Lesson #5
Ratios, at first glance

Financial ratios

- Provide a quick and (relatively) simple means of evaluating the financial health of a business (company).
- They relate one figure appearing in the financial statement to some other figures appearing there (e.g., operating profit in relation to capital employed or in relation to assets) or to some other resources of the business (e.g., net profit for employee, sales revenue per square metre of selling space, etc.).
- Ratios are very helpful when comparing different businesses, even if involved in different scale of operations (e.g. expressing operating profit in relation to capital employed).

Financial ratios

- By calculating ratios it's possible to get a reasonable good picture of the position and performance of a business.
- Ratios are not so difficult to calculate...
- ... but they can be difficult to interpret.
- So they are really only a jumping-off point for further analysis.
- Ratios can help you highlighting the financial strength or weaknesses of the business but they will not explain, by themselves, the reason why of strength/weakness.
- Ratios rarely offer answers... They often raise questions!
- They shows the way to deepen your analysis to reveal the underlying reasons of the financial statement figures.

Financial ratios

- Ratios can be expressed in various forms (e.g. as a percentage or as a proportion). It will depend on the needs of the analysis and the use of information.
- It is possible to calculate a lot of ratios but the quality of the information is no less a concern than the quantity!
- There is no generally accepted list of ratios can be applied to financial statements…
- …nor there is a standard method of calculating many of them.
- However, it is important to be consistent in the way in which ratios are calculated for comparison purposes.
- BEWARE OF RATIOS!

Financial ratios classifications

- Ratios can be grouped into categories.
- Each category relates a particular aspect to financial performance/position.

- **PROFITABILITY** – Profitability ratios provide an insight to the degree of success in creating wealth for the investors. They express the profit made (net profit or gross profit) or figures bearing on profit (e.g. sales revenue) in relation to other key figures in the financial statement (or to some business resource).

Financial ratios classifications

- **ACTIVITY** – These ratios are used to determine or to measure the efficiency with particular resources have been managed within the business.
- They are also referred to as “efficiency ratios”.
- They provide information about stock management, accounts receivable, accounts payable, etc.
- Generally, about the efficient use of the resources available for the business.

Financial ratios classifications

- **LIQUIDITY** – Liquidity ratios examine the relationship between liquid resources held and liabilities due for payment in the near future.
- It is vital to the survival of the business that there are sufficient liquid resources available to meet maturing obligations.
- All liquidity ratios compare short term assets with short term liabilities (e.g. current ratio = current assets / current liabilites).

Financial ratios classifications

- **FINANCIAL GEARING** – Financial gearing occurs when a business is financed, at least in part, by contributions form outside parties (in form of loans).
- The level of gearing has an important effect on the degree of risk associated with a business. So it is something that managers must consider when making financing decisions.
- Gearing ratios tend to highlight the extent to which the business uses borrowings.

Financial ratios classifications

- **INVESTMENT** – Certain ratios are concerned with assessing the returns and performance of shares in a particular business from the perspective of shareholders who are not involved with the management of the company.

- Analysis must be clear:
  - Who is the target user?
  - Why do they need the information?

The need for comparison

- Merely calculating a ratio will not tell us very much about the position or performance of a business.
- It is only when we compare this ratio with some “benchmark” that the information can be interpreted and evaluated.

The need for comparison

Bases used to compare ratios:

- **Past periods**: problems are 1) quite different trade conditions in the periods; 2) operating inefficiencies may not be clearly exposed; 3) inflation.
- **Similar businesses**: problems are 1) different year ends and different trading conditions; 2) different accounting policies; 3) difficulty to obtain information of competitor businesses.
- **Planned performance**: the targets that management developed before the star of the period under review. Analysts outside the business do not normally have access to the business's plans.

Limitations

- Mere study of reported financial figures never leads to a fully informed judgment about the issuer of the statements.
- Financial statements can't include non-quantitative factors that may be essential to an evaluation as:
  - Industry conditions,
  - Corporate culture,
  - Management ability (to anticipate and respond effectively to change).

Profitability ratios

Profitability ratios provide an insight to the degree of success in creating wealth for the investors. They express the profit made (net profit or gross profit) or figures bearing on profit (e.g. sales revenue) in relation to other key figures in the financial statement (or to some business resource).

Main profitability ratios

- **ROE (Return on Equity)**

$$\frac{\text{Net profit}}{\text{Owners' equity}}$$

- **ROI (Return on Investments)**

$$\frac{\text{EBIT}}{\text{Operating assets}}$$

- **ROS (Return on Sales)**

$$\frac{\text{EBIT}}{\text{Revenues from sales}}$$

- **Interest cover ratio**

$$\frac{\text{EBIT}}{\text{Interest expense}}$$

Liquidity ratios

- Liquidity ratios examine the relationship between liquid resources held and liabilities due for payment in the near future.
- It is vital to the survival of the business that there are sufficient liquid resources available to meet maturing obligations.
- Liquidity ratios are concerned with the ability of the business to meet its short-term financial obligations.
- All liquidity ratios compare short term assets with short term liabilities (e.g. current ratio = current assets / current liabilites).

Liquidity ratios

- Current ratio

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

- Acid test ratio

$$\frac{\text{Current assets (excl. Inventories)}}{\text{Current liabilities}}$$

- Cash ratio

$$\frac{\text{Cash and cash equivalents}}{\text{Current liabilities}}$$

Efficiency ratios

- These ratios are used to determine or to measure the efficiency with particular resources have been managed within the business.
- They are also referred to as “activity ratios”.
- They provide information about stock management, accounts receivable, accounts payable, etc.
- Generally, about the efficient use of the resources available for the business.

Efficiency ratios: inventory

- **Average stock turnover ratio**

$$\frac{\text{Cost of sales}}{\text{Average stock}}$$

- The inventory turnover ratios measure the number of times a company sell or use its average level of inventory during a year (or a different period).
- If the cost of goods sold is not available, often sales revenues are used (i.e. Continental approach).
- It is possible to use the closing amount if the average is not available.

Efficiency ratios: inventory

- **Average finished product turnover ratio**

$$\frac{\text{Cost of sales (*)}}{\text{Average Finished Products Stock}}$$

- **Average materials turnover ratio**

$$\frac{\text{Purchase cost of materials}}{\text{Average Materials Stock}}$$

(*) If the cost of goods sold is not available, often sales revenues are used (i.e. Continental approach).

Efficiency ratios: inventory

- **Days in inventory for products**

$$\frac{365 \text{ days}}{\text{Average FP turnover ratio}}$$

- **Days in inventory for materials**

$$\frac{365 \text{ days}}{\text{Average materials turnover ratio}}$$

- It is possible to determine the days in inventory ratios as well.

Efficiency ratios: trade debtors and creditors

- **Days of Sales Outstanding (DSO)**

$$\frac{\text{Accounts receivable}}{\text{Sales revenue}} \times 365$$

  - This ratio determines the number of days needed on average to collect cash from customers.
  - It measures the ability of the company to collect receivables.
  - It tells us how many days sales remain remain in account receivable.

- **Debtors turnover ratio**

$$\frac{\text{Sales revenue}}{\text{Accounts receivable}}$$

Gearing ratios

- Financial gearing occurs when a business is financed, at least in part, by contributions from outside parties.
- Where a business borrows, it takes on commitment to:
  - pay interest charges;
  - make capital repayments.
- The level of gearing is important to assess the financial risk of a business.
- A high proportion between debts and equity can increase the risk of the business becoming insolvent.

Gearing ratios

- **Gearing ratio (financial leverage)**

$$\frac{\text{Debt}}{\text{Equity}}$$

- **Equity to fixed (noncurrent) assets ratio**

$$\frac{\text{Owners' equity}}{\text{Noncurrent assets}}$$

- **Long-term claims to fixed assets**

$$\frac{\text{Equity+ long-term liab.}}{\text{Noncurrent assets}}$$

Relationship between profitability and efficiency

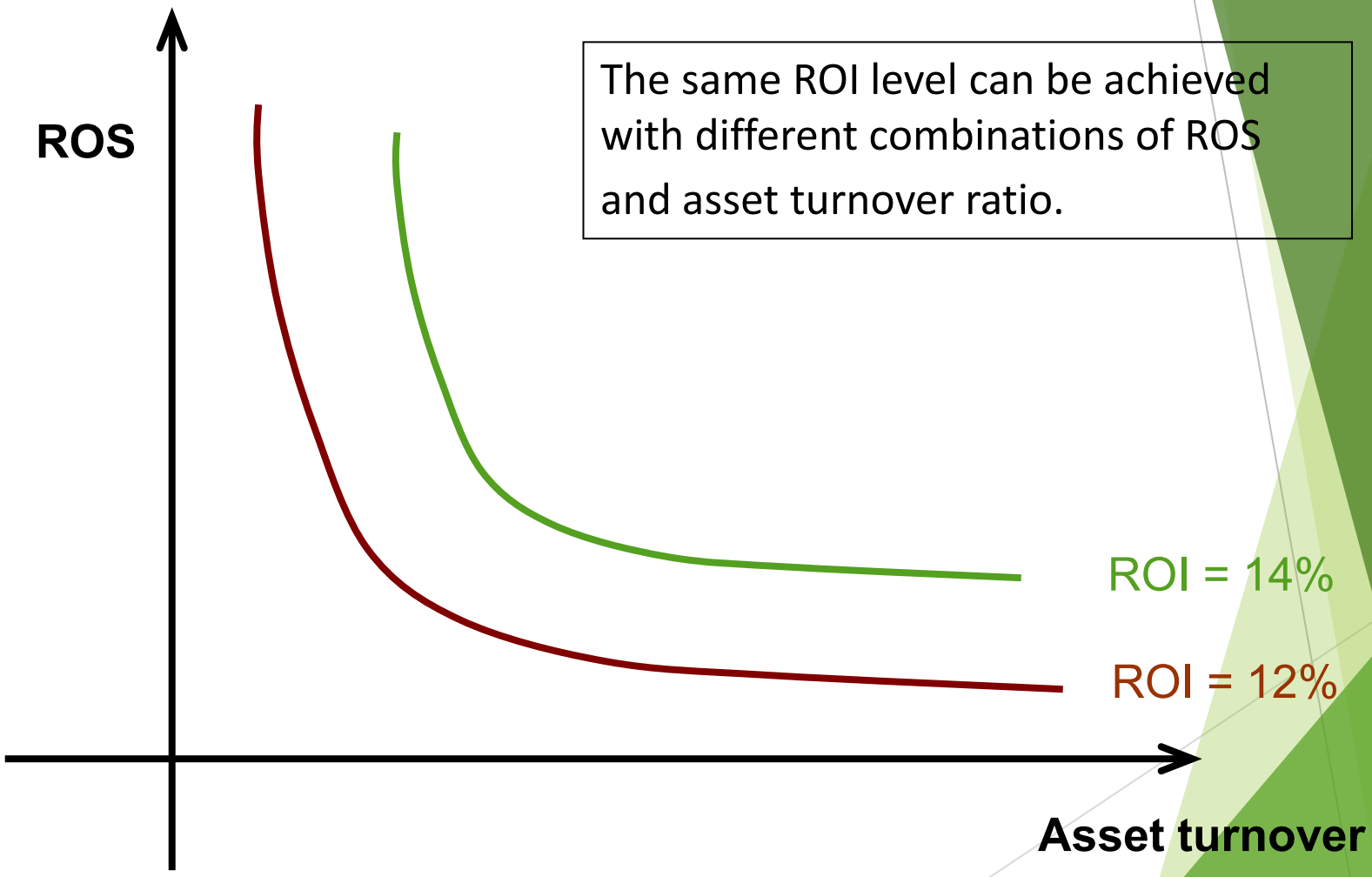
Asset turnover ratio

$$ROI = \frac{EBIT}{Assets} = \underbrace{\frac{EBIT}{Sales}} * \overbrace{\frac{Sales}{Assets}}$$

ROS (Return on Sales)

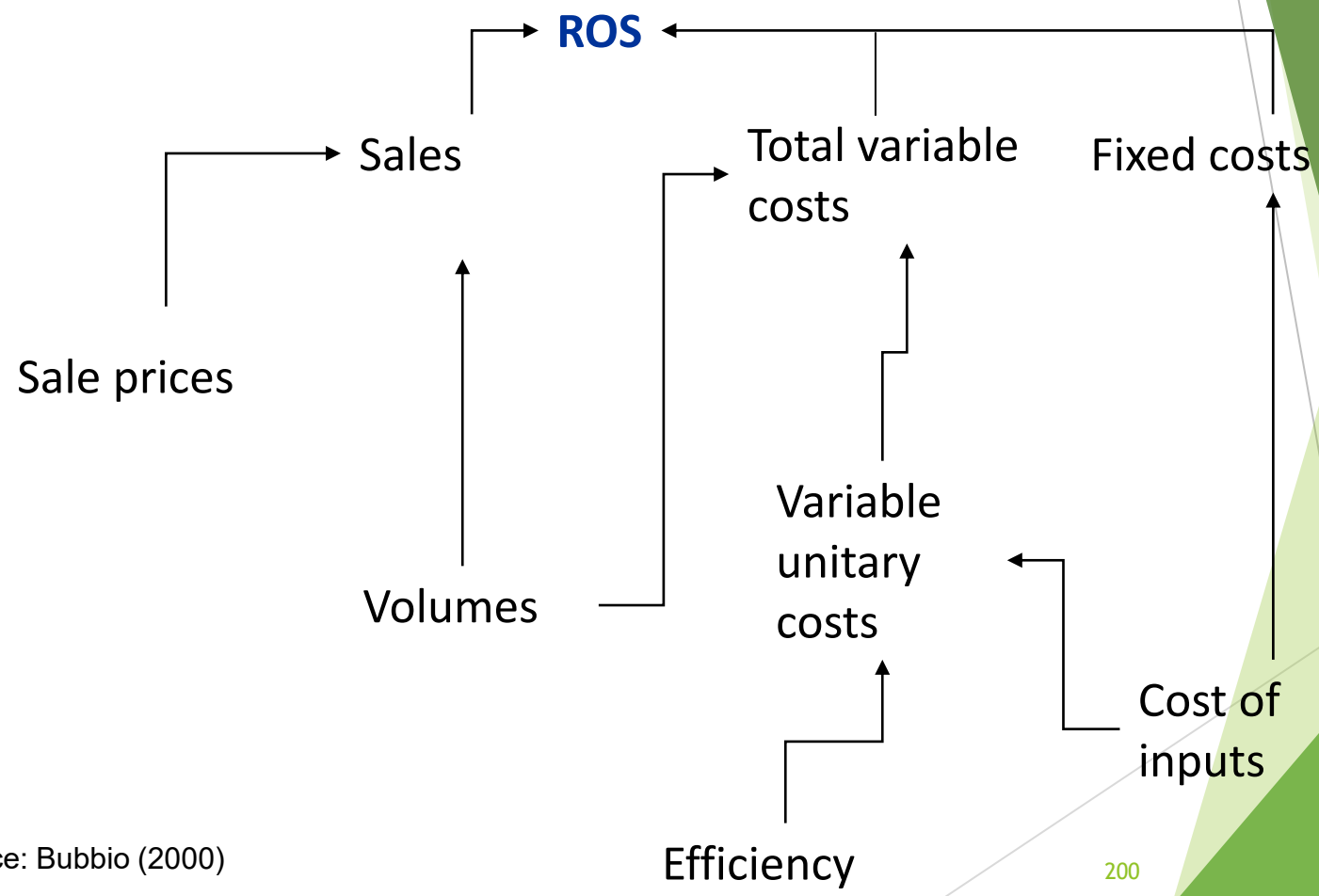
ROI is determined by asset turnover ("how many times" asset are renewed in a year) and profit margins on sales.

ROS, asset turnover and ROI



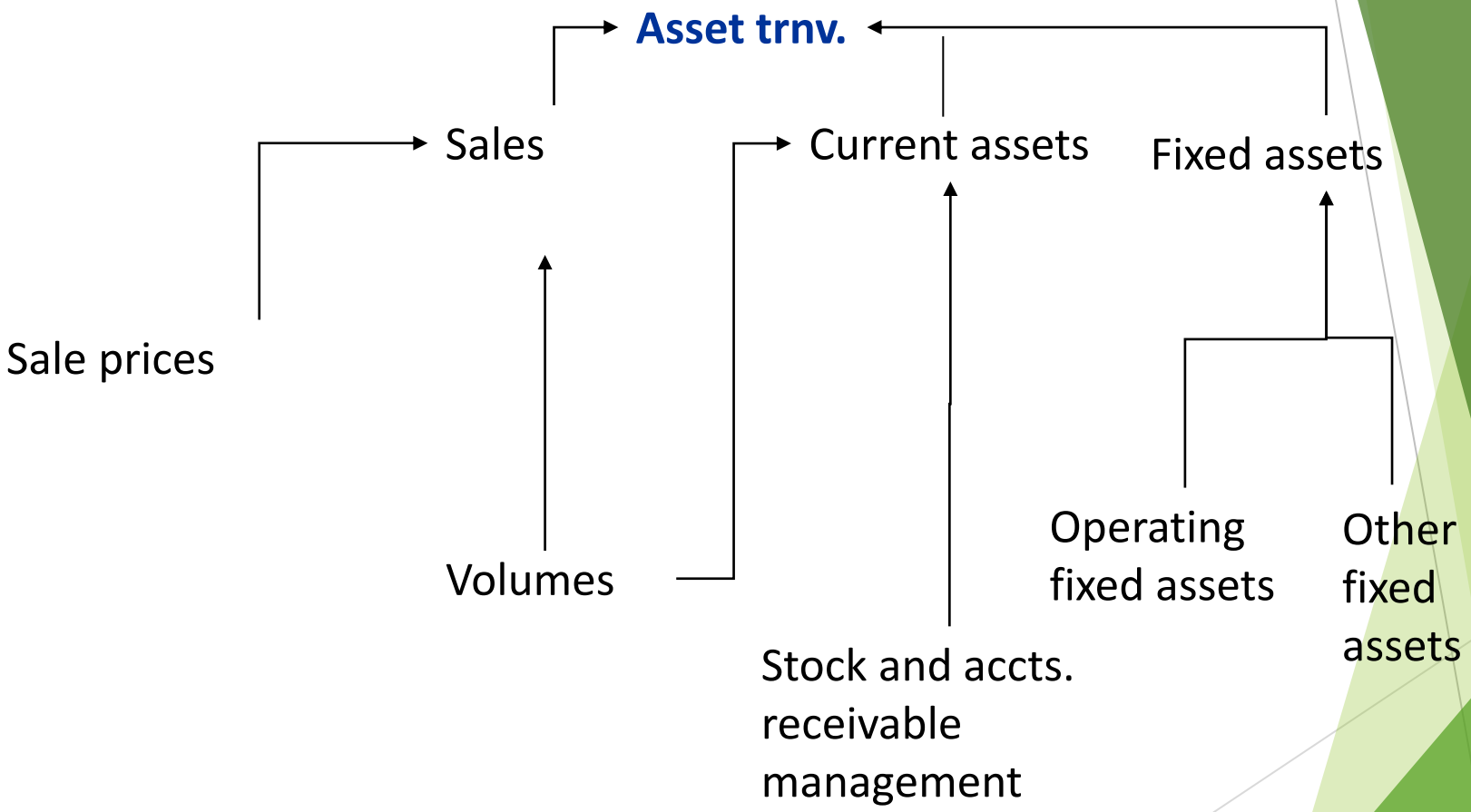
The same ROI level can be achieved with different combinations of ROS and asset turnover ratio.

Determinants of ROS



Source: Bubbio (2000)

Determinants of asset turnover



Source: Bubbio (2000)

The Du Pont Formula

$$ROE = \frac{NET\ PROFIT}{EQUITY}$$

$$ROE = \frac{NET\ PROFIT}{EQUITY} * \frac{SALES}{SALES} * \frac{ASSETS}{ASSETS}$$

$$ROE = \frac{NET\ PROFIT}{SALES} * \frac{SALES}{ASSETS} * \frac{ASSETS}{EQUITY}$$

RETURN ON SALES

ASSET TURNOVER

CAPITAL STRUCTURE

An overview of ratios and flows