

DP07

Treasury

11 OCTOBER 2005

1. Time allowed : Three (3) hours
2. Total number of questions : Six (6) questions
3. Number of questions to be answered : Five (5) questions [20 marks each]
4. Show details of workings where appropriate. Silent, non-programmable calculators may be used.
5. Begin each answer to a new question on a fresh page.
6. Answer **all** questions in **English**.
7. A blank page is provided at the end of the question papers for rough work.

ANSWER FIVE (5) QUESTIONS ONLY

1. (a) Explain the following terminologies:
- (i) Bid rate [1]
 - (ii) Offer rate [1]
 - (iii) Tom rate [1]
 - (iv) Spot rate [1]
 - (v) Discount [1]
 - (vi) Premium [1]
- (b) "Major currencies closed higher against the MYR yesterday as the USD was affected by the release of the US consumer inflation data. The US Treasury Secretary's call for China to further increase its currency's flexibility also pressured the USD."
- (i) Why was the USD affected by the US consumer inflation data? [2]
 - (ii) Name **two** advantages for China to further increase its currency's flexibility. [2]
- (c)
- (i) State **three** characteristics of the foreign exchange market. [3]
 - (ii) Name **three** participants in the foreign exchange market. [3]
- (d) You are the treasurer of Impex Berhad, a Malaysian multinational company which exports its products to other countries. The export invoices are denominated in USD, JPY, AUD, GBP and EUR. Impex Berhad also imports some of its components from Japan and Australia, which are invoiced in USD.
- Bank Negara Malaysia recently announced that companies are allowed to open foreign currency accounts with banks locally.
- (i) State **one** advantage and **one** disadvantage of Impex Berhad opening a foreign currency account with a bank locally. [2]
 - (ii) Which foreign currency accounts should Impex Berhad open? Give reasons for your answer. [2]
- (Total:20 marks)

2. The following rates are quoted:

	USD/MYR	AUD/USD	USD/JPY
Spot (11 October 2005)	3.7995/05	0.7600/10	122.90/00
1-month	15/0	20/10	20/30
2-month	25/15	30/20	50/60
3-month	50/40	45/35	70/80
4-month	80/70	60/50	100/110
5-month	110/100	75/65	130/140
6-month	160/140	90/80	160/170

Based on the above rates, calculate the following (assume no margins or charges are imposed and all exchange controls/regulations are complied with):

- (a) Bank buys AUD/USD value spot [1]
- (b) Bank sells USD/JPY value spot [1]
- (c) Bank sells AUD/MYR value 1-month fixed delivery [2]
- (d) Bank buys AUD/MYR option 2-month to 3-month [3]
- (e) Bank buys JPY/MYR option spot to 1-month (express answer in 100 units) [2]
- (f) Bank sells JPY/MYR 3-month fixed delivery (express answer in 100 units) [2]
- (g) Price quoted to exporter for USD/MYR option 5-month to 6-month [3]
- (h) Price quoted to importer for JPY/MYR option 4-month to 5-month (express answer in 100 units) [3]
- (i) A local exporter would be receiving USD400,000 export proceeds on the spot date. The company wants its export proceeds to be effected as follows:
- Convert USD150,000 into MYR using the forward fixed delivery contract maturing spot date transacted earlier at 3.8025.
 - Convert USD50,000 into AUD and the remaining amount into JPY and maintain them in the foreign currency accounts.
- (i) How much export proceeds in MYR would the exporter receive by utilising the forward fixed delivery contract? [1]
- (ii) What is the amount of AUD to be credited into the AUD account? [1]
- (iii) What is the amount of JPY to be credited into the JPY account? [1]
- (Total:20 marks)

3. (a) An interbank dealer entered a trade where he bought EUR3million against USD at 1.2589 value spot. However, the market turned volatile and he squared off his position by disposing the EUR against the USD at the prevailing market rates, which were:

Spot EUR/USD	1.2566/72
Spot USD/MYR	3.8000

- (i) What was the profit/loss from the above transactions (in MYR)? [2]

- (ii) The interbank dealer's loss limit is USD9,000.
 What is the stop-loss order rate that the dealer should set so that he would not exceed the loss limit? [2]

- (b) As an interbank dealer, you made a price in SGD of "10/15" (the big figure was 1.65) to a broker.

- (i) Under normal circumstances, what does it mean if the broker responded "3 mine"? [1]
 (ii) On the spot date, you received a confirmation from your Singapore correspondent bank that a sum of SGD4,953,000 has been credited for the transaction in (b)(i) above.
 Is the amount received correct? Show the workings to support your answer. [2]

- (c) You are a foreign exchange dealer responsible for the EUR account. You have the following opening positions and daily transactions:

Opening balance with an European bank in Germany	30,000
Opening position (overbought)	100,000
Export proceeds credited to the correspondent account for an export customer	250,000
Outward TT remittance instructed by customer	300,000
Junior interbank dealer sold EUR against USD	500,000

- (i) What is the closing balance in the EUR account? [2]
 (ii) State **two** ways you can square the closing position. [2]
 (iii) Why is it important for you to square the bank's EUR position at the end of the day? [2]
 (iv) What are **two** advantages of using swaps to cover the closing positions? [2]

- (d) You are given the following information:

Spot USD/MYR	3.8000
6-month USD interest rate (180 days)	4.00%
6-month MYR interest rate (180 days)	3.00%
6-month swap (180 days)	160/140

Your customer deposited USD1million into the USD foreign currency account. You have a choice of lending the amount in USD or MYR (by converting it into MYR equivalent).

Which transaction would give you a higher return without any exchange rate risk? Support your answer with workings.

(Use the general swap formula and the spot rate in your calculation. Assume that there are no regulations prohibiting such transactions and no transaction costs.) [5]
 (Total:20 marks)

4. (a) In the recently held monthly Asset-Liability Committee (ALCO) meeting of Twinkle Bank, the ALCO was informed that Twinkle Bank has moved into a positively-gapped funding position.
 (i) What does "positively-gapped funding position" mean? [2]
 (ii) Why would Twinkle Bank take such a funding position? [2]

- (iii) Describe whether there are any risks associated with taking such a funding position. [2]
- (b) The ALCO was also informed that the market conditions were such that an upward revision in the reserve requirements with the central bank was likely to be taken by the regulator.
- (i) What market conditions would result in a central bank taking a decision to revise upward the bank's reserve requirements? [2]
- (ii) If Twinkle Bank's average cost of deposit liabilities before reserve cost was 7.5% per annum, what would be its breakeven cost of deposit liabilities if the reserve requirements (non-interest bearing) with the central bank is 5.0% of deposit liabilities? (Answer to 2 decimal places.) [2]
- (iii) What would be Twinkle Bank's cost of reserves if its reserve requirements (non-interest bearing) with the central bank was doubled to 10.0% of deposit liabilities? (Answer to 2 decimal places.) [2]
- (c) The following is a comparison of the rates for a 3-month deposit quoted by Faith Bank and Silky Bank:

Quotation	Bid	Offer
Faith Bank	5.4% per annum	5.9% per annum
Silky Bank	5.1% per annum	5.6% per annum

- (i) What is the bid-offer spread in the above quotations by Faith Bank and Silky Bank? [1]
- (ii) What can you say about Faith Bank's transaction preference from a comparison of the quotations shown above? [1]
- (iii) If Bank A wishes to place RM5million for three months, which of the two banks (Faith Bank or Silky Bank) should Bank A place with and at what rate, in order to maximise return? [2]
- (iv) If Bank B wishes to borrow RM5million for three months, which of the two banks (Faith Bank or Silky Bank) should Bank B borrow from and at what rate, in order to minimise cost? [2]
- (v) Name **two** qualities of a good two-way money market deposit quotation. [2]
(Total:20 marks)
5. (a) On 17 June 2005 (Friday), Phil Bank transacted a 1-month over tom money market placement of USD10million with LQP Bank at a rate of 3.0% per annum.
- (i) What were the value dates of this transaction? [2]
- (ii) What was the maturity amount of this transaction? [2]
- (iii) If the maturity date of this transaction fell on an unexpected holiday in Malaysia, what would be the new maturity date of this transaction? [1]
- (b) The Rating Agency Malaysia Berhad (RAM) provides an expert and independent third-party opinion on the credit quality of domestic Ringgit denominated debt issues.
- (i) In the long-term rating scale adopted by RAM, what is the highest rating and what does this rating mean? [2]
- (ii) What is the minimum rating for a debt issue to be considered investment grade? [1]
- (c) On 16 June 2005 (Thursday), Norshah Bank executed the following transactions:

Transaction 1: Purchased a 182-day banker's acceptance (BA) with a face value of RM1,000,000 at a discounted rate of 4.0% per annum.

Transaction 2: Purchased a 182-day Malaysian Government Treasury Bill (MGTB) with a face value of RM1,000,000 at a cost of RM980,304.11.

- (i) How much proceeds did Norshah Bank pay for the BA? (Answer to 2 decimal places) [2]
 - (ii) At what discounted rate did Norshah Bank purchase the MGTB? (Answer to 2 decimal places) [2]
 - (iii) Which of the two transactions gave Norshah Bank a higher return? Why? [1]
 - (iv) What would be the effective return on the BA if after holding the BA for 100 days, the BA is sold at a discounted rate of 2.5% per annum? (Answer to 2 decimal places) [3]
- (d) On 17 July 2005, LWS Bank bought 50 September 2005 3-month KLIBOR futures contracts at 96.90 on Bursa Malaysia Derivatives Berhad.
- (i) What is the contract size of the 3-month KLIBOR futures contract? [1]
 - (ii) The minimum price movement for a KLIBOR futures contract is called a "tick".
What is the Ringgit value of a tick for the 3-month KLIBOR futures contract? [1]
 - (iii) What was LWS Bank's short-term interest view when the bank bought the 3-month KLIBOR futures contracts? [1]
 - (iv) What was the implied 3-month KLIBOR rate at which LWS Bank bought the 50 September 2005 contracts? [1]
- (Total:20 marks)

6. (a) In the management of a bank's foreign exchange operations, explain the measures you should take to control the following risks:
- (i) Credit risk [2]
 - (ii) Liquidity risk [2]
 - (iii) Capital-related risk [2]
- (b) Briefly explain the uses of the following treasury products:
- (i) Interest rate swaps [2]
 - (ii) Interest rate caps [2]
 - (iii) 3-month KLIBOR futures [2]
- (c) Explain, with an example, the following:
- (i) Transaction exposure risks [2]
 - (ii) Translation exposure risks [2]
- (d) In today's market, effective currency risk management makes the difference between increasing or decreasing shareholders' wealth.
- Describe **four** steps to effectively manage currency risks. [4]
- (Total:20 marks)

OUTLINE ANSWERS

The comments given in the boxes below indicate the areas of weaknesses the examiners have identified and their advice to future candidates.

Question 1

1. (a) (i) Bid rate – the rate at which the market is prepared to buy currencies (accept funds).
- (ii) Offer rate – the rate at which the market is prepared to sell currencies (lend funds).
- (iii) Tom rate: Delivery of foreign exchange/currency on one good business delivery day from the transaction date.
- (iv) Spot rate: Buying and selling of currencies, with delivery normally two business days after the date of contract.
- (v) Discount: The currency is going to command less units of another currency at a future date than today.
- (vi) Premium: The currency is going to command more units of another currency at future date than today.
- (b) (i) Inflation data is a guide for Fed to increase, decrease or maintain interest rates. Interest rates changes will lead to inflow or outflow of funds to the US economy, which in terms affect the demand and supply of USD.
- (ii) More reflective of the value of the currency.
No need to “defend” the currency
- (c) (i) Characteristics of a foreign exchange market:
- No physical central marketplace for buyers and sellers to meet.
 - An informal market where buyers and sellers transact without having to meet/know each other.
 - An electronic market where transfer of funds are made through SWIFT.
 - A 24-hour market.
- (ii) Participants in the foreign exchange market:
- Central banks.
 - Commercial banks.
 - Corporations.
 - Non-banking and financial institutions.
 - Money brokers.
 - Individuals.
- (d) (i) Advantages
- No need for hedging, eliminate or reduce foreign exchange risks.
 - May earn higher returns (interest rates) for some currencies.
 - May be used to offset imports, lower transaction costs.
- Disadvantages
- Exchange rate loss should the MYR strengthens.
 - Interest rates may be lower for some currencies.

- (ii) Recommendation on which foreign currency account to be opened:
- USD – since export proceeds can be used to offset against import payments.
 - YEN and AUD account may be recommended also if the company is able to convince the Japan and Australia exporter to invoice in their own currencies.
 - Others – depending on the company risk management, hedging strategies and interest rate returns requirements.

Question 2

Poor understanding of forward rates (discount and premium) resulted in the wrong rate/points used for the calculations. Out-of-range or illogical answers did not alert candidates to recheck their answers.

2. (a) AUDP/USD value spot = 0.7600
- (b) USD/JPY value spot = 123.00
- (c) AUD/MYR value 1-month fixed = $(3.8005 - 0) \times (0.7610 - 10) = 2.8883/4$
- (d) AUD/MYR value 2-month = $(3.7995 - 25) \times (0.7600 - 30) = 2.8743$
 AUD/MYR value 3-month = $(3.7995 - 50) \times (0.7600 - 45) = 2.8667$
- Option rate = 3-month = 2.8667
- (e) JPY/MYR value spot = $(3.7995)/(123.00) = 3.0890$ (100 units)
 JPY/MYR value 1-month = $(3.7995 - 15)/(123.00 + 30) = 3.0802/3$ (100 units)
- Option rate = 1-month rate = 3.0802/3 (100 units)
- (f) JPY/MYR value 3-month = $(3.8005 - 40)/(122.90 + 70) = 3.0716$ (100 units)
- (g) USD/MYR value 5-month = $3.7995 - 110 = 3.7885$
 USD/MYR value 6-month = $3.7995 - 160 = 3.7835$
- Option rate = 6-month = 3.7835
- (h) JPY/MYR value 4-month = $(3.8005 - 70)/(122.90 + 100) = 3.0617$ (100 units)
 JPY/MYR value 5-month = $(3.8005 - 100)/(122.90 + 130) = 3.0519$ (100units)
- Option rate = 4-month = 3.0617 (100 units)
- (i) (i) USD150,000 x 3.8025 = MYR570,375
- (ii) USD50,000 / 0.7610 = AUD65,703.02
- (iii) USD200,000 x 122.90 = JPY24,580,000

Question 3

3. (a) (i)

EUR	Rate	USD
3,000,000	1.2589	-3,776,700
3,000,000	1.2566	+3,769,800
		-6,900

Loss = USD6,900 x 3.8000 = MYR26,220

- (ii) Maximum loss = USD9,000
 1 pip = EUR3,000,000 x 0.0001 = USD300
 USD9,000/USD300 = 30 pips
 Stop-loss = 1.2589 – 0.0030 = 1.2559
- (b) (i) Sold USD3million @ 1.6515
- (ii) No. Should be USD3,000,000 x 1.6515 = SGD4,954,500
- (c) (i) Closing balance in the EUR account
 = + 30,000 + 100,000 + 250,000 – 300,000 – 500,000
 = -420,000 i.e. oversold EUR420,000
- (ii) Ways to square the position (any **two**):
- Buy EUR420,000.
 - Borrow EUR420,000.
 - Buy/sell swap EUR420,000.
- (iii) It is important to square the EUR position at the end of the day to:
- avoid interest cost.
 - comply with regulatory requirements.
- (iv) Advantages of using swaps to cover the closing position (any **two**):
- Reduce credit risks.
 - Costs may be lower.
 - Minimal impact on balance sheet.
 - Possible tax advantage.
- (d) Convert USD1million into MYR at 3.8000
 Interest differentials = 6-month swap points = 140 points

Using the formula
 Interest rate differential
 = $\frac{\text{Swap points} \times 36000}{\text{Spot or forward rate} \times \text{Days}}$
 = $\frac{0.0140 \times 36000}{3.8000 \times 180}$
 = 0.73%/0.74%

Lending rate = 3.00% + 0.73% or 0.74% = 3.73% or 3.74%
 Lending in USD would give a higher return i.e. 4.00% compared to 3.73% or 3.74%.

Question 4

Candidates could not explain why a positive gapping position is taken, calculate the impact of the reserve requirements on the cost of funds and read the two-way MM quotations.

4. (a) (i) A “positive-gapped funding position” is a funding position where assets mature earlier than liabilities or in short the bank is borrowing long and lending short.
- (ii) Twinkle Bank would take such a funding position if it expects interest rates to rise and also to protect its liquidity position. The bank expects to profit by lending at higher rates on the shorter end when interest rates have moved up since the bank had earlier borrowed at lower interest rates on the longer end.

- (iii) Like all gapping positions, Twinkle Bank is subject to price or interest rate risk. Should rates remain unchanged or move lower, borrowing long at generally higher interest rates and then lending short at lower rates would have a negative impact or negative carry on a bank's funding position.

A positive-gapped funding position is, however, not subjected to liquidity risk.

- (b) (i) Under inflationary market conditions, a central bank can curb excessive credit expansion by tightening money conditions through an increase in bank reserve requirements with the central bank. This works through lowering the potential expansionary power of the reserve multiplier.
- (ii) Reserve requirements = 5.0% of deposit liabilities
Cost of deposit = 7.50%
Break-even cost of deposit
= Cost of deposit/(1 – Reserve requirement)
= 7.50%/(1 – 0.05)
= 7.89%
- (iii) New reserve requirements = 10.0% of deposit liabilities
Cost of deposit = 7.50%
New break-even cost of deposit
= 7.50%/(1 – 0.10)
= 8.33%
Cost of reserves = 8.33% – 7.50% = 0.83%
- (c) (i) The bid-offer spread is 0.50% or 50 basis points in the above quotations.
- (ii) Faith Bank is more willing to bid than offer for 3-month deposits as its bid is higher than Silky Bank's bid, i.e. Faith Bank is more willing to accept than to place 3-month deposits.
- (iii) Bank A should place with Faith Bank as Faith Bank has a higher bid rate than Silky Bank.

Bank A can place with Faith Bank at Faith Bank's bid rate of 5.4% per annum.
- (iv) Bank B should borrow from Silky Bank as Silky Bank has a lower offer rate than Faith Bank.

Bank B can borrow from Silky Bank at Silky Bank's offer rate of 5.6% per annum.
- (v) The qualities of a good two-way money market deposit quotation are:
- Fast response to the request for the quotation.
 - A narrow bid-offer spread.
 - A willingness to deal for a "reasonable amount" at the rates quoted where the reasonable amount would be dependent on the marketability of the deposit quoted.

Question 5

- Candidates knew that AAA was the highest rating given by the Rating Agency of Malaysia but could not state what an AAA rating means. Did not know what constitutes an investment grade rating.
- Candidates did not understand the concept of discounted rate to make comparative investment decisions.
- Candidates could not explain the basic characteristics of a 3-month KLIBOR futures contract.

5. (a) (i) The value dates are:
- 20 June 2005 (start date).
 - 20 July 2005 (maturity date).
- (ii) Maturity amount
 $= 10,000,000 + (10,000,000 \times 30/360 \times 3.0\%)$
 $= 10,000,000 + 25,000$
 $= \text{USD}10,025,000$
- (iii) The maturity date would still remain as 20 July 2005 as the settlement of the USD transaction is not affected by the unexpected holiday in Malaysia.
- (b) (i) The highest rating is AAA.
- Issues rated AAA are judged to be of the best quality and offer the highest safety of timely payment of interest and principal.
- (ii) The minimum rating for consideration of investment grade is BBB.
- (c) (i) BA proceeds
 $= 1,000,000 \times [1 - (0.04 \times 182/365)]$
 $= \text{RM}980,054.79$
- (ii) $980,304.11 = 1,000,000 \times [1 - (\text{MGTB rate} \times 182/365)]$
MGTB rate = 3.94%/3.95%
- (iii) Transaction 1 had a higher return as the BA was purchased at a higher discount rate of 4.0% per annum against 3.94%/3.95% per annum for the MGTB.
- (iv) Days held = 100 days
Remaining tenor of BA = $182 - 100 = 82$ days
Original purchase proceeds = 980,054.80
- BA sales proceeds
 $= 1,000,000 \times (1 - (0.025 \times 82/365))$
 $= 994,383.56$
- Effective return
 $= (994,383.56 - 980,054.79)/980,054.79 \times 365/100$
 $= 5.33\%/5.34\%$
- (d) (i) The contract is based on a Ringgit interbank time deposit of RM1,000,000 with a 3-month maturity on a 360-day year.
- (ii) The Ringgit value of a tick is RM25.
Note: 1 tick is $0.01\% \times 1,000,000 \times 3/12 = \text{RM}25$

- (iii) LWS Bank expects short-term interest rates to fall if the Bank buys or take a long futures position.
- (iv) KLIBOR futures price = 100 – 3-month KLIBOR rate
 3-month KLIBOR rate
 = 100 – 96.90
 = 3.10% per annum

Question 6

- Candidates could not explain the measures to be taken to manage the risks.
- Candidates were unable to describe the uses of the treasury products.

6. (a) (i) Credit risks
- Establishing credit lines and maturities.
- (ii) Liquidity risks
- Diversifying investments.
 - Spreading assets maturities.
- (iii) Capital-related risk
- Distribution of assets.
- (b) (i) Interest rate swaps
- reduce interest rate risks.
 - reduce funding costs.
 - arbitrage opportunities.
- (ii) Interest rate caps
- protection against rise in interest rates.
- (iii) 3-month KLIBOR futures
- hedging interest rates.
 - manage MYR exposures more effectively.
- (c) (i) Transaction exposure risks
- Business exposure risk – risk that movement in exchange rates will alter the value of the foreign currencies in relation to the “home” currency, e.g. payments for imports or exports.
- (ii) Translation exposure risks
- An exposure on account of method of accounting and financial reporting for forex operations, e.g. investment in other countries.
- (d) Four steps in effective management of currency risks:
- definition of an organisation’s overall risk management objectives.
 - identification of the various exposure risks.
 - decision to centralise or decentralise risk management.
 - implementation of the necessary control and systems.