1. If the net present value of the project is positive (NPV> 0): the yield index (also called the profitability index) is then greater than one
2. The expected change in return on investment (security, assets, etc.) in relation to the one-percent change in return on the market portfolio is as follows:
3. The risk posed by protection against the original risk is called:
4. An absolute indicator of the level of risk is called:
5. The risk arising from changes in the development of the entire economy, affecting all businesses, and not influenced by diversification, is called:
6. The risk specific to individual projects, businesses, industries (influenced by diversification) is called.
7. An access to the risk consisting in minimizing of its consequences is called:
8. The risk-free and risk-adjusted cash flow ratio is called: security coefficient
9. Long-term property lease during which the property remains in the lessor's possession, and the tenancy period substantially coincides with the economic life of the property is called
10. The way of financing by leasing, where part of the lessor's property is covered by a loan, is called:

**Problem 2 (15 points)**

New machinery (in depreciation group 2) amounting to CZK 6 m will be financed by Umbrela Corporation by using loan or lease purchase. In both cases, instalments will be made for 5 years. This is also the expected life of the machinery. The leasing coefficient is 1.15. The down payment reaches 40%. Other leasing instalments will be regular. Interest on any loan is 9.5% p.a. The actual amount of income tax corresponds to the current tax rate on corporate tax.

**Design a suitable way of financing - leasing or loan. (5 points)**

**Calculate the current value of all tax shields in the case of bank loan financing. (3 points)**

**Calculate the value of the opportunity cost in the case of leasing financing. (2 points)**

**Problem 3 (10 points)**

Roxxon Energy Corporation is considering investing in the following device.

Capital expenditure will amount to CZK 600 k

Estimated income in Year 1:

Market growth: income amounting to 450 k with probability of 60%

Market drop: income amounting to 350 k with probability of 40%

Estimated income in Year 2 for a situation where market growth occurred in Year 1:

Market growth continues: income amounting to 600 k with probability of 80%

Market growth continues: income amounting to 400 k with probability of 20%

Estimated income in Year 2 for a situation where market drop occurred in Year 1:

Market drop continues: income amounting to 300 k with probability of 70%

Market turn on growth: income amounting to 500 k with probability of 30%

**Calculate the Net Present Value of the project. (5 points)**

The investment under consideration can be sold for CZK 310 k in the event of adverse developments after the first year, or it can be expanded with a capital expense of CZK 350 k in the event of a favourable development after the first year. Estimated earnings from expanded investment are considered in the second year as follows:

The following optimistic growth option: 1,000 k with probability of 80%

The following pessimistic variant of the market decline: 580 k with probability of 20%

**Calculate how these changes affect the current value of the project. (5 points)**

**Problem 1 (15 points)**

The following table shows a return of 2 shares + capital market return for the last 12 months.

|  |  |  |  |
| --- | --- | --- | --- |
| Period | Weyland shares | Yutani shares | Market |
| 1 | 1.75% | -1.10% | -1.50% |
| 2 | 0.25% | 0.45% | 0.20% |
| 3 | 1.45% | 1.25% | 1.30% |
| 4 | 1.50% | 1.10% | 1.40% |
| 5 | 1.75% | 1.25% | 1.65% |
| 6 | 2.75% | 1.85% | 2.30% |
| 7 | 3.75% | 2.45% | 3.40% |
| 8 | 1.75% | 1.25% | 1.65% |
| 9 | 2.80% | 1.95% | 2.40% |
| 10 | 2.95% | 2.65% | 3.10% |
| 11 | 2.40% | 1.85% | 2.50% |
| 12 | 2.10% | 1.45% | 1.10% |

**Calculate:**

* **Average return and overall risk (2 points)**
* **Systematic risk and individual risk (3 points)**
* **Beta coefficient (3 points)**
* **Alfa coefficient (2 points)**
* **Based on the table above, calculate the expected return, risk and systematic risk of the Weyland-Yutani portfolio, consisting of 40% of Weyland shares and 60% of Yutani shares. Assume a market return of 2%.(5 points)**

**Problem 4 (15 points)**

The current state of the company.

The market value of CHOAM Corp., a solvent company, amounts to CZK 350 million. The market value of equity amounts to CZK 250 million (of which CZK 35 million are retained earnings). The equity value is divided into 100 thousand of shares with a nominal price of CZK 1,000. The remainder consists of long-term debt with an interest rate of 8%. Equity costs of a solvent company in this structure amount to 14%. Return on assets is 15%. (Volatility return is 12%) The income tax rate is 19%.

Investment plan of a business:

The company considers a substantial increase in the value of assets. The company considers project A amounting to CZK 50 million with a yield of 20%, project B amounting to CZK 70 million with a yield of18%, project C amounting to CZK 80 million with a yield of 16%, and project D amounting to CZK 120 million with a yield of 14%. Any combination of these projects can be implemented.

The conservative plan for financing.

The company has CZK 35 million of retained earnings, a pledged loan of up to CZK 100 million with an interest rate of 8%. Remaining funds may be obtained, if necessary, by a combination of its own financing by subscribing to new shares (with an issue price of 10% of the nominal price) and bond financing. The issuance of bonds implies a subscription with a nominal price of CZK 10,000 with a maturity of 8 years and a nominal coupon rate of 9.5% and an issue price of 5% of the nominal price. The company does not expect a change in the capital structure.

**Specify the investment budget and select the appropriate investment projects, or a combination thereof. (4 points)**

**Calculate the Point of Indifference for the current status of the company. Calculate the calculated value with respect to the profitability achieved. (1 point)**

The aggressive plan of financing.

Company resources available are consistent with the abovementioned facts, however the management suggests increasing the company's debt. With increasing debt the cost of financial distress appears. The cost of bankruptcy is 50% of the equity. The probability of bankruptcy at 33% of debt is 1% and increases with an increasing debt. Increase in indebtedness by 1 percentage point will increase the probability of bankruptcy by 1.5 percentage point. .

**Design an investment budget, an appropriate capital structure, and select suitable investment projects for aggressive financing. (6 points)**

**Calculate the current value of interest tax shields and cost of financial distress related to the designed budget and the optimal capital structure. (4 points)**