Lancaster University

PART II   SECOND AND FINAL YEAR

ACCOUNTING AND FINANCE

Ac.F305   INTERNATIONAL FINANCIAL AND RISK MANAGEMENT (MOCK)

(2 hours plus 15 minutes reading time)

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During the reading time, you are permitted to annotate the question paper only. You are not permitted to write in the answer book during the reading time. The end of the reading time will be announced in the examination venue.

This examination paper consists of TWO sections, A and B, worth 30 and 70 marks, respectively.

Answer ALL questions in each section.

Ensure that the start and end of each question is clearly identifiable.

Electronic calculators with scientific and statistical functions are permitted, provided they are not programmable, do not allow graphs to be plotted and do not include a computer algebra system (CAS).

The exam is closed-book.

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END OF PAPER

SECTION A

SECTION A CONSISTS OF MULTIPLE-CHOICE QUESTIONS (MCQs) 1 TO 10.

ANSWER ALL QUESTIONS. EACH QUESTION IS WORTH 3 MARKS.

THERE IS NO PENALTY FOR AN INCORRECT ANSWER.

BELOW YOU CAN FIND A SAMPLE MSQ, WHILE THERE WILL BE 10 MCQS ON THE EXAM.

1. Identify the one **true** statement about the current banking system:

    (a) The assets of a commercial bank cannot contain loans to the private sector.
    (b) Some UK commercial banks are not required to hold a deposit with the central bank.
    (c) The money supply M1 is defined as the money multiplier times the money supply M0 (i.e., $M1 = m * M0$).
    (d) The money supply M0 is defined as loans to the private sector plus loans to the government sector (i.e., $M0 = D + G$).
    (e) None of the above.

TOTAL 30 MARKS

END OF PAPER

SECTION B

SECTION B CONSISTS OF QUESTIONS a-e.

ANSWER ALL QUESTIONS

(a)

Required:

i)   In the current monetary system, explain how central banks influence the money supply.

(5 marks)

ii)   Explain why monetary policies of central banks are important for exchange rates. Hint: Consider the covered interest parity formula.

(5 marks)

(b)   Assume that the exchange rate between the British pound (GBP) and the Chinese yuan (CNY) is CNY/GBP 10. Also assume that the per annum interest rate in China is 6%, and the per annum interest rate in Great Britain is 4%. A bank offers to sell you call options on the British pound with a time-to-maturity of one year and a strike price of CNY/GBP 9 for a price of GBP 0.1.

Required:

i)   Draw a diagram which shows the payoff at expiration from buying the above CNY/GBP call option. Label the axes.

(3 marks)

ii) There are arbitrage conditions imposing limits on the prices of options. Explain the arbitrage relationship between the value of a call option and the value of a long forward contract. Also explain the intuition behind it.

(5 marks)

iii) Based on the answer to part (ii), does the bank's offer violate this arbitrage condition? Should you therefore accept the offer or should you reject it?

(3 marks)

END OF PAPER

iv) If you accept the offer, is there an arbitrage opportunity? Explain how you would exercise it.

(4 marks)

(c)   You work for a German firm and are asked to hedge an outflow of MXN (Mexican peso) 100m with futures contracts. However, no futures on EUR/MXN is available. After doing some research, you find that EUR/MXN and EUR/USD are correlated because Mexico and the United States share a border and therefore there is a high volume of trade between the two countries. Hence you decide to hedge the risk with EUR/USD futures contracts. Additionally, you consider a EUR/CAD future. In order to determine your hedging positions, you estimate a multiple regression model. The regression output is, with t-statistics in parentheses and R2 = 0.67, as follows.

$$\Delta S[EUR/MXN] = a + 0.5\Delta f[EUR/USD] + 0.04\Delta f[EUR/CAD].$$
              (9.32)   (0.1)

Required:

i)   If a USD contract is for USD 10m and an CAD contract for CAD 5m, explain how you will hedge if you use both contracts.

(5 marks)

ii)   Should you use both contracts? Explain.

(5 marks)

iii)   Now assume that the German firm hedges the outflow of MXN perfectly using forwards on EUR/MXN. Draw a diagram which shows the payoff of the outflow of MXN and the forward position which hedges the exposure. Label the axes.

(5 marks)

END OF PAPER

(d) Corporate hedging can create shareholder value in the presence of market imperfections, such as taxes, financial distress costs or agency costs.

Required:

i)   Explain how corporate hedging can create shareholder value in the presence of taxes.

(5 marks)

ii)   Explain how corporate hedging can create shareholder value in the presence of financial distress costs.

(5 marks)

iii)   Explain what agency costs are and how corporate hedging can create shareholder value in the presence of agency costs.

(5 marks)

(e) The spot exchange rate is INR/GBP 58. The annual simple interest rate on a nine-month deposit is 9% in India and 3% in the UK. Note: t is today and T is the end of the in-vestment period.

COMPUTE

i)   The INR/GBP forward rate for a nine-month forward contract.

(3 marks)

ii)   The INR/GBP swap rate for a nine-month period.

(3 marks)

iii)   The time-T INR value of a time-t INR 10,000 investment.

(3 marks)

END OF PAPER

iv)   The time-t GBP value of a time-t INR 5,000 spot sale.

(3 marks)

v)   The time-t INR value of the proceeds of a time-T GBP 500 loan.

(3 marks)

TOTAL 70 MARKS

END OF PAPER