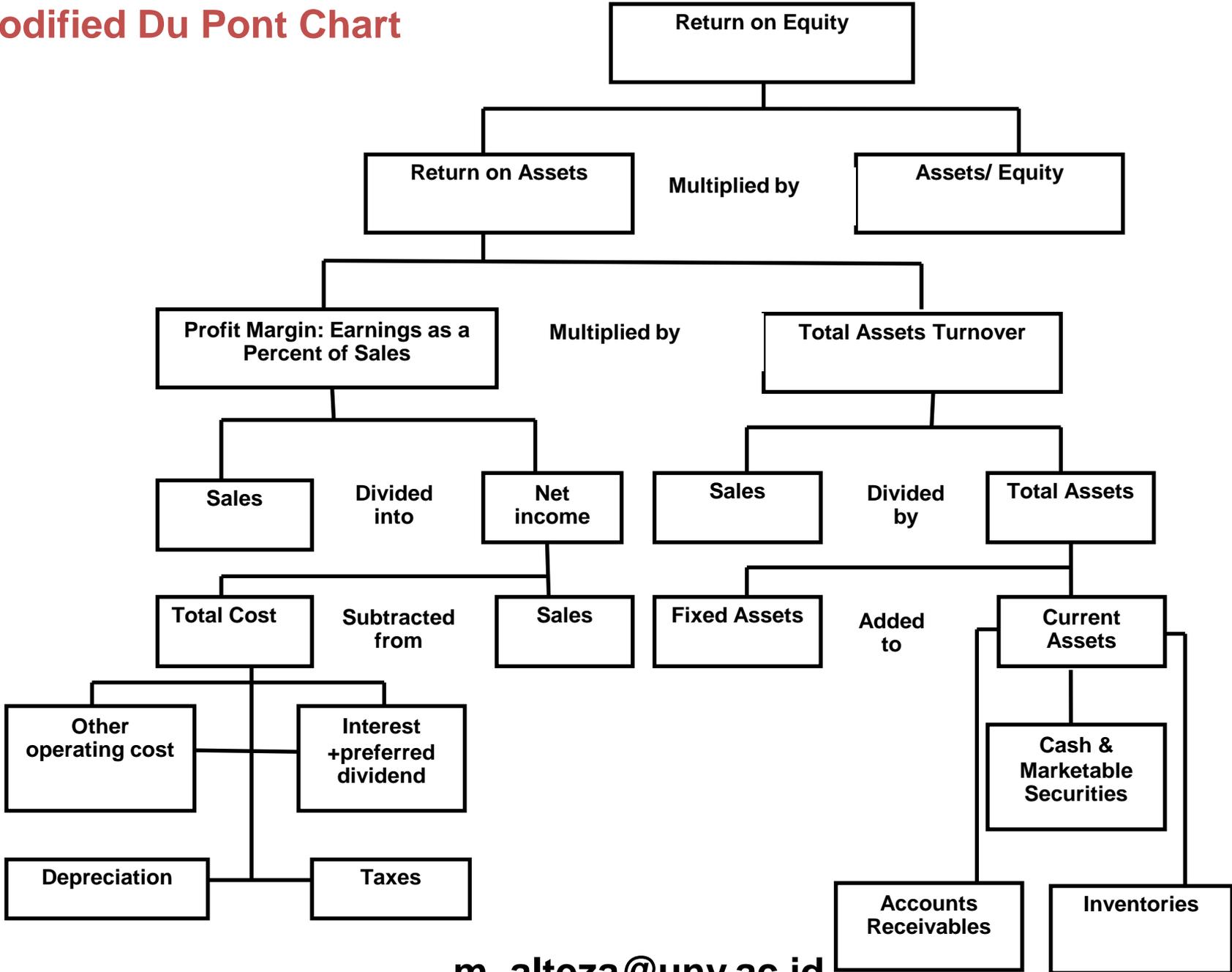
# Du Pont Equation

- Extended Du Pont equation, shows how the profit margin, the assets turnover ratio and the equity multiplier combine to determine ROE:

$$ROE = (\textit{Profit margin})(\textit{Total Assets Turnover})$$
$$(\textit{Equity Multiplier})$$

$$= \frac{\text{Net income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Common Equity}}$$

# Modified Du Pont Chart



# Limitations of Ratio Analysis

- Comparison with industry averages is difficult if the firm operates many different divisions.
- “Average” performance not necessarily good.
- Inflation may have badly distorted firm’s balance sheet- recorded values are often substantially different from “true” values.
- Seasonal factors can distort ratios.
- “Window dressing” techniques can make statements and ratios look better.
- Different operating and accounting practices distort comparisons.
- Sometimes hard to generalize if a particular ratio is “good” or “bad.”
- Difficult to tell whether company is, on balance, in strong or weak position.

# Note: Looking Beyond the Numbers

- Understanding and interpreting accounting numbers are necessary when making business decisions, evaluating performance and forecasting likely future developments.
- Sound financial analysis involves more than just calculating numbers—good analysis requires certain factors that can be considered when evaluating a company. These factors include the following:
  1. Are the company's revenues tied to one key customer?
  2. To what extent are the company's revenues tied to one key product?
  3. To what extent does the company rely on a single supplier?
  4. What percentage of the company's business is generated overseas?
  5. Competition
  6. Future prospects.
  7. Legal and regulatory environment.