**Capital structure - Example**

Companies have essentially two sources of capital. One is equity, which they get from shareholders (the members of company) and the other is loans from lenders. The companies choose the structure of these sources such that the cost of their use is minimal.

**The starting point for the company’s decision-making is the analysis of source structure in terms of Return on Equity achieved.**

**Solved example:**

Calculate Return on Equity based on these assumptions:

* total capital of company A (in thousands CZK) is 2 000 and is constituted only by equity;
* total capital of company B (in thousands of CZK) is also 2 000, out of which 1 000 is represented by debt capital with an interest rate of 10 %;
* property (in thousands of CZK) of both company A and B is therefore 2 000;
* profit of both companies before tax and interest payments is the same - 400 thous. CZK; the income (profits) tax rate is 19 %.

Solution:

|  |  |  |
| --- | --- | --- |
| Ratio | Enterprise A | Enterprise B |
| Assets (Property) | 2 000 | 2 000 |
| Capital | 2 000 | 2 000 |
| Equity | 2 000 | 1 000 |
| Debt | 0 | 1 000 |
| Earning before Interest and Taxes (EBIT) | 400 | 400 |
| Interest (Interest rate 10 %) | 0 | 100 |
| Earning before Taxes (EBT) | 400 | 300 |
| Income Tax (Tax rate 19 %) | 76 | 57 |
| Earning after Taxes (EAT) | 324 | 243 |
| ROE – Return on Equity (in %) | 16,2 | 24,3 |
| ROA – Return on Assets (in %) | 20,0 | 20,0 |

Assessment:

* Using debt capital increases ROE (24,3 % with the use of debt capital –company B; 16,2 % with the use of equity only – company A).
* As the interest rate is only 10 % and is lower than ROA – 20 %, the difference, i.e. 10 %, goes to the profit of company’s owners, the entrepreneurs; therefore the use of debt capital increases ROE for the company B.

**Example to practice**

**Example 1:**

At what amount of expected sales it becomes more advantageous for the company to use only equity, and when is it, on the contrary, more advantageous to borrow? Form your answer based on the following assignment using the Return on Equity criterion:

|  |  |  |
| --- | --- | --- |
| Ratio | Enterprise X | Enterprise Y |
| Assets (thousand CZK) | 2 000 | 2 000 |
| Sales ((thousand CZK) – lower a) | 1 000 | 1 000 |
|  - average b) | 1 500 | 1 500 |
|  - higher c) | 2 000 | 2 000 |
| Earning before Interest and Taxes (EBIT) | 20 % from sales | 20 % from sales |
| Interest | 15 % from Credit | 15 % from Credit |
| Tax rate | 19 % from Earning | 19 % from Earning |
| Credit (thousand CZK) | 0 | 1 000 |
| Equity (thousand CZK) | 2 000 | 1 000 |

Solution:

|  |  |  |  |
| --- | --- | --- | --- |
| Enterprise X | Sales a) | Sales b) | Sales c) |
| Capital |  |  |  |
| Equity |  |  |  |
| Debt |  |  |  |
| Earning before Interest and Taxes (EBIT) |  |  |  |
| Interest (Interest rate 15 %) |  |  |  |
| Earning before Taxes (EBT) |  |  |  |
| Tax rate (19 %) |  |  |  |
| Earning after Taxes (EAT) |  |  |  |
| Return on Equity - ROE, in % |  |  |  |
| Return on Assets - ROA, v % |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Enterprise Y | Sales a) | Sales b) | Sales c) |
| Capital |  |  |  |
| Equity |  |  |  |
| Debt |  |  |  |
| Earning before Interest and Taxes (EBIT) |  |  |  |
| Interest (Interest rate 15 %) |  |  |  |
| Earning before Taxes (EBT) |  |  |  |
| Tax rate (19 %) |  |  |  |
| Earning after Taxes (EAT) |  |  |  |
| Return on Equity - ROE, in % |  |  |  |
| Return on Assets - ROA, v % |  |  |  |

Assessment:

**EXAMPLE 2:**

Determine Optimal capital structure. You know After-Tax Cost of Debt and Costs of Equity (re, rd) and Tax Rate (19 %).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Debt ratio in % | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| Costs of Equity in % (re) | 15 | 15 | 15 | 15 | 17 | 18 | 20 | 24 |
| After-Tax Cost of Debt in % (rd) | 10 | 10 | 10 | 11 | 14 | 16 | 18 | 22 |

Solution:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Debt ratio in % | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| Weighted Average Cost of Capital in % (WACC) |  |  |  |  |  |  |  |  |