

**DP07**

# **Treasury**

**10 APRIL 2007**

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) Describe the following:
- (i) Foreign exchange market. [2]
  - (ii) Money market. [2]
  - (iii) Fixed exchange rate system. [2]
  - (iv) Free floating exchange rate system. [2]
- (b) The implementation of the Ninth Malaysia Plan may require up to 1 million foreign workers to be employed as “contract workers”. These foreign workers will remit a significant portion of their wages to their families in their home countries.
- Describe the effect of these remittances on the MYR exchange rates. [2]
- (c) (i) State **two** reasons for a Central Bank’s intervention in the foreign exchange market. [2]
- (ii) Briefly describe “sterilised” and “non-sterilised” foreign exchange interventions. [2]
- (d) Your customer, ABC Sdn Bhd (ABC), is a major local exporter of cosmetics to the United States of America. ABC invoices all its sales in USD. However, a major cost of ABC’s business is the purchase of raw materials which are sourced from France and paid in Euro. The recent strengthening of the MYR against the USD has affected ABC’s profits. ABC seeks your assistance in devising strategies to manage the foreign exchange risk.
- (i) Name **two** foreign exchange hedging products that you would recommend to ABC to manage the foreign exchange rate risk. [2]
  - (ii) List **one** advantage for each of the two foreign exchange hedging products recommended in (d) (i) above. [2]
  - (iii) List **two** key factors that could have caused the MYR to strengthen against the USD. [2]
- (Total:20 marks)

2. The following rates are quoted:

Item	USD/MYR	AUD/USD	USD/CHF
Spot (6 April 2007)	3.4810/20	0.7780/90	1.2230/40
1-month	65/55	10/5	35/25
2-month	100/90	20/10	75/65
3-month	160/150	30/20	155/145
4-month	210/200	45/35	425/415
5-month	265/255	65/55	500/490
6-month	310/300	95/85	590/580

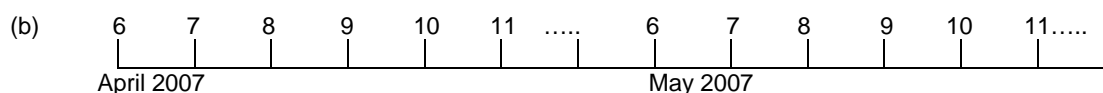
Based on the above rates, calculate the following (assume no margins or charges are imposed and all exchange controls/regulations are complied with):

- (a) Bank sells AUD/USD value spot. [1]
- (b) Bank buys USD/CHF value spot. [1]
- (c) Bank sells AUD/MYR value 2-month fixed delivery. [2]
- (d) Bank buys AUD/MYR option 3-month to 4-month. [3]

- (e) Bank buys CHF/MYR option spot to 1-month. [2]
- (f) Bank sells CHF/MYR 6-month fixed delivery. [2]
- (g) Price quoted to exporter for USD/MYR option 4-month to 5-month. [2]
- (h) Price quoted to importer for CHF/MYR option 2-month to 3-month. [3]
- (i) Your customer received a USD1,000,000 telegraphic transfer value spot. His instructions to convert the USD1,000,000 are as follows:
- USD500,000 to his AUD foreign currency account with your bank.
  - Balance of USD500,000 into MYR and credit his current account with your bank.
- (i) Calculate the amount of AUD credited to the AUD foreign currency account. [2]
- (ii) Calculate the MYR amount credited to the current account. [2]
- (Total:20 marks)

3. (a) Given the quotation, USD/CHF = 1.2270/75, state or calculate the following items:

- (i) Deal or base currency. [1]
- (ii) Small figure. [1]
- (iii) Spread in terms of pips. [1]



- The transaction date is Friday, 6 April 2007.
- Tuesday, 10 April 2007, is a national holiday in the United States of America.

Given the information above, with the assumption that all other dates given are good for transaction, answer the following questions:

- (i) State the spot date for USD/MYR foreign exchange transactions. [1]
- (ii) State the date for 1-month forward fixed USD/MYR delivery contract. [1]
- (c) Your customer has entered into a fixed foreign exchange contract for his import of USD1,000,000 at 3.5600 maturing on 6 April 2007. His supplier has just informed him that the shipment has been delayed by 1 month and therefore, the foreign exchange contract would need to be extended accordingly.

The following information is given:

Spot (6 April 2007)	3.5510/20
1-month	65/55
2-month	90/80
3-month	150/140

- (i) Calculate the profit/loss that the customer would incur if the bank closes out the foreign exchange contract. [2]
- (ii) Calculate the new fixed delivery forward contract rate for value 6 May 2007. [2]



- (d) A jobber who trades in EUR/USD has executed the following trades:

Transaction	Amount	Currency	Rate
Sold	3,000,000	EUR/USD	1.3370
Sold	5,000,000	EUR/USD	1.3350
Purchased	4,000,000	EUR/USD	1.3390
Purchased	4,000,000	EUR/USD	1.3400

The daily loss dealing limit assigned to the jobber is MYR50,000 per day. The revaluation rate for USD/MYR is 3.5000.

- (i) From the above trades, determine the loss suffered by the jobber in MYR. [2]
- (ii) Determine whether the jobber is complying with the daily loss dealing limit. Explain your answer by showing your workings. [2]
- (e) (i) List **four** main uses of foreign exchange swaps. [2]
- (ii) Assume that you have received a 3-month MYR deposit from a customer and at the same time, your bank makes a 3-month USD loan to another customer.  
State **two** options available to you to “cover both the positions”. [4]
- (iii) The USD/MYR 6-month forward swap points have changed from negative to positive.  
Explain the **main** reason for this change. [1]
- (Total:20 marks)
4. (a) In managing a money market book, a money market manager is required to have a good overall understanding of yield curves and gapping strategies.
- (i) What is a yield curve? [1]
- (ii) Draw a negative yield curve graph and explain what this yield curve means. [3]
- (iii) Describe **one** gapping strategy. [3]
- (b) Silky Bank pays 6.2% flat for five months on a deposit while Cutie Bank pays 11.25% flat for nine months.  
Determine which of the two banks (Silky Bank or Cutie Bank) you would place your deposit in to maximise returns. Explain why and show all workings. [2]
- (c) Scruffy Bank charges 4.00% per annum discount for a one-year loan while Yukee Bank charges 4.15% per annum with interest payable at the end of the one-year period.  
Determine which of the two banks (Scruffy Bank or Yukee Bank) you would borrow from to minimise costs. Explain why and show all workings. [2]

- (d) Given below is a two-way secondary market quote for a Banker's Acceptance (BA) together with supporting information as at today:

Item	Information
Secondary market two-way quote	3.30% - 3.20% per annum
Drawer	Faith Enterprises Sdn Bhd
Acceptor	Phil Bank
Face value	RM1,000,000
Primary discounting rate	3.40% per annum
Acceptor's commission	0.50% per annum
Tenor of BA	100 days
Remaining days to maturity	80 days

Based on the above information, answer the following questions:

- (i) Define and describe the "offer rate" in the above two-way quote. [2]
- (ii) Define "drawer" and "acceptor". [2]
- (iii) Calculate the acceptor's commission paid when the BA was accepted. (Answer to the nearest sen) [2]
- (iv) If Stan Bank which owns the above BA decides to sell the BA today at the bid rate in the secondary market, calculate the BA proceeds that Stan Bank will receive on this sale. (Answer to the nearest sen) [3]
- (Total:20 marks)

5. (a) The following is a comparison of the rates for a 1-month deposit quoted by Bank ABC and Bank XYZ:

Quotation	Bid	Offer
Bank ABC	6.80% per annum	7.30% per annum
Bank XYZ	7.00% per annum	7.50% per annum

- (i) Describe Bank ABC's transaction preference from a comparison of the quotations shown above. [2]
- (ii) If Bank PQR wishes to place RM3million for 1 month, in order to maximise returns, which of the two banks (Bank ABC or Bank XYZ) should Bank PQR place the RM3million with and at what rate? [2]
- (iii) If Bank PQR now wishes to borrow RM5million for 1 month, in order to minimise cost, which of the two banks (Bank ABC or Bank XYZ) should Bank PQR borrow the RM5million from and at what rate? [2]
- (iv) Calculate the maturity proceeds of the borrowing transaction carried out by Bank PQR in (iii) above. (Assume 12 months in a year and answer to the nearest sen) [2]
- (v) Calculate the breakeven 1-month lending rate that Bank PQR can quote to its customer if the reserve requirement (zero-interest bearing) is 5%, after closing the transaction in (iii) above. (Answer to 2 decimal places) [2]

- (b) State **two** ways in which a Central Bank can inject liquidity into the banking system when the money market is extremely tight. [2]
- (c) For each of the following transactions, state the maturity date and briefly explain your answer:
- (i) A 3-month Ringgit money market placement transacted to start on value date 9 January 2007 if the maturity date is an unexpected holiday. [1]
  - (ii) A 6-month Sterling Pound money market borrowing transacted to start on value date 10 February 2007 if the maturity date is a holiday in Malaysia. [1]
  - (iii) A 5-month USD money market placement transacted to start on value date 31 January 2007 if the maturity date is a Saturday. [1]
  - (iv) 1-month Ringgit money market borrowing transacted to start on value date 30 April 2007. [1]
- (d) Norshah Bank bought RM10million nominal value of Malaysian Government Securities (MGS) with a remaining tenor of 5 years from the market at a clean price of 98.80. The MGS carries a coupon of 2.80% per annum paid semi-annually.
- (i) Based solely on the information provided above, describe the level of the 5-year interest rate compared to the coupon rate. [2]
  - (ii) Calculate the total settlement proceeds that Norshah Bank will have to pay if the settlement date is 80 days since the last coupon payment date and the coupon period in which the settlement takes place is 182 days. (Answer to the nearest sen) [2]
- (Total:20 marks)
- 6.** (a) Corporations are exposed to both foreign exchange translation and economic risks. Explain what these risks are and illustrate with examples. [4]
- (b) Explain briefly the following:
- (i) Islamic Acceptance Bills. [3]
  - (ii) Three-month KLIBOR futures. [3]
  - (iii) Forward optional delivery contracts. [3]
  - (iv) Call options. [3]
- (c) Explain, with an example, the following internal hedging techniques employed by corporations:
- (i) Matching asset and liability exposures. [2]
  - (ii) Leading and lagging. [2]
- (Total:20 marks)

**- END OF QUESTION PAPER -**

## **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**

- Candidates answered well except for the description on “sterilised” and “non-sterilised” foreign exchange interventions.
- Ensure that all topics in the syllabus are covered during preparation for the examination.

1. (a) (i) The foreign exchange market is a market where buyers and sellers transact in convertible currencies.
- (ii) The money market is a financial market for short-term borrowing and lending. In the money market, banks lend to and borrow from each other, transact in short-term financial instruments e.g. Certificates of Deposits, Repo, FRAs, commercial papers, etc.
- (iii) The fixed exchange rate system is a system where the exchange rates are held constant or allowed to fluctuate within very narrow bands only. The currency thus has direct convertibility towards another currency.
- (iv) In a free floating exchange rate system, market forces determine exchange rates without intervention from the government.
- (b) The MYR would weaken as the result of outward remittances.
- (c) (i) To correct misalignment.  
To stabilise the exchange rates and calm a disorderly market.
- (ii) Sterilised:  
No change in money supply due to the adoption of necessary monetary policies to neutralise the increase or decrease in money supplies.
- Non-sterilised:  
Results in the increase in the money supply which in turn will affect domestic interest rates.
- (d) (i)
  - Foreign Currency Forward Contract
  - Foreign Currency Options
- (ii)
  - Certainty of the exchange rates
  - Low costs
- (iii) Change in interest rates
  - Economic factors
  - Political factors

**Question 2**

- Candidates were able to show full calculations but with some minor careless mistakes.
- Candidates must ensure that answers are logical i.e. in line with the market rates to obtain correct calculation.

2. (a) AUD/USD value spot = 0.7790
- (b) USD/CHF value spot = 1.2230
- (c) AUD/MYR value 2-month fixed =  $(3.4820 - 90) \times (0.7790 - 10) = 2.7019/20$
- (d) AUD/MYR value 3-month =  $(3.4810 - 160) \times (0.7780 - 30) = 2.6853/4$   
AUD/MYR value 4-month =  $(3.4810 - 210) \times (0.7780 - 45) = 2.6763$   
Option rate = 4-month = 2.6763
- (e) CHF/MYR value spot =  $(3.4810) / (1.2240) = 2.8439/40$   
CHF/MYR value 1-month =  $(3.4810 - 65) / (1.2240 - 25) = 2.8444/5$   
Option rate = spot = 2.8439/40
- (f) CHF/MYR value 6-month =  $(3.4820 - 300) / (1.2230 - 590) = 2.9656$
- (g) USD/MYR value 4-month =  $3.4810 - 210 = 3.4600$   
USD/MYR value 5-month =  $3.4810 - 265 = 3.4545$   
Option rate = 5-month = 3.4545
- (h) CHF/MYR value 2-month =  $(3.4820 - 90) / (1.2230 - 75) = 2.8572/3$   
CHF/MYR value 3-month =  $(3.4820 - 150) / (1.2230 - 155) = 2.8712$   
Option rate = 3-month = 2.8712
- (i) (i)  $(500,000/0.7790) = \text{AUD}641,848.52$
- (ii)  $\text{USD}500,000 \times 3.4810 = \text{MYR}1,740,500$

**Question 3**

- Candidates were able to show proper calculations.
- Candidates gave some incomplete answers.
- Candidates must ensure that all parts of the question are answered.
- Candidates must pay attention to topics on “swaps” when preparing for the examination.

3. (a) (i) USD  
(ii) 70/75  
(iii) 5 pips
- (b) (i) Spot – Wednesday, 11 April 2007  
(ii) 1 month = 11 May 2007
- (c) (i) The contract is closed out as follows:

Original Contract Rate	3.5600
Current Bid Rate	3.5510
Loss to the Customer	0.0090 points

Amount of Loss =  $0.0090 \times 1,000,000 = \text{RM}9,000$

- (ii) The new contract rate for value 6 May 2007:

Closing out rate	3.5510
1-month swap points	-0.0055
New contract rate	3.5455

- (d) (i) Jobber

EUR	Rate	USD
-3,000,000	1.3370	+ 4,011,000
-5,000,000	1.3350	+ 6,675,000
+4,000,000	1.3390	- 5,356,000
+4,000,000	1.3400	- 5,360,000

Jobber Loss = USD10,686,000 - USD10,716,000 = USD30,000

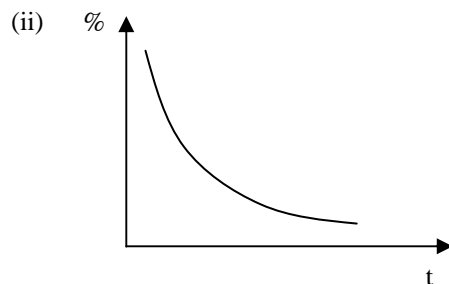
- (ii) No.  
 (USD30,000 x 3.5000) - RM50,000 = RM55,000  
 Exceeded daily loss dealing limit by RM55,000

- (e) (i) **Four** main uses of foreign exchange swaps:
- Swapping of surplus currencies
  - Creation of deposits borrowing in another currency
  - Indirectly raised funds for illiquid currencies
  - Arbitrage opportunity
- (ii) Choose any **two** for the following options available to “cover both the positions”:
- Lend out the MYR at prevailing market bid rate
  - Borrow the USD at prevailing market offer rate
  - Entered into a 3-month BUY/SELL USD swap – indirectly borrowing 3-month USD deposits and at the same time lending 3-month MYR deposits.
- (iii) USD interest rates are now lower than the MYR interest rates.

#### Question 4

- Candidates did not answer questions directly.
- Candidates displayed poor skill in calculating Banker's Acceptance (BA) acceptor's commission and proceeds.
- Candidates should answer the question directly and not regurgitate facts.
- Candidates need to put in more practice in calculating BA acceptor's commission and proceeds.

4. (a) (i) A yield curve is a graphic representation showing the relationship between interest rates/yields and maturities of a particular instrument at a given point in time.



A negative yield curve is one where interest rates on the shorter-end maturities are higher than interest rates on the longer-end maturities.

- (iii) There are two main types of gapping strategies.

*(Give either **one** of the two following strategies)*

A positive gapping strategy is one where a bank borrows long and lends short i.e. where assets mature earlier than liabilities. This strategy is adopted when the bank expects interest rates to rise sharply within a short period of time. Apart from taking advantage of higher interest rates to come, the bank has the added advantage of liquidity.

*or*

A negative gapping strategy is one where a bank lends long and borrows short i.e. where liabilities mature earlier than assets. This strategy is adopted when the bank expects interest rates to decline or remain unchanged usually under a positive yield curve environment. The objective here is to improve or gain in a bank's net interest revenue.

- (b) Silky Bank pays 6.20% flat for five months  
=  $(6.20\% / 5) \times 12$   
= 14.88% per annum

Cutie Bank pays 11.25% flat for nine months  
=  $(11.25\% / 9) \times 12$   
= 15.00% per annum

In order to maximise returns, we should place our deposit with Cutie Bank which provides a higher return of 15.00% per annum as against 14.88% per annum by Silky Bank.

- (c) Scruffy Bank charges 4.00% per annum discount  
=  $0.04 / (1 - 0.04)$   
= 4.16% / 4.17% per annum simple interest rate equivalent

Yukee Bank charges 4.15% per annum simple interest rate

In order to minimise costs, we should borrow from Yukee Bank which charges a lower simple interest rate of 4.15% per annum as against 4.16% / 4.17% per annum simple interest rate equivalent by Scruffy Bank.

(d) (i) The offer rate is the rate of discount that the seller is willing to sell or discount the BA i.e. the lower the discount, the higher the proceeds paid to the seller. Sellers would like to sell at a lower discount while buyers would like to buy at a higher discount.

(ii) The drawer is a BA customer who has drawn a BA pursuant to an acceptance credit facility, to finance the drawer's business-related purchases or sales of goods from or to another person evidenced by proper and adequate documentation.

The acceptor is the approved bank which is the drawee and acceptor of the BA.

(iii) Acceptor's Commission  
= Face Value of BA x Acceptor's Commission per annum x Tenor of BA/365  
= 1,000,000 x 0.5% x 100/365  
= RM1,369.86

(iv) BA proceeds = FV (1 - (r x d/36500))  
= 1,000,000 (1 - (3.3 x 80/36500))]  
= RM992,767.12

#### Question 5

- Candidates did well in the comparing bid/offer rates between banks.
- Candidates did not answer questions directly to the point.
- Candidates were weak in the calculation of Malaysian Government Securities (MGS) proceeds and value date.
- Candidates should practise on work examples for the calculation of MGS proceeds and value date computations.

5. (a) (i) Bank ABC is more willing to offer than bid for 1-month deposits as its offer is lower than Bank XYZ's offer i.e. Bank ABC is more willing to place/lend than to accept/borrow 1-month deposits.

(ii) Bank PQR should place the RM3million with Bank XYZ as Bank XYZ has a higher bid rate than Bank ABC.

Bank PQR can place the RM3million with Bank XYZ at Bank XYZ's bid rate of 7.00% per annum.

(iii) Bank PQR should borrow the RM5million from Bank ABC as Bank ABC has a lower offer rate than Bank XYZ.

Bank PQR can borrow from Bank ABC at Bank ABC's offer rate of 7.30% per annum.

- (iv) Maturity proceeds  
 = Principal + Interest  
 = 5,000,000 + (5,000,000 x 7.30% x 1/12)  
 = 5,000,000 + 30,416.66/7  
 = RM5,030,416.66/7
- (v) Breakeven rate  
 = Borrowing rate / (1 - reserve requirement ratio)  
 = 7.30% / (1 - 5.00%)  
 = 0.073 / 0.95  
 = 0.0768  
 = 7.68% per annum
- (b) Ways the Central Bank can inject liquidity into the banking system:  
 (Choose any **two** of the following)
- Intervene directly by lending money to the inter-bank market.
  - Lower the level of statutory reserve requirements.
  - Undertake reverse repurchase transactions (Reverse Repo).
  - Outright purchase of marketable securities.
  - Suspend the issuance of Central Bank Bills.
  - Undertake swap transactions by buying foreign currency against the domestic currency on the first leg of the FX swap transactions.
- (c) (i) 10 April 2007. The maturity date would be the next business day since the original maturity date is an unexpected holiday.
- (ii) 10 August 2007. The maturity date for Sterling Pound transactions is not affected since England is not on holiday and settlement can still take place in London for Sterling Pound transactions.
- (iii) 29 June 2007. The maturity date would be the previous business day of the normal maturity date of 30 June 2007 which is a Saturday, a non-business day, since the maturity date for a month-end to month-end transaction is not allowed to cross over to a new month. This is also known as the “no-crossing-over-month-end rule”.
- (iv) 31 May 2007. The maturity date would be based on the month-end to month-end rule.
- (d) (i) Since the clean price is below par i.e. at 98.80, the prevailing 5-year interest rate is trading at a higher level as compared to the coupon rate of 2.80% per annum.
- (ii) The settlement proceeds that Norshah Bank will pay  
 = Clean Price + Accrued Interest  
 = (98.80/100 x 10,000,000) + (10,000,000 x 2.80% x 80 / (182 x 2))  
 = 9,880,000 + 61,538.46  
 = RM9,941,538.46

**Question 6**

- Candidates showed good knowledge of treasury products.
- Candidates had poor understanding of the concepts of risk and risk management.
- Candidates need to cover all topics when preparing for the examination. Avoid “spotting” questions.

6. (a) Translation exposure risk arises when a company has assets and liabilities which are denominated in foreign currencies. Movements in the exchange rates between the value of

these foreign currencies and the home currency between two reporting balance sheet periods will alter (either positively or negatively) the value of the company's balance sheet.

*Example:* A Malaysian company having assets in Singapore may show a significant paper gain when the Singapore Dollar strengthens against the MYR.

Economic Exposure risk arises when changes in exchange rates over a period of time affects the competitiveness of a company via its pricing and expenditure structure.

*Example:* The sharp appreciation of the Thai Baht towards the end of 2006 caused Thai exports to become more expensive as compared to other ASEAN countries, thereby affecting the pricing competitiveness of its products.

- (b) (i) **Islamic Acceptance Bills (IABs)**  
IABs were introduced with the objective to promote both domestic and foreign trade by providing traders an alternative Islamic financing product. Similar to BAs, IABs are formulated on the principles of Al-Murabahah (deferred lump sum) and Bai' Al-Dayn (debt trading).
- IABs can be used to finance the following:
- imports and local purchases
  - exports and local sales
- (ii) **Three-month KLIBOR futures**  
Futures are contracts made between two parties to buy or sell an underlying instrument/commodity for settlement at a specified future date. A KLIBOR futures contract is an interest rate futures contract. The contract represent a Ringgit inter-bank time deposit in the Kuala Lumpur Wholesale Money Market having a principal value of Ringgit Malaysia one million (RM1,000,000) with a 3-month maturity on a 360-day year.
- (iii) **Forward optional delivery contracts**  
Foreign exchange contracts are made when both counterparties agreed on a specific future period to exchange their currency obligations. The customer is given an "option" period for him to decide on the delivery date (so long as it is a good business day and within the option period).
- (iv) **Call options**  
Call options give the holder the right but not the obligation to buy underlying assets.
- (c) (i) **Matching asset and liability exposures**  
This internal hedging strategy involves matching receipts (assets) with similar currency borrowing (liabilities) and payable (liabilities) with similar currency lending (assets)
- Example:* A Palm Oil exporter sells crude palm oil forward and hence has receivables in US dollars. Borrowing in US dollars, when the need arises, can reduce this risk.
- (ii) **Leading and lagging**  
Apart from trying to receive the strong currencies and at the same time owe the weak currencies, the company can also reduce exposure risks by altering the timing of receivables and payables either to match the company's certain cash flow profile or to take advantage of potential currency depreciation or appreciation.
- Example:* In cases pertaining to exports, the company will try to accelerate the collection of weaker currencies so that the currencies can be sold off earlier before they weaken further.