2018 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 from Section A on the multiple-choice answer sheet provided.

Answer **ONE** question from **Section B**
Show your workings when a question requires this. Failure to show your workings may result in a loss of marks.

Please turn over

SECTION A

Section A consists of Questions 1 to 10. Answer ALL questions. There is only ONE right answer for each MCQ.

1. Identify the true statement about money:

a. Money is not a useful mechanism to exchange goods.
b. Money does not help to disentangle the buy and sell side of an economic transaction.
c. Animals are better instruments to exchange goods.
d. Money must be storable, easy to handle and have a constant purchasing power in order to be a good exchange mechanism
e. None of the above.

2. Identify the one false statement about Bitcoin:

a. Bitcoin creator is Satoshi Nakamoto, however nobody has proved his identity.
b. Bitcoin offers the promise of lower transaction fees than traditional online payment mechanisms.
c. There are no physical Bitcoins.
d. Bitcoins are not issued or backed by any central bank.
e. Bitcoin's price can fluctuate dramatically (e.g. price drops/rises of about 50% in less than one month). It is therefore a good substitute of paper money.

3. Identify the one false statement about the Balance of Payments:

a. It records all transactions between one country and the rest of the world.
b. There are two main accounts plus a section accounting for statistical discrepancies.
c. Transactions between two residents with same nationality will not be typically recorded in their national Balance of Payments.
d. Transactions between residents of two different countries will be typically recorded in the Balance of Payments of both countries.
e. All of the above.

4. Identify the one true statement about spot exchange rates.

a. As a bank customer, the bid quote is normally larger than the ask quote.
b. As a bank customer, the bid quote is normally lower than the ask quote, and the bid quote represent the buying rate and the ask quote represents the selling rate.
c. We define exchange rates as home currency (HC), against foreign currency (FC), this is HC/FC.
d. The liquidity of currencies in the spot market depends on maturity.
e. None of the above are true.

5. Identify the one true statement about currency forward contracts.

a. Forward contracts stipulate the price (in HC) of FC units that are bought or sold at some point in the future.
b. Forward contracts do not represent a binding obligation and participants can walk away from their obligation whenever they wish.
c. The swap rate of a forward contract is equal to the difference between the spot rate and the forward rate, that is $S_t - F_{t,T}$.
d. The swap rate of a forward contract is always positive.
e. All of the above.

6. Identify the one false statement about currency forward rates in the absence of arbitrage opportunities and no bid-ask spreads.

a. The covered interest parity (CIP) theory says that synthetic forward rates and direct forward rates should be equal.
b. A forward rate determines the risk-adjusted expected value of spot rates at maturity.
c. There is no possibility for arbitrage opportunities by creating profitable synthetic forward contracts using money and foreign exchange markets.
d. An increase of home country interest rates, relative to foreign country interest rates, leads to an expected devaluation of the home currency.
e. Forward rates are normally higher than spot rates for most currencies.

7. Identify the one true statement about currency forward contracts in the absence of bid-ask spreads.

a. If you believe that the spot rate in 3 months will be larger than today's 3-month forward rate, you should then sell forward.
b. Extreme bin hedging (hedging the present value of all future FC cashflows), carries very little risk.
c. A combination of forward contracts with the same maturity and different inception allow us to speculate on the value of forward contracts.
d. The best way to hedge against FC cashflows is to simply avoid FC cashflows and invoice always in HC. There is no economic loss from doing this.
e. None of the above.

8. Identify the one false statement about currency future contracts:

a. Future contracts are less liquid than forward contracts.
b. Future contracts can be traded in organized markets with a centralized clearing house.
c. Hedging with future contracts can be difficult because of maturity mismatch, currency mismatch, and because the contract size may not cover the exact exposure.
d. To hedge with future contracts we normally apply the minimum-variance method.
e. All of the above.

9. Identify the one true statement about currency options:

a. Forward, future and option contracts have the same payoff function at maturity.
b. A currency option contract gives you the right, but not the obligation, to buy or sell FC at some point in the future.
c. If the spot rate at maturity is higher than the strike price, it is optimal to exercise the option.
d. The option writer of a call option will have a positive payoff if the spot rate at maturity is higher than the strike price.
e. European options allow us to exercise the option at any time between inception and maturity.

10. Identify the one false statement about InCAPM.

a. The InCAPM allows us to compute the international cost of capital when markets are integrated.
b. For a segmented market, we compute the cost of capital with the standard one-country CAPM.
c. The InCAPM is simply the CAPM plus one or more currency risk factors.
d. To compute the InCAPM we run a regression of stock returns on the returns of a world market index plus all the currency risk factors.
e. The InCAPM takes into account currency risk for international investors.

(Total of 30 marks)

SECTION B

Answer EITHER Question 11 or Question 12. Answer all part of the chosen question.

Approximate your numerical results to 4 decimal places.

QUESTION 11

ANSWER ALL PARTS OF THIS QUESTION

a. Imagine that your company is going to receive certain amount of foreign currency (FC) in 6 months (this is, T_1) from one of your foreign clients. You are going to use a future contract to hedge this exposure. The features of this contract are the following:

1) you do not have a future for the currency that you are exposed to, therefore you use another FC as a hedge;

2) the maturity of this future contract is one year (this is, T_2);

3) the size of the future contract is one unit of the FC that you use as a hedge.

Assume that the spot rate in 6 months can take any of the following three values in home currency (HC) units: 4, 5, or 6. In addition, assume that the cashflows that you can obtain from one future contract in 6 months can take any of the following three values in HC units: 5, 6, or 8. Assume that the three scenarios for the spot rate and for the future contract cashflows are equally likely.

Note: Remember from the course slides that the cashflows of a future sale are defined as $\beta \times (f_{t,T2}^{(h)} - \tilde{f}_{T1,T2}^{(h)})$*, where* β *is the number of FC we short of the hedge in* T_2*. Therefore, the cashflows from each future contract is* $(f_{t,T2}^{(h)} - \tilde{f}_{T1,T2}^{(h)})$

REQUIRED:

i. Define the concept of hedging in the context of currency markets.
[5 marks]

ii. Describe the main differences between future contracts and forward contracts.
[8 marks]

iii. Determine the expected value of the spot sale in 6 months, the expected cashflow in 6 months from shorting $\beta = 2$ units of the FC in one year, and the expected cashflows of the combination of the spot sale and the future contract.
[15 marks]

iv. Describe the statistical rule to hedge FC exposure using future contracts.
[5 marks]

b. Consider two countries (country A and country B). Mike lives in country A, and Mario lives in country B. Mike has an income of 3,000 units of his home currency (HC_A), and Mario has an income of 2,000 units of his home currency (HC_B). The consumption basket in country A is worth HC_A 300.

REQUIRED:

i. Discuss what the consumption basket in country B should be so that Mike and Mario have the same purchasing power.

[5 marks]

ii. Suppose that the spot rate is $S_{A/B} = 1.7$, where country A is the home country and B the foreign country. Calculate and explain what the real exchange rate is given the solution in part (i).

[7 marks]

iii. Discuss and explain the law of one price in the context of purchasing power parity theory.

[5 marks]

c. Rollexx Ltd sells watches in the US for USD 100. Festine SA, a French competitor, sells the same watches for EUR 25 in Europe. Festine SA always sells watches at EUR 25, and will start selling watches in the US at the exchange rate $S_t^{USD/EUR}$ (i.e. EUR 25 x $S_t^{USD/EUR}$) as soon as they can compete in prices with Rollexx. Once Festine has entered in the US market, Rollexx needs to match their price.

REQUIRED:

i. Explain under which circumstances Festine will enter in the US market to sell watches.

[5 marks]

ii. Define a strategy using currency option contracts to hedge the exposure faced by Rollexx against the competition with Festine.

[5 marks]

iii. Draw a diagram containing Rollexx's exposure, the payoff function of the hedging strategy defined in the previous part, and the combination of the two cashflows.

[10 marks]

(Total of 70 Marks)

QUESTION 12

ANSWER ALL PARTS OF THIS QUESTION

a. Suppose that your company will receive 300 units of certain foreign currency (FC) in one year. In addition, your company will receive FC 400 units in two years. Assume that effective interest rates, both in the home country and in the foreign country, are equal across all maturities; this is, $r_{t,T}$ is constant for all T. The home country effective interest rate is r = 3%, and the foreign country effective interest rate is r* = 7%.

REQUIRED:

i. Explain how to hedge the two FC exposures that the company has using a single forward contract with maturity in 1.5 years.

[15 marks]

ii. If the forward rate with maturity in 1.5 years is $F_{t=0,T=1.5}(HC/FC) = 5$, what would be the home currency (HC) value of the amount of FC hedged with a single forward contract in the previous part?

[5 marks]

iii. Discuss why the bid-ask spread of forward contracts can increase with the maturity of the forward contract.

[5 marks]

iv. Discuss how we could synthetically sell forward a certain amount of foreign currency.

[5 marks]

b. Maria lives in country S, and Sara lives in country E. Maria has an income of 2,000 units of her home currency (HC_S), and Sara has an income of 3,000 units of her home currency (HC_E). If markets are perfect, the two incomes have the same purchasing power, however, Sara does not believe that the two friends are equally rich.

REQUIRED:

i. Discuss how Maria and Sara can have the same purchasing power.

[5 marks]

ii. What would be the purchasing power parity rate in this example?

[5 marks]

iii. Discuss why the absolute purchasing power parity theory does not imply the commodity purchasing power parity theory.

[5 marks]

c. Answer the following questions about currency options:

i. Describe the payoff function of European call and put options within the context of currency markets. You can use graphs, however a discussion of each graph is necessary.

[5 marks]

ii. Discuss what the arbitrage conditions are of a European put option.

[5 marks]

iii. Discuss how you could obtain a sure profit from a failure of the arbitrage condition described in the previous part.

[10 marks]

iv. Describe what is the put-call parity within the context of currency markets.

[5 marks]

(Total of 70 Marks)

END OF PAPER