



Exam International Financial Management

Name:

Student ID#:

1)

a) The current price of a zero-bond is 80,58 €; face value 100 €; time to maturity 6 years. What is the current market interest rate? Determine **modified duration**, **Macaulay duration** and **convexity**.

b) The current price of a bond is 90 €; face value 100 €; current market interest rate is 9%; time to maturity 3 years. What is the annual coupon payment?

Estimate the new bond prices using duration and convexity for the following yield shift: (+1.0).

2) The following liabilities are given:

$t = 1$: 2.000.000 €; $t = 2$: 2.000.000 €, $t = 3$: 1.000.000 €

An investor can choose from the following bonds:

- bond 1: (-100; 9; 9; 109)
- bond 2: (-100; 8; 108)
- bond 3: (-100; 107)

Compare the strategies ‘cash-flow-matching’ and ‘riding-the-yield-curve’. Which one is better if you assume that the yield curve is shifting by +1 percentage point? Calculate the necessary investments for both strategies.

3) Schmidt AG is proposing a rights offering. There are 1.000.000 shares outstanding at 100€ each. Book value of one share is 1€. There will be 250.000 shares offered at 70€ each.

a) Calculate the ex-rights price, rights associated with one new share, value of a right.

b) Mr. Mayer holds 50.000 shares. How much does he have to invest to keep his proportionate ownership?

c) Mr Mayer decides to invest 1.000.000 € (apart from his rights). How many shares will he get?

4) Compare the strategies ‘riding-the-yield-curve’, ‘cash-flow-matching’ and ‘duration-matching’. What do you have to consider?