2015 EXAMINATIONS

Lancaster University

PART II (SECOND AND FINAL YEAR)

ACCOUNTING AND FINANCE

AcF 305 INTERNATIONAL FINANCIAL AND RISK MANAGEMENT

(2 hours + 15 minutes reading time)

Answer ALL QUESTIONS and SUB-QUESTIONS.
Question 1 carries 30 marks and questions 2 to 8 each carry 10 marks.
Answer Question 1 using the MCQ sheet and Questions 2 to 8 in an answer booklet.

---

1) Test

I. Identify the one **<u>false</u>** statement about purchasing power parity:

(A) Purchasing power parity would only hold if commodity price parity held for every individual good.
(B) The real exchange rate measures how far the nominal rate differs from the purchasing power parity rate.
(C) Absolute purchasing power parity is said to hold if the real exchange rate equals unity.
(D) When analysing prices of a Big Mac across the world, one can observe that developed countries tend to have higher real exchange rates.
(E) Relative purchasing power parity is said to hold if the real exchange rate is constant.

(3 marks)

II. Identify the one **<u>false</u>** statement about the value of a forward:

(A) Covered interest parity holds in perfect markets.
(B) The value of a forward at inception is zero.
(C) The potential gain of a forward purchase is unlimited.
(D) The potential gain of a forward sale is unlimited.
(E) A forward bought at 1.20 USD/EUR cannot be worth more than a call option with a strike price of 1.20 USD/EUR.

(3 marks)

III. Identify the one **<u>false</u>** statement about futures markets compared with forward markets. Futures markets are...

(A) ... more flexible.
(B) ... more open.
(C) ... more regulated.
(D) ... more secure.
(E) ... more transparent.

(3 marks)

IV. Identify the one **<u>false</u>** statement about exchange rate exposure:

(A) Contractual exposure includes loans denominated in FC and forward currency contracts.
(B) If all contractual exposure is continuously hedged, a company is only exposed to operating exposure.
(C) Operating exposure may exist if a company exports its products.
(D) Operating exposure may exist if a company does not export its products.
(E) Accounting exposure does not directly affect cash flows.

(3 marks)

V. Identify the one **false** statement about the international CAPM:

(A) InCAPM is used to derive an expected cost of capital.
(B) If the terms which measure the exposure to foreign currencies are omitted from the InCAPM, it becomes the standard CAPM.
(C) InCAPM should be used for valuing domestic investments if the home country is part of an integrated financial market.
(D) InCAPM should not be used for valuing domestic investments if the home country is totally isolated.
(E) The CAPM does not take exchange rates into account.

(3 marks)

VI. Daimler, a German company, allows customers from the United Kingdom to delay their payments by up to three months. Which strategy does completely eliminate all possible future foreign exchange rate exposure?

(A) Always invoice in GBP.
(B) Immediately sell future GBP proceeds using futures contracts.
(C) Immediately sell future GBP proceeds using forward contracts.
(D) Always invoice in EUR.
(E) None of the above. In the real-world, Daimler can never completely eliminate all possible future exchange rate exposure.

(3 marks)

VII. Identify the one **true** statement about bid/ask quotes:

(A) The bid-ask spread increases with liquidity.
(B) The "bid" is always larger than the "ask" quote.
(C) The bid-ask quotes do not affect forward contracts.
(D) As the customer of a bank, you always transact at the best favourable rate, i.e., you buy at the ask rate and you sell at the bid rate.
(E) When the currency you transact in is in the denominator (as is always the case in our textbook), the bid rate is lower than the ask rate.

(3 marks)

VIII. Identify the one **true** statement about currency options at expiration when the strike price is GBP/NZD 0.50 and the spot rate is GBP/NZD 0.55:

(A) An American option has lower value in comparison with a European option.
(B) Being short of a call results in a positive value.
(C) Being short of a call results in a negative value.
(D) Being long of a put results in a positive value.
(E) Being long of a put results in a negative value.

(3 marks)

IX. Identify the one **true** statement about an optimal (efficient) portfolio:

(A) The ratio of a stock's expected excess return and its variance is equal across all stocks in the portfolio.
(B) The ratio of a stock's expected excess return and its covariance with the portfolio must be equal across all stocks.
(C) The ratio of a stock's expected excess return and its covariance with any other risky asset is the same across all stocks.
(D) The ratio between the investor´s risk aversion and the stock´s expected excess return is the same across all stocks.
(E) None of the above.

(3 marks)

X. Identify the one **false** statement about a currency option with a strike price of EUR/EGP 8.00:

(A) The underlying is the exchange rate between the euro and the Egyptian pound.
(B) A put on the EUR/EGP exchange rate can be used to hedge a future cash inflow in EGP.
(C) You, as a buyer of a call option, will lose money at expiration if the EUR/EGP spot rate is 8.50.
(D) The option is said to be in the money if it is a call and the EUR/EGP spot rate is 8.50.
(E) Combining a short put and a long call replicates the payoff of a forward purchase.

(3 marks)

(Total 30 marks)

2) Answer part A) or B):

A) In the past, there were time periods when exchange rates were fixed relative to gold. Explain the advantages and disadvantages of such an exchange-rate regime. In addition, name and explain other exchange-rate regimes.

B) Recently, there has been an announcement of quantitative easing by the ECB. The ECB pretends to buy EUR denominated bonds (government and private sector bonds) in order to raise the Eurozone inflation. Then, what are the expected consequences to the EUR/USD exchange rate? Would European products become more competitive – i.e. would exports increase? Explain your view on this.

(10 marks)

Please turn over

3) Answer part A) or B):

A) The following table shows spot rates against the GBP, i.e. XXX/GBP. Note: Bid-ask spreads show only the last three decimal places.

Country	Code	Midpoint	Spread
Norway	NOK	11.5542	385-699
Turkey	TRY	2.7586	278-894

Then:

- **i)** What is the bid-ask quote for NOK/GBP?
- **ii)** What is the bid-ask quote for GBP/TRY?
- **iii)** What is the synthetic NOK/TRY rate? Is there an opportunity of arbitrage or shopping around if the NOK/TRY spot rate is 4.1369-4.2424?

B) Explain how arbitrage and shopping around would ensure the law of one price. Your answer should include an example where there is an arbitrage opportunity and where you must explain the forces that will set a stable equilibrium.

(10 marks)

4) Answer part A) or B)

A) You are given the following data: the spot exchange rate is GBP/USD 0.75; the p.a. simple interest rate on a six month deposit is 4% in UK and 6% in US.

Required:

- **i)** The forward rate for a six-month forward contract.
- **ii)** The time-T GBP value of a GBP-t 1 investment.
- **iii)** The time-t USD value of a USD-T 1 loan.
- **iv)** The time-T USD value of a GBP-T 1 forward sale.
- **v)** The time-t USD value of a GBP-t 1 sale.

Remark: small t refers to the current moment, and capital T refers to the delivery date.

B) Explain how one can use a forward contract to speculate with currencies and provide an example of such a situation. Moreover, explain how one could replicate the payoff of a forward contract with other product(s). What would be the price of this product? Why?

(10 marks)

5) Answer part A) or B)

A) Explain and define the payoffs for an agent speculating (for an increase and a drop) at time t about forward contracts signed at time $T_1 > t$ with delivery at time $T_2 > T_1$.

B) If a company only does business within the home country, would it make sense for this company to use exchange rate forward/future/option contracts? Explain this and provide an example.

(10 marks)

6. Answer part A) or B)

A) You are expecting a cash inflow (an accounts receivable) in foreign currency at some point in the future. You have hedged the home currency value of this cash flow by using an option.

Explain which option you would choose (call or put) and show graphically how the option limits negative consequences created by a low exchange rate (given in HC/FC), without eliminating the potential benefits from a high exchange rate.

(Note: your graph should have the exchange rate on the x-axis and the value of your position on the y-axis.)

B) Consider the following spot rates, bid and ask quotes, offered by three market makers (MM):

MM1: 9.50-9.70; MM2: 9.60-9.90; MM3: 9.75-10.15.

Required:

i) Is there an arbitrage opportunity? If so, how would you exploit it?

ii) What simple rule of thumb does Sercu (2009) suggest to check whether there are arbitrage opportunities?

iii) In the absence of market maker MM3, would there still be an arbitrage opportunity? If not, would there at least be an opportunity to shop around?

iv) In what sense is identification of an arbitrage opportunity different from shopping around?

(10 marks)

7. Answer part A) or B)

A) A Canadian investor wants to compute the cost of capital for several different assets. He has learned that in an integrated market a firm's expected equity return is no longer determined by the standard CAPM, but instead by a CAPM extended by exposures to changes in spot exchange rates – the international CAPM.

Required:
Without any other knowledge, explain whether the investor should expect a positive, zero or negative relation towards the spot exchange rate (denominated in CAD/USD) for:

i) An investment into the Canadian riskfree rate.
ii) An investment into the US riskfree rate.
iii) An investment into the shares of a Canadian importer.
iv) An investment into the shares of a Canadian exporter.

B) Tobin tax: the idea of a Tobin tax on financial transactions is that one can reduce speculative movements and then prices will reflect fundamentals. However, many economists are against this tax. If we know that European authorities will set this tax in a month, what could be the consequences in the EUR (home currency)? How could you hedge your exposure if you hold EUR denominated assets?

(10 marks)

8. Answer part A) or B)

A) Explain and comment on the underlying assumptions of the formula below:

$$E(\tilde{r}_{DAI}-r_0)=\beta_{DAI,w}E(\tilde{r}_w-r_0)+\gamma_{DAI,s_{US}}E(\tilde{s}_{US}+r^*_{0,US}-r_0)+\gamma_{DAI,s_{UK}}E(\tilde{s}_{UK}+r^*_{0,UK}-r_0),$$

where DAI is a German company. In addition, explain whether this formula would be appropriate to evaluate a home project if the home country does not belong to an integrated market.

B) Assume that two countries, the US and the UK, are part of an integrated market. Explain how we can model the cost of capital for a US company and how it is affected by the exchange rate of both currencies, the USD and the GBP.

(10 marks)

END OF PAPER