EC3330

UNIVERSITY OF WARWICK

Summer Examinations 2015/16

Topics in Financial Economics: Theories and International Finance

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Time Allowed: 1.5 Hours

Answer the ONE question in Section A and answer ONE question from Section B. All questions carry equal marks. Answer Section A questions in one booklet and Section B questions in a separate booklet.

Read carefully the instructions on the answer book provided and make sure that the particulars required are entered on each answer book. If you answer more questions than are required and do not indicate which answers should be ignored, we will mark the requisite number of answers in the order in which they appear in the answer book(s): answers beyond that number will not be considered.

Section A: Answer the ONE Question

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1. Are the following statements True, False or Ambiguous? Provide a short justification for your answer. (You will be evaluated mostly on the basis of your justification.)

(a) The CAPM implies that an asset that has the same expected return as the risk free rate is uncorrelated with the market. **(10 marks)**

(b) Suppose that the interest rate for the Australian dollar is 5% while it is only 1% for the British pound. The forward rate for the Australian dollar indicates an appreciation vis-a-vis the pound as compared to the current exchange rate. **(10 marks)**

(Question 1 continued overleaf)

For parts c),d) and e) of question 1 assume that there are only three assets in the economy; A, B, and C. The returns and standard deviations for the three assets are given by:

$$\begin{aligned} \overline{r}_A &= 5\%, \overline{r}_B = 10\%, \overline{r}_C = 12\% \\ \sigma_A &= 0\%, \sigma_B = 10\%, \sigma_C = 20\% \end{aligned}$$

The correlation coefficient between assets B and C is:

$$\rho_{B,C} = 0.7$$

We ask whether these three assets are Mean-Variance efficient. If you claim an asset is efficient prove it explicitly and if it is inefficient show a portfolio that dominates it. In case you argue that it cannot be determined explain why

(c) Asset A Mean-Variance efficient. **(10 marks)**

(d) Asset B Mean-Variance efficient. **(10 marks)**

(e) Asset C Mean-Variance efficient. **(10 marks)**

Section B: Answer ONE Question

2. Suppose that the current stock price is \$100 and the risk free rate is zero. The stock does not pay any dividends. You are given a list of 1- year European call option prices for different strike prices (K). Determine whether an arbitrage opportunity exists. If your answer is positive describe all arbitrage strategies and if not explain why not. **(50 marks)**

Hint: Note that the stock itself can be viewed as a call option.

C	K
60	44
90	30
120	8

3. Suppose that the current stock price is \$100 and the risk free rate is 10%. The stock does not pay any dividends. You are given prices of a European call option and a European put option both with strike of K=96: C(96)=20, P(96)=15 **(50 marks)**

(Question 3 continued overleaf)

(a) Is there an arbitrage opportunity? If your answer is positive describe an arbitrage strategy and if not explain why not.

(b) How would your answer to part a) change if the risk free rate was zero?

(End)