

Lecture 11 Financial Statement Analysis

- Explain the purpose & limitations of financial ratio analysis

1. Financial Statement Analysis (FSA)

- Using financial statements to evaluate an entity's financial performance and position
- Financial Statement Analysis: Accounting numbers
- Comparison: Previous years? Competitors? Other factors?
- Who is it for:
 - Creditors and Shareholders: Providers of "capital"
 - Managers: Performance evaluation
 - Regulators: Compliance with standards
 - Customers
 - Suppliers
- 'Common Size' Financial Statements
 - Balance Sheet items as a % of Total Assets
 - Income Statement items as a % of Sales Revenue

	2012	% of Sales	2013	% of Sales
Sales Revenue	200,000	100%	300,000	100%
COGS	(80,000)	40%	(120,000)	40%
Gross Profit	120,000	60%	180,000	60%
Expenses	60,000	30%	90,000	30%
Net Profit	60,000	30%	90,000	30%

	2012	% of TA	2013	% of TA
Cash	20,000	67%	30,000	67%
AR	10,000	33%	15,000	33%
Total Assets	30,000	100%	45,000	100%
AP	10,000	33%	15,000	33%
Borrowings	10,000	33%	15,000	33%
Total Liabilities	20,000	67%	30,000	67%
Net Assets	10,000	33%	15,000	33%
Equity	10,000		15,000	

2. Ratio Analysis

Performance ratios: aim to give the user some indication of the company's record of generating profits and its potential for generating profits in the future	Examples: <ul style="list-style-type: none"> Return on equity Profit margin Earnings per share Return on assets Gross margin Cash flow to total assets <p>These ratios should exceed zero (positive return- as high as possible). Values of these ratios general range between 5-20%.</p>
Activity (Turnover) ratios: aim to give the user some indication of the company's operations in certain areas	Examples: <ul style="list-style-type: none"> Total asset turnover Inventory turnover Debtors turnover

<p>Liquidity ratios: aim to give the user some indication of the company's ability to pay its short term debts as they fall due</p>	<p><i>Examples:</i></p> <ul style="list-style-type: none"> • Current ratio • Quick ratio <p>Remember, a company may be forced into liquidation if it can't pay its short term debts (even though it might be profitable in the long term)</p>
<p>Financial structure ratios: measure the ability of the company to continue operations in the long term</p>	<p><i>Examples:</i></p> <ul style="list-style-type: none"> • Debt/equity ratio • Debt/assets ratio • Leverage ratio

✧ Relationships between ratios;

- *Activity (turnover) ratios are related to liquidity ratios*
- *Performance ratios are related to financing ratios*
- *Performance ratios are related to activity (turnover) ratio*

Calculate and interpret the key financial ratios.

1.Return on Equity: Rate of return on the amount of shareholders' equity	$\frac{\text{Operating Profit After Tax}}{\text{Share Holders Equity}}$	How much return the company is generating on the shareholders' investment
1.Return on Assets: Ability to earn on the company's assets	$\frac{\text{Operating Profit After Tax}}{\text{Total Assets}}$	Assessing the effectiveness of asset utilisation.
1.Profit Margin: How much of sales revenue ends up as profit.	$\frac{\text{Operating Profit After Tax}}{\text{Sales Revenue}}$	<ul style="list-style-type: none"> -Percentage of sales revenue that ends up as profit. -Profit margin gives some indication of pricing strategy or competition intensity in the industry.
1.Gross Margin: Measure profitability in buying (or manufacturing) and selling goods before other expenses are covered.	$\frac{\text{Gross Profit}(\text{Sales} - \text{COGS})}{\text{Sales Revenue}}$	Gross Margin provides a further indication of the company's product pricing and product mix.
1.Earnings per Share	$\frac{\text{Operations Profit after Tax}-\text{Preference Share Dividend}}{\text{Average Number of Ordinary Shares Outstanding}}$	
2.Asset Turnover: Company's ability to use its assets to generate sales	$\frac{\text{Sales}}{\text{Total Assets}}$	<ul style="list-style-type: none"> -Indication of operating efficiency -How much sales is associated with a dollar of assets?
2. Inventory Turnover/Days in Inventory: Number of times inventory is sold during the year	$\frac{\text{COGS}}{\text{Inventory}}$	<ul style="list-style-type: none"> -Efficiency of inventory management -Low turnover? • Risking obsolescence or deterioration in inventory etc
2. Debtors Turnover or Days in Debtors: Proportion of Credit Sales on Accounts Receivable.	$\frac{\text{Credit Sales}}{\text{Accounts Receivable}}$	Efficiency of the company to collect the amount due from debtors.
3. Current Ratios: indicate whether a company has enough short-term assets to cover its short-term liabilities?	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	<ul style="list-style-type: none"> -Enough CA to pay off CL? If too high or low -Recall Working capital = Current Assets – Current Liabilities -Acceptable range for Current Ratio?

3. Quick Ratios: Similar to Current Ratio, Current Assets without 'Inventory' o Why? Inventory needs to be sold!	$\frac{\text{Cash} + \text{Accounts Receivable} + \text{Short term investment}}{\text{Current liabilities}}$	
4. Debt-to-Equity Ratio: A measure of the proportion of borrowings to owner's investment	$\frac{\text{Total Liabilities}}{\text{Total Shareholders' Equity}}$	Indicates the company's policy regarding financing of its assets • >1, the assets are financed mostly with liabilities • Too high ratio is a warning about risk.
4. Debt-to-Assets Ratios: Indicates the proportion of assets financed by liabilities.	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$	The higher the ratio, the greater risk will be associated with the firm's operation.
4. Leverage Ratio: A measure of how much of assets is financed by equity	$\frac{\text{Total Assets}}{\text{Total Shareholders' Equity}}$	The higher the ratio, the smaller the proportion of total assets funded by equity; the higher the proportion of assets funded by debt.

3.Limitations of Ratio Analysis

-Ratios need be considered in the context of:

- Industry averages
- Past records
- Business strategy
- General market conditions
- 'Abnormal' situations

-Based on accounting numbers in Financial Statements

- Past, historical information
- Year-end information
- Different companies use different measurements
- Not all information recognised on the B/S and I/S?

-Ensuring financial reporting quality – as part of Corporate Governance

4.Impact of Transactions on Ratios-An example

Quick Ratio	Cash + AR + Short term Investments / Current Liab.	2.5/2 (1.25)
Debt-to-Assets	Total Liabilities/Total Assets	2/3 (0.67)
Current Ratio	Current Assets/Current Liabilities	3/2 (1.5)

-What if both numerator and denominator increase by the same amount?

- If both numerator and denominator increase by the same amount, that you need to look at the initial ratio. For example:
 - If the Initial ratio is 2/3, i.e., 0.67, and both numerator and denominator increase by 1, -> (2+1)/ (3+1) =3/4=0.75-> Higher

- If the Initial ratio is $\frac{3}{2}$, i.e., 1.5, and both numerator and denominator increase by 1, $\rightarrow \frac{(3+1)}{(2+1)} = \frac{4}{3} = 1.33 \rightarrow$ Lower
- Similarly, if both numerator and denominator decrease by the same amount, then you need to look at the initial ratio.