

**Fachprüfung**  
**Financial Management**  
**Dr. Florian Hauser**

**07/2015**

N° 1	N° 2	N° 3	N° 4	N° 5	N° 6	Total	Note
6	6	6	6	6	10	max. 40	PS:

Name:

Studienkennzahl:

Matrikel:

**You can answer in English and German language!**

1) Bimatrix–Game: Assume one of two matrices X and Y is randomly chosen to determine the payoff for players A and B. According payoffs in both matrices are denoted in pairs as A / B. Both players rationally decide for a strategy 1 or 2 to maximize their payoffs.

Matrix X			Matrix Y		
	B1	B2		B1	B2
A1	2 / 11	13 / 10	A1	6 / 7	9 / 9
A2	4 / 8	14 / 3	A2	3 / 1	7 / 7

Calculate the expected payoffs for both players assuming that

	Exp. payoff A	Exp. payoff B
a) both players are uninformed about which matrix is chosen.		
b) there is public information about which matrix is chosen before A and B select strategies.		
c) there is secret information for A about which matrix is chosen before A and B select strategies.		
d) there is private information for A about which matrix is chosen before A and B select strategies (B is aware that A is informed).		

- 2) Your colleague argues that Random Walks cannot be a realistic description for stock markets, since the future development of firms is often foreseeable: There are prosperous times when we can be quite sure that earnings of a firm will increase, and also times when earnings are expected to decline. What would you reply?

- 3) The market is in CAPM equilibrium, and the equity premium is 6%. Stock “Blue” has the following characteristics:  $\mu_{Blue} = 0.06$ ,  $\sigma_{Blue} = 0.05$ ,  $\sigma_{sys,Blue} = 0.03$ ,  $\beta_{Blue} = 0.5$ .
- a) Calculate  $r_f$ .
  - b) Calculate  $\sigma_M$  (market risk).
  - c) Calculate the unsystematic risk of stock “blue”.
  - d) Calculate the total risk ( $\sigma$ ) of an efficient portfolio that has an expected return of 0.12.
  - e) Your personal wealth is 100.000 Euro. You already invested 20.000 Euro in  $r_f$ . The rest of your money (80.000 Euro) shall be invested in stock “blue” and in stock “red” ( $\beta_{red} = 2$ ). How much money must be invested in “blue” and “red” so that your total portfolio (worth 100.000) has a beta of 1?

- 4) There are two contingent claims A and B. Depending on the state of nature, they generate the following payoffs:

	State 1 (P=1/3)	State 2 (P=1/3)	State 3 (P=1/3)
Claim A	18	14	28
Claim B	24	32	4

Your utility function is  $U(x) = \mu(x) - \frac{\sigma(x)}{3}$ .

- Calculate the utility of claim A and claim B separately with respect to your utility function.
- Calculate the utility of a portfolio  $P$  consisting of 2 claims A and 1 claim B with respect to your utility function.
- Why is  $2 * U(A) + U(B) \neq U(P)$ ? Give an economic explanation.

5) Modigliani-Miller model on dividend policy:

- a) “There is no free lunch” is the most important condition of that model. Explain when arbitrage opportunities arise in that context, and explain how investors can exploit them.
- b) Name the most important implication(s) of that model.
- c) Explain the limitations of that model in terms of real-world applicability in corporate finance.

6) Multiple Choice.

Correct answers will bring 1 point; incorrect answers count -1 point. If a question is not answered, no points are assigned. Even with wrong answers, the total points for the multiple choice questions cannot be below 0. Comments will be ignored.

How to tick a box in the multiple choice section:

tick a box



untick a box



tick a box (again)



	true	false
The major stake of empirical studies on market efficiency proves that financial markets are at least weak-form efficient.	<input type="checkbox"/>	<input type="checkbox"/>
For a portfolio P of stocks A and B ( $\rho_{AB} = 0$ ) holds: $\sigma_P^2 = (x_A * \sigma_a + x_B * \sigma_B)^2$ .	<input type="checkbox"/>	<input type="checkbox"/>
The risk-free rate of return plays an important role when deriving the Markovitz efficient frontier.	<input type="checkbox"/>	<input type="checkbox"/>
In CAPM equilibrium, all portfolios (also inefficient ones) must be located on the security market line.	<input type="checkbox"/>	<input type="checkbox"/>
In the Modigliani-Miller model on capital structure, the risk premium on business risk will increase with increasing leverage (c.p.).	<input type="checkbox"/>	<input type="checkbox"/>
In the Schredelseker-Coin-Model, a higher level of public information will always result in a higher level of market efficiency.	<input type="checkbox"/>	<input type="checkbox"/>
In the Schredelseker-Coin-Model, well-informed agents will be the biggest profiteers when the best-informed agent (the "insider") is excluded.	<input type="checkbox"/>	<input type="checkbox"/>
Several results from empirical studies on legal insider trading suggest that stock markets are not strong-form efficient.	<input type="checkbox"/>	<input type="checkbox"/>
Financial distress can result in overinvestment, underinvestment, and cashing out.	<input type="checkbox"/>	<input type="checkbox"/>
The lower the dividend-payout-ratio, the higher the growth rate of shareholder value (ceteris paribus).	<input type="checkbox"/>	<input type="checkbox"/>

