Rechnungslegung im Konzern | Summer 2025
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Analyzing a Firm's Profitability: Solutions

Exercise I

a)

Step 1: Re-arrange into operating and financing items

Balance Sheet	20X1
Assets	
Non-current	
Intangibles	3,500
PPE	4,800
Investments in associates	500
Current	
Securities held for trading	1,800
Trade accounts receivables	2,500
Inventory	3,050
Cash and cash equivalents	700
TOTAL	16,850
Equity & Liabilities	
Common Stock	*5,000*
Retained Earnings	2,450
Total shareholders' equity	*7,450*
Non-current liabilities	
Provisions	670
Long-term debt	3,500
Current liabilities	
Accounts payables	3,750
Short-term debt	1,480
TOTAL	16,850

Intangibles	3,500.00 €		
PPE	4,800.00 €		
Trade Accounts rec.	2,500.00 €		
Inventory	3,050.00 €	Investments in associates	500.00 €
Cash and eq.	700.00 €	Securities held for trading	1,800.00 €
Operational Assets	**14,550.00 €**	**Financial Assets**	**2,300.00 €**
Provisions	670.00 €	Long-term debt	3,500.00 €
Accounts Payable	3,750.00 €	Short-term debt	1,480.00 €
Operational Liabilities	**4,420.00 €**	**Financial Liabilities**	**4,980.00 €**
Net Operating Assets	**10,130.00 €**	**Net Financial Obligations**	**2,680.00 €**

Income Statement	20X1
Sales	**25,000**
Cost of sales	(1,000)
Gross profit	**24,000**
R&D expense	(3,000)
SG&A expense	(2,700)
Other operating income	(200)
Other operating expense	(15,000)
Operating profit (EBIT)	**3,100**
Income from associates	100
Interest income	150
Interest expense	(600)
Profit before tax	**2,750**
Tax expense	(700)
Net income	**2,050**

Profit before Tax (EBT)	2,750.00 €
Tax Expense	700.00 €
Tax Rate = Tax Exp. / NI	25.45%
EBIT = Operating Income	3,100.00 €
Tax Rate	25.45%
Operating income after tax [= EBIT * (1 - Tax rate)]	**2,311 €**
Income from Associates	100.00 €
Interest Expense	150.00 €
Interest Income	- 600.00 €
Financial Expense	**- 350.00 €**
Tax Rate	25.45%
Financial Expense after tax [= EBIT * (1 - Tax rate)]	**- 261 €**

Step 2: Calculate RNOA, NBC, and Leverage

- RNOA = NOI after tax / NOA
  RNOA = 2,311 / 10,130 = 22,81%
- NBC = NFE after tax / NFO
  NBC = 261 / 2,680 = 9,74%
- LEV = NFO / Equity
  LEV = 2,680 / 7,450 = 0.36

Step 3: Putting it all together

RoE = RNOA + LEV * (RNOA – NBC)

RoE = 22.81% + 0.36 * (22.81% - 9.74%) = 27.52%

b)

Yes. The average return on Cherry's operations is its RNOA of 22.81%, so NBC after tax of less than 15% would result in a positive spread.

Exercise II

a)

	BestDay Ltd.	**SleepFast Inc.**
Gross profit margin	84%	45%
Personnel Costs/Sales	34%	11%
EBIT margin	25%	25%
PPE turnover	0.77	1.47
Receivables Turnover	10.24	33.59
Average days Receivables	35.66	10.87
Gross profit margin	Much higher for the luxury BestDay Ltd., because they can charge a higher mark-up for the luxury experience.	More competition for SleepFast Inc., lower standards, lower possible mark-up.
Sales/Employee Cost	BestDays Business model aims to have high-quality staff, which has higher wages, and more investment in staff & training.	Personnel costs are cheaper/lower, both fixed wages and no extensive training programs etc.
EBIT margin	Greater reduction of BestDay Ltd. Since they spend a lot on advertising, and employees - leading to a larger difference between gross profit margin and EBIT margin.	The difference between gross profit and EBIT margin is not as high as for BestDay ltd., however rent and personnel are still big expense items.
PPE turnover	How any 1EUR of assets invested translates into revenue, which is lower for BestDay Ltd. since they heavily invest in property.	Higher for SleepFast Inc., they don't own much property, also the property is less expensive and investment intensive.
Receivables Turnover Average days Receivables	BestDay Ltd. has more revenue from the big travel agencies paying regularly every quarter.	Higher turnover of guests, who pay relatively quickly, high receivables turnover.

b)

Advanced DuPont Model		
	BestDay Ltd.	**SleepFast Inc.**
Classification of Items		
Operating assets	17,400	3,740
Financial assets	-	-
Operating liabilities	4,950	310
Financial liabilities	5,875	1,140
Analytical Balance Sheet		
Net operating assets	12,450	3,430
Net financial obligations	5,875	1,140
Equity (analytical statements)	6,575	2,290
Difference to equity as reported	-	-
Analytical Income Statement		
Net operating income before tax	1,443	414
Net financing expenses before tax	(100)	(60)
Effective tax rate	13%	22%
Net operating income (after tax)	1,256	323
Net financing expense (after tax)	(87)	(47)
Net income (analytical statements)	1,169	276
Difference to net income as reported	-	-
Profitability Analysis		
Return on Equity (direct)	**17.77%**	**12.07%**
Net operating margin	22%	19%
Net operating turnover	0.47	0.49
Return on net operating assets (RNOA) = Net operating income after tax / Net operating assets	**10.08%**	**9.42%**
Net borrowing cost = net financial expenses after tax / net financing obligations	**-1.5%**	**-4.1%**
Spread = RNOA - NBC	**8.60%**	**5.32%**
Leverage = net financial obligations / equity	0.89	0.50
RoE = RNOA + Leverage * Spread	**17.77%**	**12%**

c)

BestDay Ltd. might be more affected by the crisis. It has more fixed costs and is more likely to be less flexible in reducing expenses (e.g., fixed contracts, maintaining the property), which are difficult to adjust in the short-term.

BestDay Ltd. operating leverage is higher. It must cover larger amounts of fixed costs regardless of whether they generate sales through customers. Hence, the higher operating leverage also, the current ratio of BestDay Ltd. is comparably lower than that of SleepFast Inc., which indicates that short-term obligations might be more difficult to meet in times of disruptions.

d)

Management strives to increase ROE, and both RNOA and financial leverage are the drivers of ROE. Thus, one way to increase ROE is to increase RNOA through improved operating performance. The other way to increase ROE is with the successful use of financial leverage. Using a bank loan, BestDay's financial leverage increases. Which means that a higher financial leverage also results in a higher cost of debt for the company.

The project will increase BestDay's ROE if it yields an operating return (RNOA) that exceeds its cost of debt. BestDay's current operations yield, on average, ROE of about 18%, which exceed the firm's RNOA of about 10%. Thus, if the golf course has the same risk/profitability profile as BestDay's current operations, one would not advise pursuing the project.

Exercise III

- Tax expense:
  NOI before tax * (1 – ETR) = NOI after tax
  3,500 * (1 – ETR) = 2,722
  ETR = 22%

- NFE after tax:
  NFE before tax * (1- ETR) = NFE after tax
  350 * (1 – 22%) = 273

- NOA:
  NOI after tax / NOA = RNOA
  2,722 / NOA = 20%
  NOA = 13,610

- NFO :
  NOA – NFO = Equity
  13,610 – NFO = 8,450
  NFO = 5,160

- NBC:
  NFE after tax / NFO = NBC
  273 / 5,160 = 5%

- Leverage:
  NFO / Equity = LEV
  5,160 / 8,450 = 0.61

- Final decomposition: RoE = RNOA + LEV (RNOA – NBC)
  RoE = 29,15% = 20% + 0.61 * (20% - 5%)