Finance Accounting and Control
Lecture 2

Financial ratios

Prof. Andrea Bonaccorsi

Assets and liabilities

FA Fixed assets	OF Owners' funds
CA Current assets	LTL Long term loans CL Current liabilities

Assets

Fixed assets

1. Intangibles
2. Net fixed accounts
3. Long term investment

Current assets

1. Inventories (stocks)
2. Acccounts receivable
3. Cash
4. Miscellaneous

Liabilities

Owners' funds

1. Issued common stock
2. Capital reserves
3. Revenue reserves

Long term loans

Current liabilities

1. Accounts payable
2. Short term loans
3. Miscellaneous

Other definitions

Capital employed (CE) = FA + CA – CL
= OF + LTL

Net worth (NW) = OF

Working capital (WC) = CA – CL
= OF + LTL - FA

Total revenues

(-) Total operating costs

= **EBIT Earnings before interest and tax**

(-) Interest

= **EBT Earnings before tax**

(-) Tax

= **EAT Earnings after tax**

(-) Dividends

= **RE Retained earnings**

Total revenues

(-) Total operating costs

= **EBIT Earnings before interest and tax**

(-) Interest

To be paid to lenders of debt capital

= **EBT Earnings before tax**

(-) Tax

To be paid to the taxation authority

= **EAT Earnings after tax**

(-) Dividends

Available for remuneration of shareholders

= **RE Retained earnings**

Profitability ratios

Return on assets (ROA) or on total assets (ROTA)

EBIT/ Total assets

Return on investment (ROI)

EBIT/ Capital employed

Return on equity (ROE)

EAT/Owners' funds

Liquidity ratios

Current ratio, or Working capital ratio (CR)

Current assets/ Current liabilities

Quick ratio, or Acid test ratio (QR)

Current liabilities/ Cash

Solvency ratios

Equity ratio, or proprietary ratio (ER)

Owners' funds/ Total liabilities

Debt to equity ratio, or financial leverage (DER)

Long term loan/ Owners' funds

Capital market ratio

Dividend yeld (DY)

Dividend/ Market value of share

Cash flow ratio

Free cash flow (FCF)

Free Cash Flow/ Revenues

Free Cash Flow/ Total assets

Free cash flow to equity (FCFE)

Free Cash Flow (-) Interest expenses / Owners Funds

Free Cash Flow

EBITDA
(-) Depreciation and Amortization

EBIT
(-) Taxes
(+) Depreciation and Amortization
(+/-) Non financial variations (risk allocation, severance indemnity)
(+/-) Working capital variations

Operating Cash Flow
(+/-) Operational investment/ divestment (CAPEX)

Free Cash Flow

Example

Total sales		1120
Cost of sales		
Materials	426	
Labour	291	
Factory overheads	168	
Administration	123	
Cost of sales		1008
Earnings before interest and taxes (EBIT)		112

Fixed assets			**Owners’ funds**		
Intangibles	0		Issued capital stock		80
Net fixed assets	440		Capital reserves	60	
Long term investments	40		Revenue reserves	220	
		480			360
Current assets			**Long term loans**		200
Inventory		128	**Current liabilities**		
Accounts receivable	160				
Cash	20		Short term loans	60	
Miscellaneous	12		Accounts payable	140	
			Miscellaneous	40	
		320			240
Total assets		800	Total liabilities		800

Operating performance

Return on total assets (ROTA) = EBIT/ Total assets = 112/800 = 0.14 = 14%

EBIT/ Total assets
= EBIT/Sales * Sales/Total assets

EBIT/Sales = 112/1120 = 0.10

Sales/ Total assets = 1120/800 = 1,4

ROTA= 0.10 * 1,4 = 0.14 = 14%

Operating performance/2

EBIT/Sales is called Sales margin

It gives an indication of the profitability of operational activities of a firm.
A high sales margin means that a firm has the power to establish prices that largely exceed their costs.

It is therefore important to examine the composition of sales in order to verify which items can be reduced and/or optimized.

Operating performance/3

Analysis of the sales margin (EBIT/Sales)

Materials/ Sales	426/1120	38%
Labour/ Sales	291/1120	26%
Factory overheads/ Sales	168/1120	15%
Administration/ Sales	123/ 1120	11%
Cost of sales/ Sales	1008/1120	90%
Sales margin	112/1120	10%

Operating performance/4

Analysis of the sales to total assets ratio (Sales/ Total assets)

Sales/ Total assets	1120/800	1,4 times
Sales/Net fixed assets	1120/440	2,5 times
Sales/ Inventories	1120/128	8,7 times
Sales/ Accounts receivable	1120/160	7 times

Operating performance/5

Analysis of the sales to assets ratio (Sales/ Total assets)

The Sales/ Assets ratios can be interpreted as a measure of the «rotation» of capital invested, or the speed at which the investment into various types of assets returns into cash via the generation of sales.

Sales/ Inventories 1120/128 8,7 times

This ratio means that on average the inventories are transformed into sales 8,7 times in a year. That is, they are sold once each 365/8,7 = 42 days.

Sales/ Accounts receivable 1120/160 7 times

This ratio means that on average the credits are payed by clients (i.e. credits are transformed into cash) 7 times in a year. That is, clients pay their credits with an average delay of 365/7 = 52 days.

Profitability analysis

Sales	1120		
(-) Operating costs	1008		
EBIT	112	EBIT/ Sales	112/1120 = 10%
(-) Interest	20		
EBT	92	EBT/ Sales	92/1120 = 8,2%
(-) Taxes	32		
EAT	60	EAT/Sales	60/1120 = 5,4%
(-) Dividends	24		
Retained earnings	36		