

**This paper is not to be removed from the Examination Halls**

**UNIVERSITY OF LONDON**

**279 0121 ZB**

**BSc degrees and Diplomas for Graduates in Economics, Management, Finance and the Social Sciences, the Diploma in Economics and Access Route for Students in the External Programme**

**International Financial Markets**

Friday, 19 May 2006 : 10.00am to 1.00pm

Candidates should answer **FOUR** of the following **EIGHT** questions. All questions carry equal marks.

A hand held calculator may be used when answering questions on this paper but it must not be pre-programmed or able to display graphics, text or algebraic equations. The make and type of machine must be stated clearly on the front cover of the answer book.

**PLEASE TURN OVER**



1. a. The yields to maturity on five zero-coupon bonds are given as follows:

<i>Years to Maturity</i>	<i>Yield (%)</i>
1	12.0
2	14.0
3	15.0
4	15.5
5	15.7

What is the implied one year forward rate of interest in two years time?

According to the expectations hypothesis, what return would you expect to receive if you bought a bond at the beginning of the second year and sold it at the beginning of the fourth year? **(10 marks)**

- b. 'Supply and demand determine relative interest rates like everything else. Therefore the segmented market theory has firm foundations.' Critically discuss. **(15 marks)**

2. You are given the following information from the foreign exchange market:

**Dollar Spot - Forward Against the Dollar**

Country	Currency	Closing mid-point	Bid / offer spread	One year Rate
India	(Rs)	45.5250	000 - 500	46.535
Japan	(Yen)	106.135	120 150	105.53
Taiwan	(T\$)	33.48	700 900	32.92

- a. Write down the Yen/US\$ bid and offer rates and calculate the spot cost, to an American importer, of buying 100 m Yen of electronic components. **(5 marks)**
- b. A Taiwanese based company is due to receive a payment of 10 million Indian rupees (Rs) in 12 months time. It wishes to sell this forward now. Calculate the amount received in T\$. **(5 marks)**
- c. Using the Yen/\$ rate, does the 12 month forward value of the \$ stand at a premium or a discount to the spot? If 12 month Eurocurrency rates are 0.5% for the Yen and 2.5 % for the US\$ show how a US arbitrageur might profit from any mispricing. For the arbitrage use a principal of Yen 100,000,000. Explain your reasoning. **(15 marks)**

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3. a. Samuel Samosir who trades in currencies for Peregrine Investments in Jakarta, Indonesia, focuses nearly all of his time and attention on the US\$ /Singapore \$ (\$/S\$) cross rate. The current spot rate is \$0.6000/S\$. After considerable study this week, he has concluded that the Singapore dollar will appreciate versus the US dollar in the coming 90 days, probably to about \$0.7000/S\$. he has the following options on the Singapore dollar to choose from:

Option	Strike	Premium
Put on S\$	\$0.6500/S\$	\$0.00003/S\$
Call on S\$	\$0.6500/S\$	\$0.00046/S\$

Should Samuel buy a put or a call on Singapore dollars?

What is Samuel's break-even price?

What is Samuel's gross profit and net profit (including premium) if the spot rate at the end of the 90 days is indeed \$0.7000/S\$?

What is Samuel's gross profit and net profit (including premium) if the spot rate at the end of the 90 days is \$0.8000/S\$? **(15 marks)**

- b. Using a binomial option pricing model examine the difference in pricing of two call options, one on a share with high volatility and one on a share with low volatility. Both options share the same price for the underlying, the same exercise price and the same time to expiry. **(10 marks)**

4. a. Distinguish between a currency swap and an interest rate swap. **(10 marks)**
- b. AA and BB are companies with credit standings to match their names. They each wish to borrow \$10 million for 3 years and have a choice of floating-rate financing or fixed rate financing. AA desires floating-rate financing. It has access to fixed-rate financing at 7.40% and to floating-rate financing at LIBOR+ 0.5%. BB desires fixed-rate financing. It presently has access to floating-rate financing at a margin of 250 basis points above LIBOR and to fixed-rate financing at an interest rate of 10%.
- All rates are expressed on a per annum basis.  
A bank quotes 3 year US \$ swaps at 7.12% / 7.16% for LIBOR.
- Calculate:
- i. the basis point saving to AA and BB if they borrow and then engage in a swap to achieve their desired funding.
- ii. the annual income to the swap bank from the transaction if LIBOR settles at 6%. **(10 marks)**
- c. Why do parties bother with a swap bank? **(5 marks)**
5. How do eurocurrency markets differ from domestic money markets? Examining the features of roll-over and syndicated loans, plus any one other instrument of your own choosing, demonstrate their attractiveness to market participants.

PLEASE TURN OVER

- 6 a. Tek, a US based company, has made a £1,000,000 bid to supply and install a network monitoring system for British Telecom in Manchester, UK. The bid is good for 30 days, at which time the winner of the bidding process will be announced. Other bidders are expected to be Agilent, Siemens, and at least two British companies.

If Tek wins the bid, it will have 60 days to build, install and test the system. British Telecom will make full payment 30 days after that. During this month, Tek will account for the £1,000,000 as an account receivable. Barclay's Bank (UK) has offered Tek the following quotes:

Spot rate	\$1.5700/£
1-month forward rate	\$1.5720/£
4-month forward rate	\$1.5750/£
1-month put option on pound (1.58/£ strike),	\$0.006/£ premium
4-month put option on pound (1.58/£ strike),	\$0.012/£ premium

What should Tek do to hedge this bid? Consider the relative merits of not hedging, hedging with forwards and hedging with puts. **(15 Marks)**

- b. Assess the relative importance of interest rates, the spot exchange rate and expectations in determining the price of a currency future? **(10 marks)**

- 7 a. i. Explain how forward rate agreements (FRAs) are priced. **(5 marks)**
- ii. Bank A sells to bank B a €2,500,000 FRA for a three-month period beginning three months from today and ending six months from today (a "three against six"). The agreed rate is 3 % per annum. On maturity the settlement rate is 4% per annum. Calculate the losses/ gains for the two banks. **(5 marks)**
- b. What are the advantages of an FRN over (i) a roll-over loan and (ii) a fixed coupon eurobond? **(15 marks)**

- 8 a. The correct measure of risk for an inefficient portfolio or individual asset is beta, but the correct measure for an efficient portfolio is standard deviation.
- Critically discuss. **(15 marks)**
- b. Returns and standard deviations for two securities are given in the table. The correlation between returns is 0.
- |                  | X   | Y   |
|------------------|-----|-----|
| Expected returns | 15% | 10% |
| Std. Deviation   | 12% | 18% |
- i Calculate the return and standard deviation of the portfolio given that 40% of the funds are put into X and 60% into Y. **(5 marks)**
- ii Construct a portfolio that dominates the above combination. **(5 marks)**

END OF PAPER

