

# Finance Accounting and Control

## Lecture 2

# Financial ratios

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## 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. Accounts 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

$$\begin{aligned}\text{Capital employed (CE)} &= \text{FA} + \text{CA} - \text{CL} \\ &= \text{OF} + \text{LTL}\end{aligned}$$

$$\text{Net worth (NW)} = \text{OF}$$

$$\begin{aligned}\text{Working capital (WC)} &= \text{CA} - \text{CL} \\ &= \text{OF} + \text{LTL} - \text{FA}\end{aligned}$$

**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**

To be paid to lenders  
of debt capital

(-) Interest

= **EBT Earnings before tax**

(-) Tax

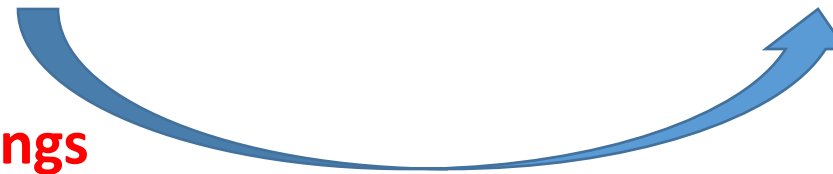
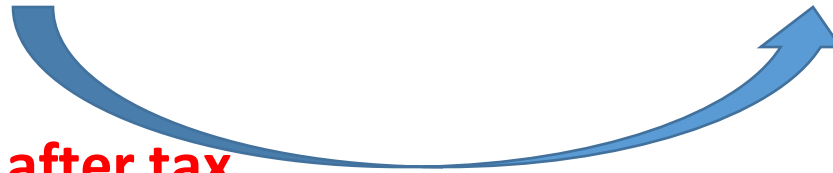
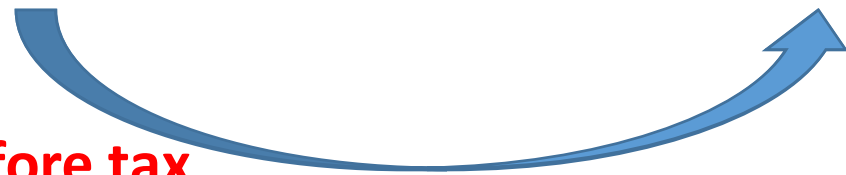
To be paid to the  
taxation authority

= **EAT Earnings after tax**

(-) Dividends

Available for  
remuneration of  
shareholders

= **RE Retained earnings**



## Profitability ratios

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

$\text{EBIT} / \text{Total assets}$

Return on investment (ROI)

$\text{EBIT} / \text{Capital employed}$

Return on equity (ROE)

$\text{EAT} / \text{Owners' funds}$

## 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 yield (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
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Cost of sales		
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Materials	426	
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Labour	291	
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Factory overheads	168	
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Administration	123	
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Cost of sales		1008
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Earnings before interest and taxes (EBIT)		112
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**Fixed assets**

Intangibles	0	
Net fixed assets	440	
Long term investments	40	
		480

**Current assets**

Inventory		128
Accounts receivable	160	
Cash	20	
Miscellaneous	12	
		320

Total assets	800	
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**Owners' funds**

Issued capital stock		80
Capital reserves	60	
Revenue reserves	220	
		360

Long term loans		200
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**Current liabilities**

Short term loans	60	
Accounts payable	140	
Miscellaneous	40	
		240

Total liabilities		800
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# Operating performance

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

$$\begin{aligned} & \text{EBIT/ Total assets} \\ &= \text{EBIT/Sales} * \text{Sales/Total assets} \end{aligned}$$

$$\text{EBIT/Sales} = 112/1120 = 0.10$$

$$\text{Sales/ Total assets} = 1120/800 = 1,4$$

$$\text{ROTA} = 0.10 * 1,4 = 0.14 = 14\%$$

# 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%
<u>Administration/ Sales</u>	<u>123/ 1120</u>	<u>11%</u>
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
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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
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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
(-) Interest	20

EBIT/ Sales	$112/1120 = 10\%$
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EBT	92
(-) Taxes	32

EBT/ Sales	$92/1120 = 8,2\%$
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EAT	60
(-) Dividends	24

EAT/Sales	$60/1120 = 5,4\%$
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Retained earnings	36
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