Portfolio Management 2017 Final Exam 2
Monday, June 12th, 2017 Extras: Calculator
Exam time: 4 hours

Maximum score is 50 points. Minimum required to pass exam is 25p. Avoid essay question answers > one page. For speeding up exam correction: Please structure your answers - do not ramble. Underlining the key terms in your answers is a good idea.

1. Define briefly following terms:
a) A geometric (time-weighted) return
b) The "alpha" for a security or portfolio
c) The Capital Market Line (CML)
d) A cumulative abnormal return (CAR)
e) A factor model
(2p/sub-question; 10p in total for question 1)

2. a) You are assisting Sherlock Holmes and hired to fill in the 5 gaps in a missing table important for the case in question. Assume that the market is efficient and that assets are priced according to the CAPM. Please derive the missing figures.

(Hint: The two formulas needed are the SML equation, and the formula for decomposing an asset's variance into systematic and unique (firm specific) risk. Solving item by item the ones you have enough information on, i.e. the ones for which you know all the values but one in the relevant formula, will help to derive all the gaps. Some rows will be helpful in giving the missing items needed to solve for the gaps in other rows.)

	Beta	Expected return	Volatility (return st.deviation): σ_i	Unique risk (in variance form): σ_e^2
Stock A	0,8	4.8%	0.16	0
Stock B	2	9%		0.09
Stock C	1.0	5,5		0
Stock D	0	2%		0.36

(3 p per gap, that is **5*3 p =15 p**)

b). Assume that when you get older, you become **more** risk averse. What implications would this have for your optimal total portfolio in a CAPM-world? Would different individual risky assets be selected at later age than now? Explain. **(5p)**

(Total 20p for question 2)

Please turn page!

3. a.) Describe what is meant by *market timing* and *stock selection* as portfolio strategies. What performance measures can be used to detect the use and success of such strategies? **(6p)**

b.) Performance attribution. What does it give information of, and how can one conduct it? **(4p)**

(Total 10p for question 3)

4.) a.) Describe the APT (the Arbitrage Pricing Theory) and its main result. **(5p)**

b.) Explain for each of the following anomalies, what form of market efficiency they may represent deviations from and why (**1p** per item, total **5* 1p = 5p**):

- the post-announcement earnings drift, SS
- excess returns earned by the use of technical analysis, W
- the momentum effect for stocks, ~~SS~~ W
- excess returns earned by insiders, and S
- the Small-Firm-in-January effect. S S

(Total 10p for question 4)