

A86045 Accounting and Financial Reporting (2017/2018)

Session 2

Financial Analysis: Ratio Analysis

SESSION 2 SESSION OBJECTIVES & OVERVIEW

Session 2 Overview

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Course Objectives

At the end of this course students will be able to:

- ***Read and perform a high level interpretation*** of the financial statements of companies applying international accounting standards
- ***Identify and evaluate*** the impact on a companies accounts of alternative accounting methods
- ***Carry out a high level assessment*** of the the economic- financial position of a company reporting under IAS/IFRS.

Course Overview

	1. Financial reporting under IFRS	14. Construction contracts	
	2. Financial analysis: Ratio analysis	15. Other Non-financial liabilities	
	3. Financial analysis: Segments and EPS	16. Review session	
	4. Review session	17. Mid term test	PGS
	5. Revenues	18. Financial Instruments 1	
PGS	6. Costs and expenses	19. Financial Instruments 2	
	7. Taxation - Direct and Indirect	20. Review session	
	8. Non-current assets - Intangible assets	21. Cash Flow Statement	
	9. Non-current assets - Tangible assets	22. Group accounts/Business comb	PT
	10. Financial leases	23. Review session	
	11. Impairment of assets	24. Review session	
	12. Review session	25. Final test	PGS
PT	13. Inventories		

Objectives of Session 2 & 3

At the end of these two sessions, and the following review session, students will be able to:

- **Apply** the basic techniques of financial analysis
 - Ratio analysis
 - Trend analysis
 - Common size analysis
- **Perform** a high level assessment of a company's:
 - Profitability
 - Liquidity
 - Efficiency
 - Investment risk

SESSION 1 RECAP AND PRE-WORK

Session 1 recap

- Introductions
- Course objectives, overview, reference materials, teaching methods
- Evolution of accounting, stakeholders, IASs and IFRSs
- The 5 Components of Financial statements and linkages between them
- Basic bookkeeping recap
- Reading, research and assignment for next session

Session 1 recap - Cont'd

- Understanding the Financial Statements Required by IAS 1
 - Profit or loss and other comprehensive income (one or two statements, by nature or destination)
 - Financial position (classified or unclassified)
 - Changes in equity
 - Cash flows (Direct or indirect method)
 - Notes
- Currents Assets
- Current Liabilities
- The Linkages among the 4 Financial Statements

Required Reading and research assignment

- Reading
 - Melville
 - Chapter 1 – The Regulatory Framework (14 pages)
 - Chapter 2 – The IASB Conceptual Framework (19 pages)
 - **Chapter 3 – Presentation of Financial Statements (30 pages)**
 - Chapter 4 – Accounting policies, accounting estimates and errors (5 pages)
 - Chapter 21 – Related Parties and Changes in foreign exchange rates (7 pages)
 - IFRS
 - **IAS 1 Presentation of Financial Statements (38 pages)**
- Exercises
 - Melville Exercises 3.1 – 3.6
 - Melville On-line multiple choice questions for the above chapters
 - Exercise EX 1 Financial Statements
- Research assignment
 - European companies in the Top Global 100 companies using IFRS
 - Presentation options
 - RA 1 Data collection template for chosen companies

Research Assignment 2 Data collection

- Choose a company from the list of Europe's Top Companies
- Obtain the 2015 Annual Report and/or Form 20F (for US SEC Registrants)
- Locate the Consolidated Financial Statements prepared under IFRS
- Complete the template for the profit and loss account and statement of financial position
- Obtain an understanding of the company's Business Model.

Research Assignment 1 - Financial Statement Presentation Options

Company _____

Statement of Profit or Loss and Other Comprehensive Income

- Single Statement or Two Separate Statements
- Expense by Nature or Expenses by destination or Function

Statement of Financial Position

- Current/Non-current distinction or By Order of Liquidity

Statement of Cash Flows

- Indirect Method or Direct Method

RA 1 Financial Statement Presentation

	Statement of Profit or Loss and Other Comprehensive Income		Statement of Financial Position	Cash Flow Statement
	P&L and OCI One or Two Statements	P&L by Nature or Function	Current/Non-current or Liquidity	Direct or Indirect
Barclays	Two	Function	Liquidity*	Indirect
L'Oreal	Two	Function	Current/Non-current	Indirect
Nestlé	Two	Function	Current/Non-current	Indirect
Siemens	Two	Function	Current/Non-current	Indirect
Vodafone	Two	Function	Current/Non-current	Indirect**

* Page 221 Contractual maturity of financial assets and liabilities

** Note 19 Reconciliation of net cash flow from operating activities

Business Models

- How a company plans to make money.
- Spreadsheets made it possible to model businesses – by accident more than by design.
- Two part model
 - 1. activities associated with making something: design, purchase of raw materials, manufacturing etc.
 - 2. activities associated with selling something: finding and reaching customers, transacting a sale etc.
- Not to be confused with strategy – i.e. offering a better business model or to a different market

RATIO ANALYSIS

Ratio analysis

- Profitability
- Liquidity
- Efficiency
- Investment

Facilitates trend analysis (comparison over time) and the comparison with other companies in the same and/or other industries irrespective of the company's size or currency used to prepare the financial statements (Common size analysis)

Profitability ratios

Relative to sales

$$\text{Gross profit margin \%} = \frac{\text{Gross Profit}^*}{\text{Sales}} \times 100$$

**(Net sales – cost of sales)*

$$\text{Operating profit margin \%} = \frac{\text{Operating Profit}^{**}}{\text{Sales}} \times 100$$

*** (Gross Profit – operating expenses)*

$$\text{Net profit margin \%} = \frac{\text{Net income}}{\text{Sales}} \times 100$$

Sales = net sales/sales excluding VAT/sales revenues/consolidated sales revenues/revenue(s)/total revenues/group revenues/turnover

Gross profit = gross margin

Operating profit = operating income/income from operations

Net income = income for the period/consolidated net income/net profit/net profit for the year/profit after tax/profit for the period (year) (financial year)

Profitability ratios Cont'd

Relative to Investment

$$\text{Return on capital employed (ROCE) \% **} = \frac{\text{Profit before Interest expense and tax (PBIT/EBIT)}}{\text{Shareholders equity* + Long-term debt*}} \times 100$$

$$\text{Return on equity (ROE) \%} = \frac{\text{Profit after tax}}{\text{Shareholder's equity*}} \times 100$$

Shareholders' equity = Net assets, Capital employed, Equity, Total equity, stockholders' equity

*Technically should be based on the average of beginning and ending amounts

** Melville uses Non-current liabilities as opposed to Long-term debt

Liquidity ratios

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} \quad X : 1$$

$$\text{Quick ratio (acid test)} = \frac{\text{Current assets} - \text{inventories}^*}{\text{Current liabilities}} \quad X : 1$$

* Inventories = Inventories and work-in-progress, stock-in-trade

Efficiency ratios

$$\text{Asset turnover}^{**} = \frac{\text{Sales}}{\text{Non-current assets}^*} \quad \text{Times}$$

$$\text{Inventory turnover} = \frac{\text{Cost of sales}}{\text{Inventory}^*} \quad \text{Times}$$

$$\text{Inventory holding period (DOI)} = \frac{\text{Inventory}^*}{\text{Cost of sales}} \times 365 \quad \text{Days}$$

Inventories = Inventories and work-in-progress, stock-in-trade

Cost of sales = Cost of revenues

*Technically should be based on average of beginning and ending amounts

** Melville uses net assets or capital employed

Efficiency ratios Cont'd

$$\text{Accounts receivable collection period (DSO)} = \frac{\text{*Accounts receivable (less VAT)}}{\text{Credit Sales}} \times 365 \text{ Days}$$

$$\text{Accounts payable collection period (DPO)} = \frac{\text{*Accounts payable (less VAT)}}{\text{Credit purchases}} \times 365 \text{ Days}$$

Accounts receivable = trade accounts receivable, receivables, trade receivables

Accounts payable = trade accounts payable, accounts payable trade, current trade and other payables

*** Technically should be based on average of beginning and ending amounts**

Investment ratios

$$\text{Earnings per share (IAS 33)} = \frac{\text{Net income}}{\text{Weighted average number of ordinary shares outstanding during the year}}$$

$$\text{Price/Earnings (P/E)} = \frac{\text{Share market price}}{\text{Earning per share (EPS)}}$$

$$\text{Dividend cover} = \frac{\text{Net income}}{\text{Dividends}} \quad \text{OR} \quad \frac{\text{Earning per share (EPS)}}{\text{Dividend per share}}$$

$$\text{Dividend Yield \%} = \frac{\text{Dividend per share}}{\text{Share market price}} \times 100$$

Investment ratios cont'd

$$\text{Capital Gearing} = \frac{\text{Long-term debt}}{\text{*Equity}}$$

$$\text{Interest cover} = \frac{\text{Profit before interest expense and tax (PBIT/EBIT)}}{\text{Interest expense}}$$

Long-term debt = financial liabilities, long-term borrowings, financial debts, interest bearing loans and borrowings, debt, financial debt, non-current financial debt, non-current borrowings and debt, borrowings and other financial liabilities

Interest expense = finance costs, financing costs, financial expenses, finance expense, financial interest on debt, cost of net financial debt, finance costs on gross debt

* Melville uses Equity + Non-current liabilities

MARKET MEASURES, ANALYSTS FOCUS AND OTHER CONSIDERATIONS

Measures that Matter

1. Execution of corporate strategy
2. Management credibility
3. Quality of corporate strategy
4. Innovativeness
5. Ability to attract and retain talented people
6. Market share
7. Management experience
8. Alignment of compensation with shareholder interests
9. Research leadership
10. Quality of major business processes

Analysts Focus

- EBITDARM
- EBITDAR
- EBITDA
- EBIT
- EBT

Earnings before tax, interest, depreciation, amortization, rents and restructuring, management fees



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Other useful ratios/information

- Effective tax rate (Income taxes as a % of Pre-tax income)
- Intangibles as a % total assets
- Intangibles as a % of equity
- Debt maturities/covenants
- Market Capitalization vs. Net equity
- R&D as a % of revenues
- Contingencies

Expected relationships among data – some examples

Observation	Consequence
Sales increase	Accounts receivable increase but DSO should remain the same. Inventories may decrease unless production has increased
Gross margin increases	Sales prices have increased, prices of raw materials have decreased or a change in mix of sales to more profitable products/services
Working capital increases	Improved collection of accounts receivables, delayed payment of creditors, positive cash flows from investing and financing activities
Effective tax rate is lower than statutory tax rate	Use of prior year tax losses, proportion of profit from countries with lower tax rates, existence of non-taxable income
Inventory decreases	Sales increase

RATIO, TREND & COMMON SIZE ANALYSIS

Ratio Analysis

Profitability

Gross margin (Gross profit/Revenues)	%	#DIV/0!
Operating margin (Operating profit/Revenues)	%	#DIV/0!
Net profit margin (Net profit/Revenues)	%	#DIV/0!
Return on equity (Net profit/Shareholders' equity)	%	#DIV/0!
Return on Capital employed (PBIT/Shareholders' equity + Long-term debt)	%	#DIV/0!

Liquidity

Current ratio (Current assets/Current liabilities)	Ratio:1	#DIV/0!
Quick ratio (Current assets - inventory/Current liabilities)	Ratio:1	#DIV/0!

Efficiency ratios

Asset Turnover (Sales/Non-current assets)	Times	#DIV/0!
Inventory holding period (DOI) (Cost of sales/inventory x 365)	Days	#DIV/0!
Inventory turnover (Cost of sales/inventory)	Times	#DIV/0!
Trade receivables collection period (DSO)	Days	#DIV/0!
Trade payable payment period (DPO)	Days	#DIV/0!

Investment ratios

Earnings per share (EPS)	USD	#DIV/0!
Price Earnings ratio (P/E) (Share price/EPS x CHF Xrate)	Times	#DIV/0!
Dividend cover	Times	#DIV/0!
Dividend yield	%	#DIV/0!
Debt/Equity ratio (Gearing)	Ratio	#DIV/0!
Interest cover	Times	#DIV/0!

Other

Effective tax rate	%	#DIV/0!
R&D as a % of revenues	%	#DIV/0!
Intangibles as a % of total assets	%	#DIV/0!
Intangibles as a % of equity	%	#DIV/0!

Comparisons amongst data

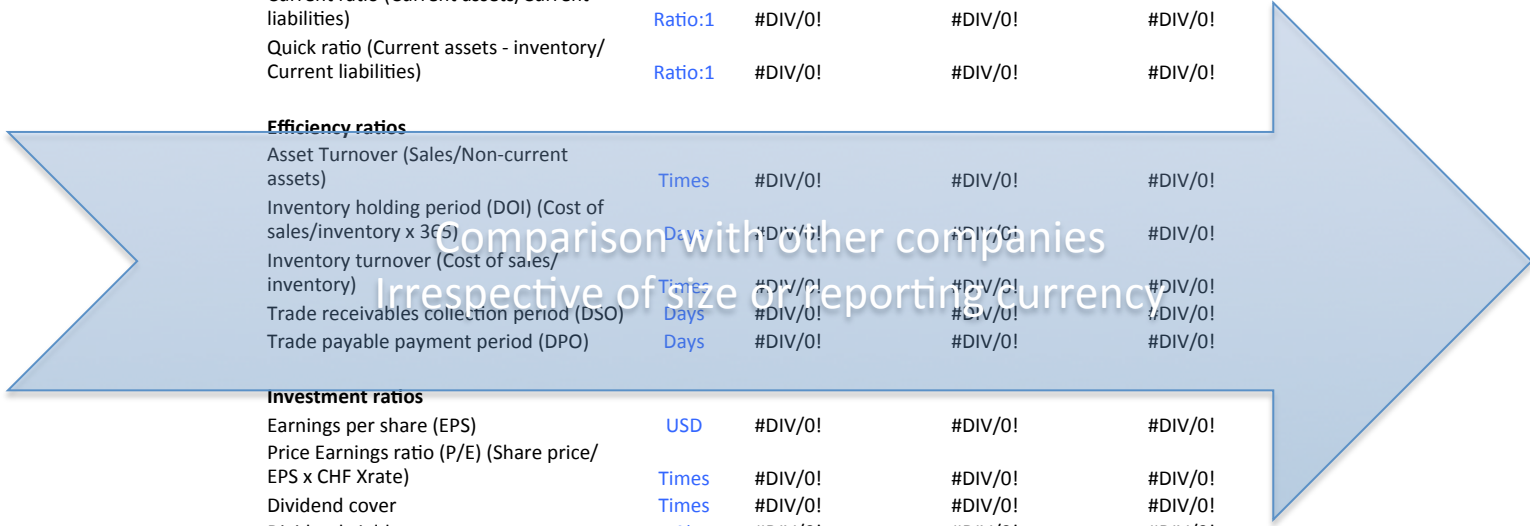
Trend Analysis

		Year 1	Year 2	Year 3
Profitability				
Gross margin (Gross profit/Revenues)	%	#DIV/0!	#DIV/0!	#DIV/0!
Operating margin (Operating profit/Revenues)	%	#DIV/0!	#DIV/0!	#DIV/0!
Net profit margin (Net profit/Revenues)	%	#DIV/0!	#DIV/0!	#DIV/0!
Return on equity (Net profit/Shareholders' equity)	%	#DIV/0!	#DIV/0!	#DIV/0!
Return on Capital employed (PBIT/Shareholders' equity + Long-term debt)	%	#DIV/0!	#DIV/0!	#DIV/0!
Liquidity				
Current ratio (Current assets/Current liabilities)	Ratio:1	#DIV/0!	#DIV/0!	#DIV/0!
Quick ratio (Current assets - inventory/Current liabilities)	Ratio:1	#DIV/0!	#DIV/0!	#DIV/0!
Efficiency ratios				
Asset Turnover (Sales/Non-current assets)	Times	#DIV/0!	#DIV/0!	#DIV/0!
Inventory holding period (DOI) (Cost of sales/inventory x 365)	Days	#DIV/0!	#DIV/0!	#DIV/0!
Inventory turnover (Cost of sales/inventory)	Times	#DIV/0!	#DIV/0!	#DIV/0!
Trade receivables collection period (DSO)	Days	#DIV/0!	#DIV/0!	#DIV/0!
Trade payable payment period (DPO)	Days	#DIV/0!	#DIV/0!	#DIV/0!
Investment ratios				
Earnings per share (EPS)	USD	#DIV/0!	#DIV/0!	#DIV/0!
Price Earnings ratio (P/E) (Share price/ EPS x CHF Xrate)	Times	#DIV/0!	#DIV/0!	#DIV/0!
Dividend cover	Times	#DIV/0!	#DIV/0!	#DIV/0!
Dividend yield	%	#DIV/0!	#DIV/0!	#DIV/0!
Debt/Equity ratio (Gearing)	Ratio	#DIV/0!	#DIV/0!	#DIV/0!
Interest cover	Times	#DIV/0!	#DIV/0!	#DIV/0!
Other				
Effective tax rate	%	#DIV/0!	#DIV/0!	#DIV/0!
R&D as a % of revenues	%	#DIV/0!	#DIV/0!	#DIV/0!
Intangibles as a % of total assets	%	#DIV/0!	#DIV/0!	#DIV/0!
Intangibles as a % of equity	%	#DIV/0!	#DIV/0!	#DIV/0!

Comparison over time

Common Size Analysis

		Co A	Co B	Co C
Profitability				
Gross margin (Gross profit/Revenues)	%	#DIV/0!	#DIV/0!	#DIV/0!
Operating margin (Operating profit/Revenues)	%	#DIV/0!	#DIV/0!	#DIV/0!
Net profit margin (Net profit/Revenues)	%	#DIV/0!	#DIV/0!	#DIV/0!
Return on equity (Net profit/Shareholders' equity)	%	#DIV/0!	#DIV/0!	#DIV/0!
Return on Capital employed (PBIT/Shareholders' equity + Long-term debt)	%	#DIV/0!	#DIV/0!	#DIV/0!
Liquidity				
Current ratio (Current assets/Current liabilities)	Ratio:1	#DIV/0!	#DIV/0!	#DIV/0!
Quick ratio (Current assets - inventory/Current liabilities)	Ratio:1	#DIV/0!	#DIV/0!	#DIV/0!
Efficiency ratios				
Asset Turnover (Sales/Non-current assets)	Times	#DIV/0!	#DIV/0!	#DIV/0!
Inventory holding period (DOI) (Cost of sales/inventory x 365)	Days	#DIV/0!	#DIV/0!	#DIV/0!
Inventory turnover (Cost of sales/inventory)	Times	#DIV/0!	#DIV/0!	#DIV/0!
Trade receivables collection period (DSO)	Days	#DIV/0!	#DIV/0!	#DIV/0!
Trade payable payment period (DPO)	Days	#DIV/0!	#DIV/0!	#DIV/0!
Investment ratios				
Earnings per share (EPS)	USD	#DIV/0!	#DIV/0!	#DIV/0!
Price Earnings ratio (P/E) (Share price/ EPS x CHF Xrate)	Times	#DIV/0!	#DIV/0!	#DIV/0!
Dividend cover	Times	#DIV/0!	#DIV/0!	#DIV/0!
Dividend yield	%	#DIV/0!	#DIV/0!	#DIV/0!
Debt/Equity ratio (Gearing)	Ratio	#DIV/0!	#DIV/0!	#DIV/0!
Interest cover	Times	#DIV/0!	#DIV/0!	#DIV/0!
Other				
Effective tax rate	%	#DIV/0!	#DIV/0!	#DIV/0!
R&D as a % of revenues	%	#DIV/0!	#DIV/0!	#DIV/0!
Intangibles as a % of total assets	%	#DIV/0!	#DIV/0!	#DIV/0!
Intangibles as a % of equity	%	#DIV/0!	#DIV/0!	#DIV/0!



REQUIRED READING AND RESEARCH ASSIGNMENT

Required Reading and research assignment

- Reading
 - Melville
 - Chapter 22 – Ratio Analysis (26 pages)
 - IFRS
 - None
- Exercises
 - Melville Exercises 22.1 – 22.6
 - Melville On-line multiple choice questions for the above chapter
 - Exercise EX 2 Financial Analysis Exercises
- Research assignment
 - European companies in the Top Global 100 companies using IFRS
 - RA 2 Data collection template for chosen companies
 - Calculate the profitability, liquidity, efficiency and investment ratios
 - Perform a three year trend analysis of the Profit and loss accounts
 - Perform a two year comparison of the statement of financial position
 - Identify reasons for significant fluctuations from the Company's Annual Report



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RA1 Research assignment template

RA 2 Research Assignment Template

Research assignment template
Company

Income Statement

		2016	2015	2014
		€ millions	€ millions	€ millions
Net sales				
Other revenues				
	<i>Total revenues</i>	<u>0</u>	<u>0</u>	<u>0</u>
Cost of sales				
	<i>Gross profit</i>	<u>0</u>	<u>0</u>	<u>0</u>
Operating expenses				
Research & development				
Selling, general and administrative expenses				
Depreciation, amortization and provisions				
Other income (expense)				
	<i>Operating profit</i>	<u>0</u>	<u>0</u>	<u>0</u>
Finance income (expense)				
Share of result of associated companies				
	<i>Pre-tax profit</i>	<u>0</u>	<u>0</u>	<u>0</u>
Income tax				
	<i>Net profit continuing operations</i>	<u>0</u>	<u>0</u>	<u>0</u>
Discontinued operations				
	<i>Net profit</i>	<u>0</u>	<u>0</u>	<u>0</u>

Statement of financial position

	2016	2015
	€ millions	€ millions
Non-current assets		
Goodwill		
Intangible assets		
Property, plant & equipment		
Investments		
Deferred taxes		
Other	<u>0</u>	<u>0</u>
Current assets		
Inventories/Long-term contracts		
Trade receivables		
Other current assets		
Short-term investments		
Cash and cash equivalents		
Assets held for disposal	<u>0</u>	<u>0</u>
Total assets	<u>0</u>	<u>0</u>
Current liabilities		
Short-term Borrowings		
Trade payables		
Income taxes		
Provisions		
Other current liabilities		
Liabilities held for disposal	<u>0</u>	<u>0</u>
Non-current liabilities		
Long-term Borrowings		
Provisions		
Deferred tax liabilities		
Pensions and employee benefits		
Other	<u>0</u>	<u>0</u>
Shareholders' equity	<u>0</u>	<u>0</u>
Total equity and liabilities	<u>0</u>	<u>0</u>
Weighted Average number of shares outstanding		
Share price		
Market capitalization	<u>0</u>	<u>0</u>
Dividend per share		

RA2 Research assignment template

If the company classifies expenses by nature put all expenses into operating expenses

NB
In the income statement insert negative numbers with a minus sign

Session 2 summary

- Recap Session 1 and the 4 basic financial statements
- Financial analysis
- Ratio analysis (profitability, liquidity, efficiency and investment)
- Ratio, trend and common size analysis
- Reading, research and assignment for next session

Overview of Session 3

- Segment Analysis – (IFRS 8)
- Earnings per share – (IAS 33)
- Hands on application and discussion of financial analysis techniques using the companies researched
 - Common size analysis
 - Trend analysis
 - Ratio analysis
 - Industry comparisons

Session Validation

- Name the key ratio (s) used to assess liquidity
- What type of analysis do we perform to compare companies of different sizes and across different industries?
- What ratio would you use to assess a company's ability to continue to pay the interest on its loans as it becomes due?
- How many years data do we need to perform a meaningful trend analysis?