

EXERCISE 1.

Company A is an unlevered company whose equity capital is represented by stocks listed on the Stock Exchange. The number of outstanding stocks is 15,000,000 and the market price is €25 per stock. The expected Earnings Before Interest and Taxes: $Y = E(\text{EBIT})$ is constant over time and estimated at €90,000,000 per year. The lifetime of the company is indefinite.

- a) Compute the economic return under the assumption of perfect capital market.

The company is planning to buy a competitor's company (which has the same economic risk). The capital investment required is €100,000,000. The constant expected earnings from this new investment are €27,000,000.

Questions:

Scenario 1.

The new investment is financed by issuing stocks at a price of €2,000 per stock. Calculate:

- b) The market value of Company A after it has acquired its competitor's business.
c) The number of shares issued.
d) The return required by shareholders.
e) The market price of shares.

Scenario 2.

The new investment is financed by using bonds €1000 (debt) at an interest rate of 5%. Calculate:

- f) The market value of Company A after it has acquired its competitor's business.
g) The weighted average cost of capital.
h) The return required by shareholders.
i) The market price of shares.

EXERCISE 2.

Expected earnings before interest and taxes of Company B is a perpetual amount of €5,500,000 per year. The capital structure is made up of equity capital and debt. The market value of debt is €12,000,000 at an interest rate of 8%. The corporate tax rate is 34%. For unlevered companies belonging to the same class of economic risk, the discounting rate is 17%. The lifetime of the company is indefinite.

Calculate:

- a) The market value of Company B.
b) The weighted average cost of capital.
c) The return required by shareholders.

EXERCISE 3

Company C, which belongs to the ceramic tile industry, is planning to build a new manufacturing plant. Currently, the company has no debts and the pay-out rate is 100%. The following data are available:

- Expected Earnings Before Interest and Taxes: $Y = €27.000.000$ per year.
 - Number of outstanding stocks: 10.000.000
 - Current cost of equity capital: 10%
 - Capital investment requirement for the new plant: €20.000.000
 - Increase in expected EBIT from the new plant: €3.000.000 per year
- Assumption: there are no corporate taxes.

Questions:

- a) If the new plant is financed by issuing new shares, How much will the company value?
- b) If the new plant is financed by issuing debt at 8%, How much will the company value?
- c) What is the cost of equity capital and the weighted average cost of capital for cases a) and b) above?

Assumptions: [1] The corporate tax rate is 35%; [2] The economic return is 10%.
Find the answers to questions a), b), and c) again.

EXERCISE 4.

Company D is a publishing company that is planning to restructure its financing sources. Currently, the capital structure is made up of debt and equities. The following information is available:

- Expected Earnings Before Interests and Taxes: €125.000.000 u.m.
- Pay-out rate: 100%
- Weighted average cost of capital: 10%.
- Interest Tax Shield: €560.000.
- Cost of debt: 8%.

The corporate tax rate is 35%. Restructuring the company involves issuing bonds at a rate of 8% and repurchasing 20% of outstanding shares.

Calculate:

- a) The market value of the company before the capital structure is restructured.
- b) The cost of equity capital before the restructure.
- c) The market value of the company after the restructure.
- d) From the shareholders' point of view, which financing alternative is better?
- e) The new weighted average cost of capital.

EXERCISE 5

Company E is a firm belonging to the food sector whose CEO board is studying the effect of several financing alternatives. The following information is available:

- The expected EBIT is €8 million.
- The corporate tax rate is 35%.
- The personal tax rate on dividends is 15%.
- The personal tax rate on interests is 40%.

For a long time, Company E has been financed with equity capital only. Recently, it restructured its capital structure by issuing bonds at 10% for a total amount of €16 million and repurchasing 25% of its shares without changing its financial structure.

Questions:

- a) Compute the cost of equity capital and r_{wacc} before and after restructuring.
- b) Determine the company's market value under corporate taxes before and after restructuring.
- c) Determine the personal tax rate on interest that renders the effect of debt on the company's value zero.

EXERCISE 6

Company F is an unlevered company whose equity capital is represented by stocks listed on the Stock Exchange. The number of outstanding stocks is 250,000 and the market price is €2,000 per stock. The expected Earnings Before Interest and Taxes: $Y = E(\text{EBIT})$ is constant over time and estimated at €75,000,000 per year. The lifetime of the company is indefinite.

- a) Compute the economic return under the assumption of perfect capital market.

The company is planning to buy a competitor's company (which has the same economic risk). The capital investment required is €30,000,000. The constant expected earnings from this new investment are €12,000,000.

Questions:***Scenario 1.***

The new investment is financed by issuing stocks at a price of €2,000 per stock. Calculate:

- b) The market value of Company F after it has acquired its competitor's business.
- c) The number of shares issued.
- d) The return required by shareholders.
- e) The market price of shares.

Scenario 2.

The new investment is financed by issuing debt at an interest rate of 10%. Calculate:

- f) The market value of Company F after it has acquired its competitor's business.
- g) The return required by shareholders.
- h) The market price of shares.

EXERCISE 7

The expected earnings before interest and taxes of Company G is a perpetual amount of €4,000,000 per year. The capital structure is made up of equity capital and debt. The market value of the debt is €10,000,000 at an interest rate of 10%. The corporate tax rate is 34%. For unlevered companies belonging to the same class of economic risk, the discounting rate is 15%. The lifetime of the company is indefinite.

Calculate:

- a) The market value of Company G.
- b) The weighted average cost of capital.
- c) The return required by shareholders.