UniSA

BUSINESS ENTERPRISE

Accounting for decision making

Topic 3
Ratios & Financial Analysis

Goals for this Topic…

1. Understand the objectives of financial statement analysis;

2. Understand the various approaches to financial statement analysis;

3. Appreciate the value of analysing financial statements and ratios over time and in comparison with relevant industry and competitor benchmarks;

4. Analyse financial statements by considering overall performance, profitability, investment utilisation, solvency and liquidity, and dividend policy;

5. Calculate the ratios widely used in financial statement analysis; and,

6. Understand the limitations of financial ratio analysis.

Who is this man & what has he got to do with financial analysis?

In broad terms, financial statement analysis…

Helps determine the extent to which the organisation is:

- achieving its objectives;
- operating efficiently;
- capable of continuing to provide goods and services in the future; and
- using its resources in the manner that was intended.

...and in particular...

- ✓ How profitable is the business?
- ✓ What are its major sources of revenue (and has revenue been increasing or decreasing)?
- ✓ What are the major expenses of this business (and have expenses been increasing or decreasing)?

- ✓ To what extent has the business invested in assets and how were they funded?
- ✓ How well does the business manage its assets to earn a profit and build value?
- ✓ How exposed is the business to debt?
- ✓ How liquid is the business, that is does it have the access to the cash it needs to meet its imminent commitments?
- ✓ What are the major (financial) strengths and weaknesses of the business?
- ✓ Is there any evidence of existing or emerging problems?

Approaches to financial statement analysis

What are we looking at?

- Trends over time
- How we compare with similar organisations
- How we relate to the industry

How?

- Overview of financial statements
- "Horizontal" analysis
- "Vertical" analysis
- Financial ratio analysis

Overview of financial statements

- "Eyeball" the key financial statements:
  - Balance Sheet
  - Income Statement
  - Cash Flow Statement

- What stands out?

- What are the trends?

- Are there any patterns?

"Horizontal" analysis

- A technique that enables the identification of trends in specific financial statement items over a period of time –
- Place Balance Sheet and Income Statements from previous years, 'side-by-side'
- Comparison with previous years
- Explains where the organisation has come from and enables some prediction of the future.

What's the story?

For example, items from the Balance Sheet of XYZ Company for the past three years are as follows:

	2011 ($'000)	2012 ($'000)	2013 ($'000)
Cash	100	120	150
Accounts Receivable	50	40	30
Inventory	60	80	100

And again…

Items from the Income Statement of XYZ Company for the past five years are as follows:

	2009	2010	2011	2012	2013
	$'000	$'000	$'000	$'000	$'000
Sales	100	110	120	80	60
Cost of Goods Sold	30	40	45	47	50
Wages & Salaries	35	55	30	33	40

What is this telling us?

Example of Horizontal Analyses

Horizontal Analysis

	Operating Profit/Loss ($m)		Change		Operating Profit/Loss ($m)		Change	
	2012	2011	$m	%	2013	2012	$m	%
Supermarkets	2164.8	1835.1	329.7	17.97%	2444	2164.8	279.2	12.90%
Big W	161.2	138.6	22.6	16.31%	200.2	161.2	39	24.19%
Consumer Electronics	63.1	66.8	-3.7	-5.54%	50.8	63.1	-12.3	-19.49%
Hotels	215.1	183.7	31.4	17.09%	218	215.1	2.9	1.35%
Wholesale	4.3	2.5	1.8	72.00%	4.3	4.3	0	0.00%

Trend Analysis

Supermarkets	**Trend**	**2013**	**2012**	**2011**
Operating Profit (Loss)	Favourable	133	118	100
Big W				
Operating Profit (Loss)	Favourable	144	116	100
Consumer Electronics				
Operating Profit (Loss)	Unfavourable	76	94	100
Hotels				
Operating Profit (Loss)	Favourable	119	117	100
Wholesale				
Operating Profit (Loss)	Steady	172	172	100

"Vertical" analysis

- A base item and a base amount is selected and all other items are calculated as a proportion of this base amount

- This can help us to consider the significance of the various components of the balance sheet or income statement.

What's the story?

For example, items from the Balance Sheet of ABC Company for 2013 are as follows:

	$	%
Total Assets	400	100
Cash	40	10
Accounts Receivable	80	20
Inventory	120	30
Plant & Equipment	160	40

And again…

Items from the Income Statement of ABC Company for 2013 are as follows:

	$	%
Sales	300	100
Cost of Goods Sold	90	30
Gross Profit	210	70
Wages	105	35
Rent	30	10
Marketing Expenses	30	10

What is this telling us?

Example of vertical analysis

VERTIGO ENTERPRISES *Income Statement*		
	$	***% relative to income***
Total income	323 800	**100**
Expenses		
Cost of sales	140 000	**43**
Advertising expense	30 000	9
Insurance expense	15 000	5
Rent expense	24 000	7
Utilities expense	1 800	1
Depreciation	12 000	4
Wages and salaries	60 000	**19**
Interest expense	4 500	1
Total expenses	**287 300**	**89**
Net profit	**$36 500**	**11**

Benchmarking & Industry Averages…

NHPPD	Hospital A	Hospital B	Hospital C	INDUSTRY
Medical	3.2	2.2	1.9	2.1
Surgical	6.8	5.3	5.7	5.8
Maternity	2.6	1.4	2.1	1.8

BUT…

Financial Ratios…

- Most frequently used tool
- Represents the relationship of one financial statement item to another
- Use as a basis of evaluation, comparison and prediction
- The advantage of ratios is that they bring the numbers, being expressed as ratios, down to a convenient scale.

Why use ratios?

Need to make comparisons:

- against previous periods
- across divisions
- against the forecast
- organisations in the same industry
- organisations in a different industry

Which ratios?

- Different analysts use different ratios or define them differently

- Important to use and measure them consistently

The important part ...

- Not analysis - the calculation of ratios - but interpretation
- What are the strengths and weaknesses?
- What are the trends?
- What is it telling us?

ROI - The Measure of Performance

- The basic measure for calculating RoA is...

$$\frac{\text{EBIT}}{\text{Total Assets}}$$

(Earnings before Interest and Taxes)

(The sum of fixed, current and intangible assets)

- RoA can be divided into its two components as follows...

$$\text{RoA} = \frac{\text{EBIT}}{\text{Total Assets}} = \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}}$$

Profitability Performance

Asset Performance

Profitability performance

To improve profitability...

$$\frac{\text{EBIT}}{\text{SALES}}$$

Maintain expenses and increase sales

Reduce expenses and keep sales constant

Asset performance

To improve Asset performance...

$$\frac{\text{SALES}}{\text{TOTAL ASSETS}}$$

Increase sales whilst maintaining the total amount of assets required to generate sales

Maintain sales but reduce the level of assets required to generate these sales

Improving ROI

- ROI = profit margin x asset turnover

- Profit Margin
  - increase selling price
  - increase volume
  - decrease expenses

- Asset Turnover
  - increase sales revenue
  - reduce invested capital

Advantages of ROI

- Makes managers consider not only profits but the assets invested to produce them

- Can compare performance of divisions of different sizes as using a common measure in percentages

Limitations of ROI

- Short term focus, e.g. reduce R & D and training, keep old assets

- Discourage managers from investing in projects which are acceptable to the overall firm but which reduce the divisions ROI, e.g. firm's req. ROI < project ROI < Div. ROI

Limitations of ROI

- Ignores time value of money
- Measures only one component of success
- Problems in measuring income and investment

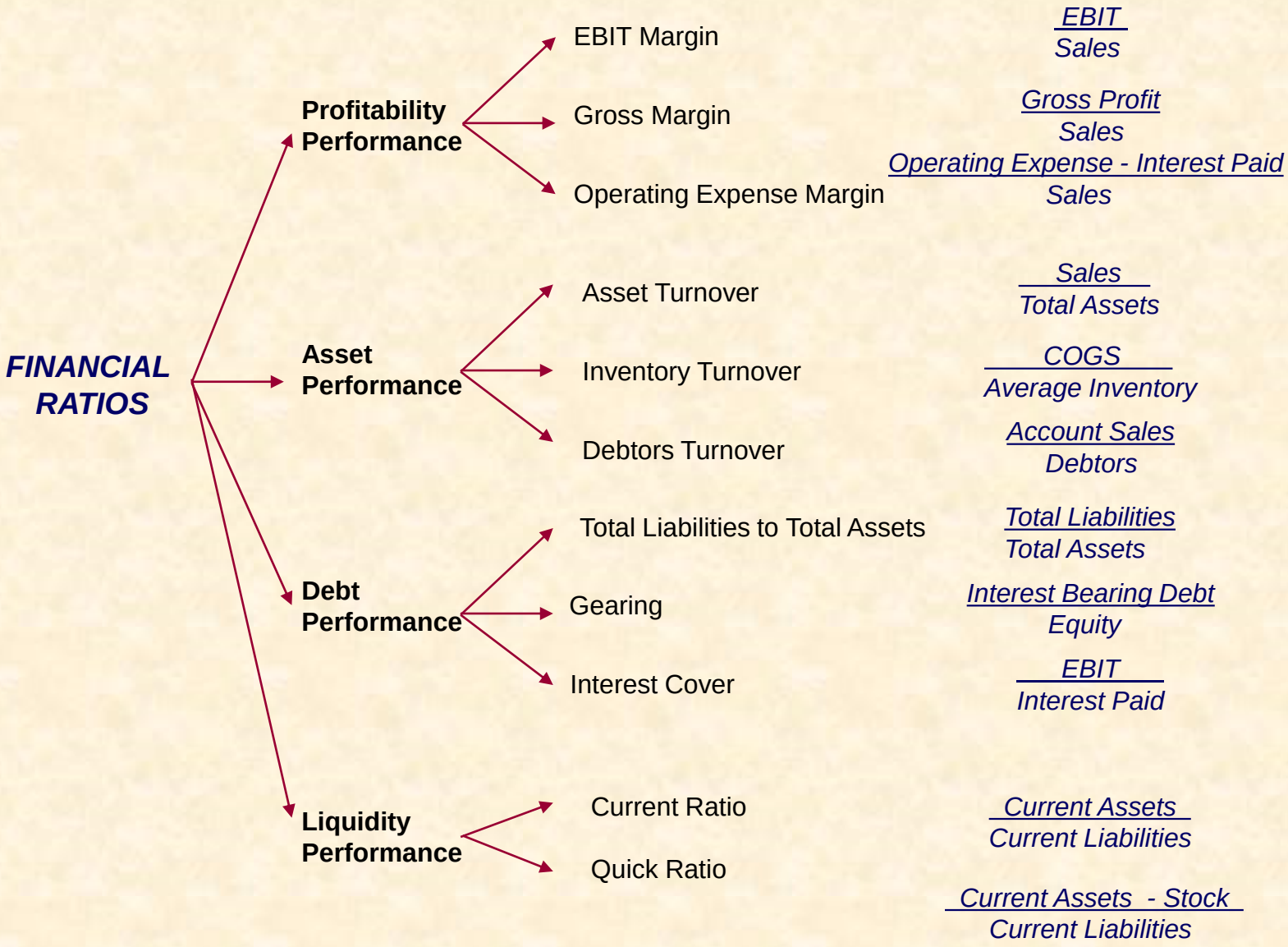
Limitations of ROI

- Increasing pressure on ST performance
- Faster promotion of managers
- Larger organisations run by the numbers
- Fewer managers with production or technical experience
- Bonus plans tied to ROI

Overcoming ROI Limitations

- Use a number of performance measures of LT and ST nature including ROI
- How invested capital is measured needs to be considered so that new asset investment is not discouraged
- Use other financial ratios

Assembling your tool kit...



Measuring profitability

KPI	CALCULATION	MEASURES
EBIT Margin	$\frac{\text{EBIT}}{\text{Sales}}$	Proportion of profit for every sales dollar
Gross Margin	$\frac{\text{Gross Profit}}{\text{Sales}}$	Ability to profitably buy and sell stock at a profit, manufacture and sell stock at a profit or provide and sell a service at a profit
Operating Expense Margin	$\frac{\text{Total Operating Expense - Interest Paid}}{\text{Sales}}$	The ability to reduce expenses relative to sales

Measuring asset performance

KPI	CALCULATION	MEASURES
Asset Turnover	$\frac{\text{Sales}}{\text{Total Assets}}$	The dollar amount of sales relative to the investment in assets
Inventory Turnover	$\frac{\text{Cost of Goods Sold}}{\text{Inventory}}$ $\frac{365}{\text{Inventory Turnover}}$	The ability to purchase and sell stock as many times a year as possible The number of days an organisation purchases and sells stock in a year
Debtors Turnover	$\frac{\text{Sales}}{\text{Debtors}}$ $\frac{365}{\text{Debtors Turnover}}$	The ability to collect amounts outstanding relative to sales The number of days taken to collect accounts receivable

Debt performance

KPI	CALCULATION	MEASURES
Liabilities to Assets	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$	The amount borrowed for every dollar invested in assets
Interest Cover	$\frac{\text{EBIT}}{\text{Interest Paid}}$	The amount of profit for every dollar of interest paid

Solvency or Liquidity ratios

KPI	CALCULATION	MEASURES
Current ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	Simplest measure of the ability of the organisation to raise funds to meet its short-run obligations
Acid test ratio	$\frac{\text{Quick Assets}}{\text{Current Liabilities}}$	The ability of the organisation to meet short-run commitments from its most liquid assets.

Market related ratios

- ***Price earnings*** = Market price / EPS

(Shows how much investors are willing to pay per dollar of earnings; the average market P/E ratio is 20-25 times earnings)

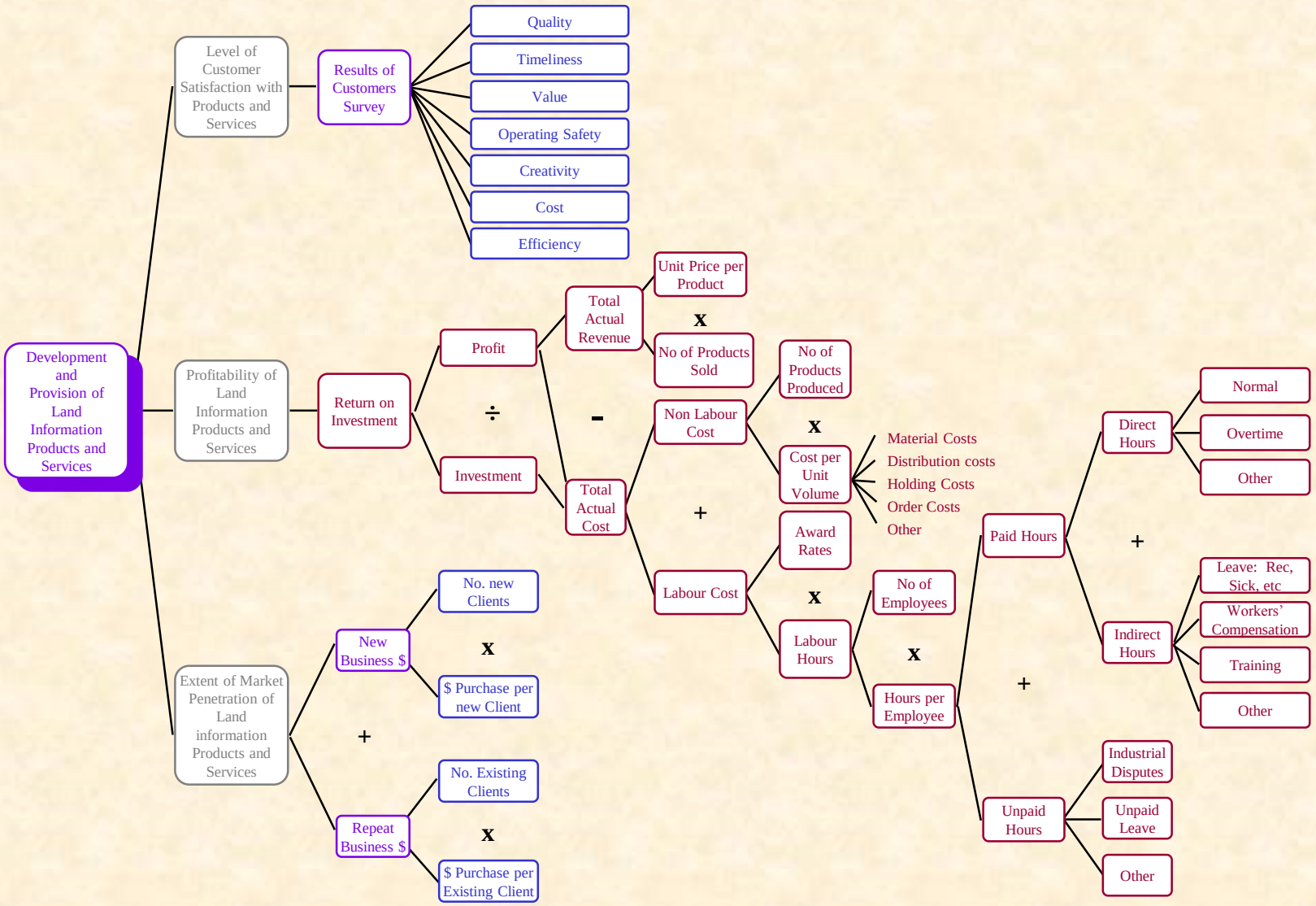
- ***Dividend yield*** = Dividends / Market price

(Shows how much a company pays out in dividends each year relative to its share price; in other words, how much "bang for your buck" you are getting from dividends)

- ***Dividend payout*** = Dividends / Net Profit

(provides an idea of how well earnings support the dividend payments. More mature companies tend to have a higher payout ratio)

Du Pont Analysis



Problems of ratio analysis

- Based on historical data
- Uses historical cost
- Year end data may not be typical - "window dressing" of annual accounts
- Lack of disclosure
- Extraordinary items
- Entities are never strictly comparable

Financial Analysis ~ Summary

(1) Understand Relationships

- between revenues, expenses, assets, liabilities and equity

(2) Explain Performance

- reasons for levels of revenue, margins, expenses, profits, assets, liabilities and equity

(3) Identify Trends

- in profitability and key performance indicators over time

(4) Assess Comparative Position

- identify the position of the organisation in an industry and gain insight into relative efficiency and profitability

Look for…

- What does it represent?
- Has it been accurately calculated?
- How does it relate to the other financial statements?
- Is it commercially realistic for this Organisation?
- Is it commercially realistic relative to the Industry?
- Do we need to act on it and, if so, what specific actions are necessary?

Rules of thumb…

- Financial position can only be improved by increasing Equity or Net Worth over time
- If a profit or surplus is not made for the year, then Equity or Net Worth remains constant or declines
- Every year, earn a profit or surplus and invest it either by purchasing an asset or reducing a liability
- Most organisations make a net profit after tax of between 2% and 7% of total revenue
- An organisation should generate a positive cash flow from operating activities
- A cash deficit in the following areas requires immediate attention:
  - cash receipts is less than cash payments
  - net cash surplus from operating activities is less than net profit after tax

Case studies for today...

- Case 1-2 Kim Fuller
- Case 13.3 Identify the Industries
- Case 13.4 Supplement to Identify the Industries
- Case 17.3: Shelter Partnership Inc

For Next Session:

- Case 16.2: Prestige Telephone Company
- Case 18.6: Midwest Office Products