

Accounting
Building Business Skills

Paul D. Kimmel

Chapter Eleven:
Financial Statement Analysis

PowerPoint presentation by Kate Wynn-Williams
University of Otago, Dunedin
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Learning Objectives:

- Understand the concept of earning power and indicate how irregular items are presented.
- Discuss the need for comparative analysis and identify the tools of financial statement analysis.
- Explain and apply horizontal analysis.

2

Learning Objectives:

- Describe and apply vertical analysis.
- Identify and calculate ratios and describe their purpose and use in analysing the liquidity, solvency and profitability of a business.
- Discuss the limitations of financial statement analysis.

3

Earning Power

- Net profit, adjusted for irregular items
- Indicates ability to sustain profits from normal operations

4

Earning Power

- Irregular items are non-recurring and require separate disclosure:
 - extraordinary items
 - fundamental errors
 - changes in accounting estimates
 - changes in accounting policies
 - discontinuation of operations

5

Earning Power

- Separate disclosure also needed for regular items that exceed usual size or are different in nature:
 - e.g. major inventory write-downs
 - e.g. settlement of legal dispute







6

Earning Power

- Extraordinary items – outside ordinary activities of the entity AND non-recurring:
 - e.g. nationalisation of an offshore subsidiary by foreign government
 - disclosed within statement of financial performance

7

Earning Power

Extraordinary items	Ordinary items
1. Effects of major casualties, if rare in the area. 	1. Effects of major casualties, not uncommon in the area. 
2. Expropriation (takeover) of property by a foreign government. 	2. Write-down of inventories or write-off of receivables. 
	3. Losses attributable to strikes. 
	4. Revenues or expenses from sales of property, plant or equipment. 

Earning Power

- Fundamental errors – mistakes found in current reporting period that materially affect previous period(s) financial reports
 - e.g. significant error in reporting of annual interest expense
 - disclosed within statement of financial performance
 - current and prior period profits should be adjusted for the error(s)

9

Earning Power

- Changes in accounting estimates – revisions of estimates used in previous period financial statements
 - e.g. extension of estimated useful life or revision of estimated residual value of non-current assets
 - disclosed within the notes to financial statements

10

Earning Power

- Changes in accounting policies – affect consistency of comparative financial reports
- if material, disclose:
 - the nature of the change
 - the reason for the change
 - the effect on current year profits
 - the cumulative effect on previous profits

11

Earning Power

- comparative information is restated
- e.g. a change from FIFO to average cost when valuing inventory
- disclosed within the notes to financial statements

12

Earning Power

- Discontinuing operations – activities that are closed down or sold
- may affect future profitability
- if material, disclose:
 - which business operations are being discontinued
 - in which segments the discontinuing activities operate

13

Earning Power

- date and nature of initial agreement
- when discontinuation to be completed
- carrying amounts of assets and liabilities affected
- revenue and expense items affected
- net cash flows relating to discontinuing activities
- e.g. manufacturing plant closed down
- disclosed within the notes to financial statements

14

Comparative Analysis

- Every item in financial reports represents something important
- It existed and was material at some time and in some quantity
- Its significance can be determined only in relation to something else
 - single numbers on their own do not provide useful information

15

Comparative Analysis

- Comparative analysis gives useful information:
 - intracompany – within a single company (detects changes in financial relationships and trends)
 - industry averages – between companies in same industry (determines position relative to others)
 - intercompany – between other companies (indicates competitive position)

16

Comparative Analysis

- Three basic techniques:
 - horizontal analysis – to evaluate a series of financial data over time
 - vertical analysis – to evaluate financial items in relation to a base amount
 - ratio analysis – to evaluate a comprehensive range of financial relationships representing different aspects of an entity's activities

17

Horizontal Analysis

- Used to analyse increases or decreases over a series of financial periods
- Establishes trends
- Stated as both dollar amounts and as percentages
- Percentages removes the effect of size, so relative magnitude of change is revealed

18

Horizontal Analysis

- Percentages:
 - can be stated relative to a nominated base year
 - or stated as a percentage change from year to year
 - dollar amount should be reported with percentages

$$\text{Change since base period} = \frac{\text{Current-year amount} - \text{Base-year amount}}{\text{Base-year amount}}$$

19

Vertical Analysis

- Percentages used to indicate relative magnitude of items with respect to a base amount
- Useful for comparing companies of different sizes
- Calculated percentages can also be tracked over time to determine relative changes (patterns of change)

20

Ratio Analysis

- Involves a wide range of financial relationships:
 - Liquidity – short-term ability to meet debt obligations and unexpected needs for cash
 - Solvency – long-term survival
 - Profitability – operating success of entity, and ability to obtain debt and equity financing and to grow

21

Ratio Analysis

- Can be used for intercompany and intracompany comparisons
- Can also be used to compare entities with industry averages
- Can be used to establish trends

22

Ratio Analysis – Liquidity

- Important to bankers, suppliers and other short-term creditors

Current ratio – indicates short-term debt-paying ability:

$$\frac{\text{current assets}}{\text{current liabilities}}$$

23

Ratio Analysis – Liquidity

Quick ratio – indicates immediate short-term ability to pay debts by removing less liquid assets from current asset numerator:

$$\frac{\text{cash} + \text{marketable securities} + \text{net receivables}}{\text{current liabilities}}$$

24

Ratio Analysis – Liquidity

Current cash debt coverage – reflects whole period, not just a single point in time:

$$\frac{\text{net cash from operating activities}}{\text{average current liabilities}}$$

- note: combines cash + accrual figures

25

Ratio Analysis – Liquidity

Receivables turnover – indicates effectiveness of credit collection policies (number of times trade receivables are converted into cash during the period):

$$\frac{\text{net credit sales}}{\text{average net trade receivables}}$$

26

Ratio Analysis – Liquidity

Average collection period – converts receivables turnover figure into a measure of days for receivables collection:

$$\frac{365 \text{ days}}{\text{receivables turnover}}$$

27

Ratio Analysis – Liquidity

Inventory turnover – reflects effectiveness of inventory management:

$$\frac{\text{cost of goods sold}}{\text{average inventory}}$$

Average days in inventory – converts inventory turnover into a measure of days for inventory to be sold:

$$\frac{365 \text{ days}}{\text{inventory turnover}}$$

28

Ratio Analysis – Solvency

- Important to long-term creditors and shareholders

Debt to total assets ratio – indicates degree of leverage (percent of total assets funded through debt):

$$\frac{\text{total liabilities}}{\text{total assets}}$$

29

Ratio Analysis – Solvency

Debt to equity ratio – indicates relative size of debt with respect to equity:

$$\frac{\text{total liabilities}}{\text{total equity}}$$

30

Ratio Analysis – Solvency

Times interest earned – indicates ability to sustain debt (number of times interest obligations can be covered by operating profit:

$$\frac{\text{profit before interest and tax}}{\text{interest expense}}$$

31

Ratio Analysis – Solvency

Cash debt coverage – reflects whole period, not just a single point in time:

$$\frac{\text{net cash from operating activities}}{\text{average total liabilities}}$$

32

Ratio Analysis – Solvency

Free cash flow – indicates estimated discretionary cash:

$$\text{net cash from operating activities less capital expenditure}$$

Note: these combine cash + accrual figures

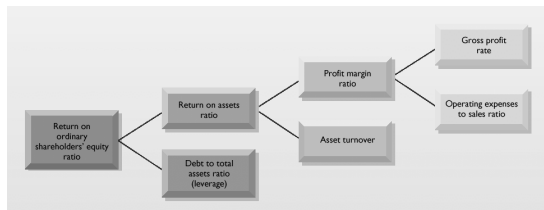
33

Ratio Analysis – Profitability

- Important to investors and creditors
- Often used to assess management's effectiveness
- Common profitability ratios are related:

34

Ratio Analysis – Profitability



35

Ratio Analysis – Profitability

Return on ordinary shareholders' equity ratio – indicates earnings per dollar invested by the owners:

$$\frac{\text{profits available to ordinary shareholders}}{\text{average ordinary shareholder equity}}$$

36

Ratio Analysis – Profitability

Return on assets – indicates overall profitability with respect to investment in assets:

$$\frac{\text{net profit}}{\text{average total assets}}$$

- Note: degree of leverage (interest expense), profit margins and asset base affect this ratio

37

Ratio Analysis – Profitability

Profit margin – indicates rate of return on net sales:

$$\frac{\text{net profit}}{\text{net sales}}$$

Asset turnover – indicates how efficiently assets are used to generate sales:

$$\frac{\text{net sales}}{\text{average total assets}}$$

38

Ratio Analysis – Profitability

Note: return on assets =

profit margin X asset turnover =

$$\frac{\text{net profit}}{\text{net sales}} \times \frac{\text{net sales}}{\text{average total assets}}$$

39

Ratio Analysis – Profitability

Gross profit rate – indicates level of inventory costs to selling price:

$$\frac{\text{gross profit}}{\text{net sales}}$$

Operating expenses to sales ratio – indicates level of other costs incurred to support sales:

$$\frac{\text{operating expenses}}{\text{net sales}}$$

40

Ratio Analysis – Profitability

Cash return on sales ratio – similar to net profit ratio, but uses cash numerator instead of accrual profit:

$$\frac{\text{net cash from operating activities}}{\text{net sales}}$$

Earnings per share – indicates level of net profit available for each share:

$$\frac{\text{profit available to ordinary shareholders}}{\text{weighted average number of shares}}$$

41

Ratio Analysis – Profitability

Price-earnings ratio – relates market confidence with profits available to ordinary shareholders:

$$\frac{\text{market share price}}{\text{earnings per share}}$$

Cash dividend payout ratio – relates actual dividends paid to profits:

$$\frac{\text{cash dividend}}{\text{net profit}}$$

42

Ratio Analysis – Limitations

- Some caution is needed when analysing financial data:
 - Estimates – some valuations rely on estimations (e.g. calculations for annual depreciation expense, uncollectable receivables, future warranty obligations)
 - Cost of assets – historic cost does not account for the effects of price-level changes

43

Ratio Analysis – Limitations

- Alternative accounting methods – differences in accounting policies for the similar financial activities are often allowed (e.g. methods of depreciation)
- Atypical data – some end-of-period data may not represent normal business conditions
- Diversification – segment data may provide more relevant and comparable information

44
