ASSIGNMENTS

Ass. 1. The company borrowed 90 th EUR for 58 days. The agreed exact interest rate is 18.5% per year. What amount has to be paid at the end of the loan period?

Ass. 2. Banks' deposit terms are the following: bank A deposit interest is 9% per year and interest is compounded annually; bank B deposit interest is 8% per year and interests are compounded quarterly. Which bank would you choose for depositing 300 th EUR for 6 years and why? What is the effective interest rate in bank B and what would be the value of 300 th EUR at the end of year 6 if interests were compounded continuously?

Ass. 3. You have an annuity payment of 1000 EUR which lasts for 4 years.

- a) What is the present and future value of these payments if discount rate is 12%?
- b) If the annuity payment would be 500 EUR after every 6 months, what would be its present and future value using a 12% discount rate?

Ass. 4. Let's assume that according to a signed contract your company is going to receive the following payments:

Time	EUR
Now	2000
At the end of year 1	3000
At the end of year 2	4000
At the beginning of year 4	4000
At the end of year 5, 6 and 7	3000

The amounts received are deposited on a bank account with a guaranteed 7% annual interest.

- a) What is the present value of this contract?
- b) What is the future value of this contract?

Ass. 5. Electronics manufacturer is considering purchasing a new fully automated machine which would replace the manually operated one. Determine, based on the information provided, the project's: a) cash flows;

- b) payback period;
- c) NPV;
- d) profit index;
- e) IRR.
- Should the project be undertaken?

Current situation		
2 full-time employees with a salary	10,000	USD for each per year
Maintenance costs	5,000	USD per year
Scrap costs	5,000	USD per year
Old machine's initial purchase price	30,000	USD
Expected useful life	10	years
Age	5	years
Expected residual value at the end of useful life	0	
Depreciated	3000	USD per year
Current residual value on the balance sheet	15,000	USD
Tax rate	34%	
New project		
Cost of new machine	55,000	USD
Setup costs	5,000	USD
Maintenance costs	6,000	USD per year
Scrap costs	2,000	USD per year
Expected useful life	5	years
Depreciated using linear method to 0 during 5 years		
Expected rate of return	15%	

Ass. 6. What is the fair price of a 10-year bond with a 1100 face value if coupon interest is paid annually and it is 8% per year. The required rate of return is in 10%?

Ass. 7. Preferred stock pays dividend 1 EUR per year. The market price of the share is 40 EUR. What is the required rate of return?

Ass. 8. The last dividend paid on company XYZ shares was 3 EUR and the dividend's annual expected growth rate is 5%. What is the price of the share if the required rate of return is 25%?

Ass. 9. Calculate the cost of the following capital sources and thereafter calculate the weighted average cost of capital (WACC):

- 1. Using book value weights assuming that the company has issued 5000 new bonds with a face value of 1000 EUR, has outstanding bank loan of 5 mio EUR, has issued 2000 new preferred stock with a face value of 1000 EUR and has 3 mio old ordinary shares outstanding with a face value of 50 EUR and has issued 1 mio new ordinary shares with face value of 50 EUR. The company has also undistributed profit of 2 mio EUR with a cost of 13%.
- 2. Using market value weights assuming that the quantities of securities are the same as stated above.

a) New bonds			
Face value	1000	EUR	
Market price	970	EUR	
Coupon rate	10%	of face value per year	
Issue costs	5%	of market price	
Maturity	10	years	
Coupon interests are calculated annua	lly		
Tax rate	34%		
b) New preferred stock			
Market price	1100	EUR	
Annual dividend	100	EUR	
Issue costs	9	EUR per share	
c) Existing ordinary shares			
Market price	75	EUR	
Dividend last year	3.8	EUR per share	
Dividend growth rate	8%	per year	
d) New ordinary shares			
Dividend last year	3.8	EUR	
Dividend growth rate	8%	per year	
Market price	80	EUR	
Issue costs	6	EUR per share	
e) bank loan			
Interest rate	4%		
Tax rate	34%		

Ass. 10. The company is considering 3 different investment projects. The initial investment amounts and IRR figures are the following:

	Initial investment	IRR
А	165,000	16%
В	200,000	13%
С	125,000	12%

The company intends to finance these projects 40% with loans and 60% with share capital. The cost of loans is 7% for up to the amount of 120 th EUR and after that the cost rises to 11%. The company has existing shares with a value of 180 th EUR and the cost of equity is 19%. If the company would issue new shares, their cost would be 22%.

- a) Construct the graph for WACC.
- b) Which projects should be accepted?

Ass. 11 The company's 2013 sales and cost budget is the following:

		Material and	
		personnel costs	
	Sales EUR	EUR	
May	180,000	90,000	
June	180,000	90,000	
July	360,000	126,000	
August	540,000	882,000	
Sept.	720,000	306,000	
Oct.	360,000	234,000	
Nov.	360,000	162,000	
Dec.	90,000	90,000	

It is the beginning of July 2013. Compile a monthly cash flow schedule for the last 6 months of 2013 and determine the need for an overdraft. The minimum cash balance is set at 90 th EUR and the beginning cash balance on 1 July 2013 is 132 th EUR.

It is assumed that 10% of customers pay within 1 month from the sale, 75% pay on the second and 15% on the third month from the sale. Payments for materials and to employees are made one month after the costs have been accounted for. General administration expenses are 27 th EUR per month, lease payments are 9 th EUR per month, depreciation is 36 th per month and other costs 2700 EUR. The company has to pay income tax at the end of September and December in equal amounts of 63 th EUR. In October the company has to pay for an extraordinary product development cost 180 th EUR.

Ass. 12. Company A is trying to determine optimal capital structure for itself which would consist of loan and ordinary shares. The company uses no preferred stock and does not intend to use that in the future. The company has managed to calculate the cost of loans for different debt/equity mixes (see the table below). The company uses CAPM for determining the cost of equity. It assumes that risk-free rate is 5%, equity market premium is 6% and tax rate is 40%. Company A's beta in case it uses no loan would be 1.2. Determine the optimal capital structure for the company and determine the WACC at this capital structure.

Debt/capital	Equity/ capital	Debt/ equity	Pre-tax cost of debt
0.0	1.0	0.00	7.0%
0.2	0.8	0.25	8.0%
0.4	0.6	0.67	10.0%
0.6	0.4	1.50	12.0%
0.8	0.2	4.00	15.0%

Ass. 13. Company's financial manager assumes that the current year's sales are going to be 10% higher than a year before; general administration expenses excl. depreciation will remain at 80% of sales and the depreciation cost will increase the same pace as sales. Interest costs are assumed to remain unchanged and tax rate should be at 40%. Compile the company's current year's income statement.

Income statement	Last year
Sales	3,000,000
General administration costs excl. depreciation	2,450,000
EBITDA	550,000
Depreciation	250,000
EBIT	300,000
Interest costs	125,000
EBT	175,000
Tax	70,000
Net income	105,000

Ass. 14. Based on the results obtained in Assignment 13 compile the current year's balance sheet. Assume that the cost of goods sold will remain at the same level of sales as a year before, receivables period will decrease to 25 days, inventory period will increase to 20 days and payables period will remain at 30 days. The company intends to invest 100 th EUR into fixed assets. The company will not take additional loans, however, it will repay 100 th EUR of short-term loans outstanding at the end of last year. Other short-term obligations will be reduced by 50 th EUR and dividend payment during the year will be 200 th EUR. Compile also the cash flow statement using indirect method.

Balance sheet	Last year
Cash and bank accounts	430,000
Customer receivables	250,000
Inventory	87,500
Total current assets	767,500
Fixed assets	5,000,000
Total assets	5,767,500
Short-term loans	137,500
Supplier payables	175,000
Other short-term obligations	250,000
Total short-term obligations	562,500
Long-term loans	2,200,000
Share capital	400,000
Undistributed profit from previous years	2,500,000
Current year profit	105,000
Total equity	3,005,000
Total equity and obligations	5,767,500
Cost of goods sold	2,100,000
Receivables period	30.0
Inventory period	15.0
Payables period	30.0