

**DP07**

# **Treasury**

**7 MAY 2002**

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) Answer “**True**” or “**False**” for each of the following:
- (i) Fixed forward delivery forex contracts cannot be utilised early under any circumstances. [1]
  - (ii) The capital market is a market for the trading of medium- to long-term debt instruments. [1]
  - (iii) Money brokers may request interbank dealers to honour more than the standard amount if deemed suitable. [1]
  - (iv) With declining interest rates, borrowers should borrow long and increase their fixed rate liabilities. [1]
- (b) “Japan’s central bank began a two-day meeting yesterday, and the market expects further easing of monetary policy as the economy slumps.

The Euro was quoted against the Yen at 115.99 at the close of trading. The US dollar against the Yen remained firm throughout the day and ended at 130.00.”

In the money market, the interbank offer rates were as follows:

	1-month	3-month	6-month
KLIBOR	3.00	3.50	3.50
SIBOR (SGD)	0.50	0.75	1.00
LIBOR (GBP)	3.50	4.00	5.00

From the above report:

- (i) What would be the likely direction of the movement of the US dollar against the Yen, given the expected change in monetary policy mentioned in paragraph 1? [2]
  - (ii) What is the exchange rate of the Euro against the US dollar at the close of trading?[2]
  - (iii) State whether the forward rate of the following currencies is a discount or premium:
    - (aa) 3-month forward SGD/MYR [1]
    - (bb) 6-month forward GBP/MYR [1]
- (c) (i) Explain how the central bank’s intervention in the foreign exchange market will affect liquidity in the money market. [3]
- (ii) Explain how the central bank may influence liquidity in the money market through the sale of Malaysian government securities and treasury bills. [3]
- (d) Briefly describe **two** of the following Exchange Control Notices issued by Bank Negara Malaysia:
- (i) ECM 6
  - (ii) ECM 9
  - (iii) ECM 13 [4]

(Total:20 marks)

2. The following rates are quoted:

	USD/MYR	EUR/USD	USD/CHF
Spot	3.7995/05	0.8665/75	1.6990/00
1-month	20/30	50/40	15/25
2-month	45/55	60/50	25/35
3-month	75/85	70/60	35/45
4-month	100/120	80/70	45/55
5-month	120/140	90/80	55/65
6-month	145/165	115/105	70/80

Calculate the following (full workings of calculation to be shown):

- (a) Bank sells USD/CHF value spot [1]  
 (b) Bank sells EUR/MYR value spot [1]  
 (c) Bank buys EUR/MYR value 1-month fixed delivery [1]  
 (d) Bank buys EUR/MYR optional spot to 1-month [2]  
 (e) Bank sells CHF/MYR optional 1-month to 2-month [3]  
 (f) Bank buys CHF/MYR 3-month fixed delivery [2]  
 (g) Price quoted to exporter for USD/MYR optional spot to 3-month [3]  
 (h) Price quoted to importer for CHF/MYR optional 5-month to 6-month [3]  
 (i) You are given the following rates:

Spot USD/MYR	3.7995/05
T/N USD/MYR Swap	-2 / +2

What is the theoretical quote for USD/MYR outright value tom? [2]

- (j) You need to buy USD against Euro. Indicate which **one** of the following banks provides the best rate, based on the following quotes:

Bank A	0.9010/15
Bank B	0.9008/13
Bank C	0.9011/16
Bank D	0.9009/14

[2]  
(Total:20 marks)

3. (a) An interbank AUD dealer is long 10million AUD/USD at 0.5120. He subsequently sold 5million AUD at 0.5160 and finally squared his position at 0.5075.

Using the USD/MYR rate of 3.8000, determine the profit/loss from these transactions in MYR. [3]

- (b) A spot USD/MYR transaction was executed between two local banks, Bank A and Bank B, on Friday, 8 February 2002. You are given the following information:

Date	Day
8 February 2002	Friday
9 February 2002	Saturday
10 February 2002	Sunday
11 February 2002	Monday
12 February 2002	Tuesday – Chinese New Year holiday
13 February 2002	Wednesday – Chinese New Year holiday
14 February 2002	Thursday
15 February 2002	Friday – National Holiday in U.S.A

What is the spot date? [2]

- (c) LYM Furniture Sdn Bhd (“LYM Furniture”) is a local trading firm. The company imports high quality furniture from Italy and re-exports them to Japan. In the past, the company paid the Italian exporter in lira but since the pegging of the MYR to USD, they have been paying the Italian exporter in USD by sight of letter of credit. The buyer in Japan has always insisted in making payments in JPY via telegraphic transfer **60** days upon receiving the goods. It normally takes **30** days for the goods to be transported from Italy to Japan. The last purchase of a container from the Italian exporter was for USD100,000 at an exchange rate of 3.8005 and the invoice price to the Japanese buyer was for JPY13,500,000.

Due to the continued weakness of both the Japanese Yen and the Euro, the company seeks your advice on the following:

- (i) What are the advantages for LYM Furniture in making payments in Euro as compared to the current practice of paying in USD? [2]
- (ii) Given the current weakness of the Japanese Yen, would you advise LYM Furniture to enter into a forward transaction? [2]
- (iii) Would the following internal hedging techniques be suitable to hedge LYM Furniture’s foreign exchange risks?
- (aa) Lagging [2]
- (bb) Forex risk shifting [2]
- (iv) What would be the profit or loss to LYM Furniture if they decide to lock in their profit/loss by entering into a 3-month JPY/MYR optional delivery contract at the exchange rate of 3.2525? [3]

- (d) You are given the following information:

Spot USD/MYR	3.8000
6-month USD interest rate	3.00%
6-month MYR interest rate	3.50%

Determine the 6-month USD/MYR swap points and the forward exchange rate using the general formula. [4]

(Total:20 marks)

4. (a) Cash flows are said to be the raw materials with which fund managers work. To define a cash flow properly, some of its characteristics must be specified.

Name **three** major characteristics of a cash flow and briefly explain each characteristic. [3]

- (b) (i) What do you understand by the term “value dates” in money market transactions? [2]

(ii) What are the value dates in a typical deposit or borrowing transaction? [2]

(iii) What would be the maturity value date for each of the following transactions:

(aa) A 1-month money market placement transacted for value date 23 January 2002 if the maturity date is a Saturday? [1]

(bb) A 3-month money market borrowing transacted for value date 30 April 2002? [1]

(cc) A 6-month money market placement transacted for value date 28 February 2002 if the maturity date is a holiday? [1]

- (c) (i) Explain the difference between a primary banker’s acceptance (BA) and a secondary BA. [2]

(ii) Name the **two** cost components in the creation of a primary BA and briefly explain the factors that affect each of these cost components. [4]

(iii) Silky Bank bought a BA of face value RM1,000,000.00 from Scruffy Bank on 4 March 2002 at a cost of RM992,808.22. At the time of purchase the BA had a remaining tenor of 75 days to maturity. On 4 April 2002, Silky Bank decided to sell the BA to generate liquidity. The prevailing two-way BA rates trading in the market on 4 April 2002 were as follows:

45 days BA	3.35 – 3.25 %
44 days BA	3.30 – 3.20 %
31 days BA	3.18 – 3.08 %
30 days BA	3.15 – 3.05 %

(aa) Determine the rate of discount at which Silky Bank bought the BA (to 2 decimal places). [2]

(bb) At what rate of discount can Silky Bank sell the BA on 4 April 2002 and what would be the settlement proceeds? [2]

(Total:20 marks)

5. (a) The US Federal funds or Fed funds, as they are commonly called, is the most important short-term US money market instrument.

(i) What are these Fed funds and what would be the most common tenor of these funds? [2]

(ii) In the year 2001, the US Federal Reserve Bank lowered the Fed funds rate **11** times. What would the impact of such changes or movements in the Fed funds rate? [2]

(iii) What gapping strategy would a money-centre bank take if the bank expects the Fed funds rate to be lowered in the near future and what would be the risks involved in taking this strategy? [3]

(iv) We often hear money market dealers comment that “anticipated Fed rate changes (whether upward or downward) have been priced in”.

What do they mean by this and how is this reflected? [3]

(b) You have the following information from Faith Bank:

<b>Asset/Liability</b>	<b>Amount</b>	<b>Rate (% p.a.)</b>
Savings deposits	RM200 million	2.50
Fixed deposits	RM750 million	3.25
NID issued	RM300 million	3.00
Retail loans	RM900 million	5.50
Corporate loans	RM250 million	5.00
Interbank placements	RM150 million	2.80
Interbank borrowings	RM50 million	2.60

- (i) Calculate the weighted average cost of all sources of liabilities excluding interbank sources (to 2 decimal places). [2]
- (ii) If the eligible liabilities base for the computation of non-interest bearing reserve requirements is the sum of all deposit liabilities less the net of interbank placements and borrowings, calculate the reserve requirements if the non-interest bearing reserve requirements is 5.0 % of the eligible liabilities base. [3]
- (iii) If the current market 3-month two-way interbank deposit rate is 3.05% – 3.15% p.a., what would be the break-even marginal cost of funds rate for a 3-month customer loan given the same reserve requirements in (b)(ii) above (to 2 decimal places)? [3]
- (iv) If Faith Bank's administrative cost was 25 basis points for the last half of the year and Faith Bank charges a credit spread of 75 basis points per annum for a 3-month customer loan, what would be the all-in rate for a 3-month customer loan? [2]  
(Total:20 marks)

6. (a) Explain why banks impose the following:

- (i) Daily dealing loss limits for interbank forex dealers [2]
- (ii) Foreign exchange dealing and money market lending limits for other banks – both local and overseas [2]
- (iii) Separate spot and forward limits for corporate customers [2]

(b) The following products are used in foreign exchange dealings. For each product, explain what are their strengths and weaknesses, and how and when you would use them:

- (i) Spot contracts
- (ii) Forward optional delivery contract
- (iii) Currency options
- (iv) Currency futures [8]

(c) Explain some of the measures taken by financial institutions to manage the following risks:

- (i) Country risk
- (ii) Liquidity risk
- (iii) Operational risk [6]  
(Total:20 marks)

## **OUTLINE ANSWERS**

### **Question 1**

- Candidates' answers to this question were satisfactory. For part (a) where "True" or "False" answers are required, candidates lost marks for not considering the options carefully before stating their answers.
- Answers to parts (b) & (c) relating to treasury reports and policies of central bank were generally good.
- Answers on Exchange Control Notices were poor; candidates could not fully describe them or had described them wrongly.

1. (a) (i) False  
(ii) True  
(iii) True  
(iv) False
- (b) (i) USD is likely to strengthen due to lower JPY interest rates and fears of further economic troubles in Japan.  
(ii)  $115.99/130.00 = 0.8922$   
(iii) (aa) premium  
(bb) discount
- (c) (i) Purchase of foreign currencies against local currency by the Central Bank will result in increase in supply of local currencies in the money market. For example, if Bank Negara Malaysia keeps buying USD against the MYR in the foreign exchange market, there will be an increase in the money supply of MYR in the money market.  
(ii) Malaysian government securities – taps domestic long-term funds – decrease in money supply  
Treasury bills – raise short-term funds – decrease in money supply
- (d) (i) ECM 6 – Credit Facilities to Non-Residents  
(ii) ECM 9 – Investments Abroad  
(iii) ECM 13 – Imports & Exports of Currency Notes, Bills of Exchange, Assurance Policies, etc.

### **Question 2**

Candidates were able to answer this popular question well. However, a few candidates merely provided the calculations and not stating the correct answers resulting in some marks lost.

2. (a) USD/CHF Spot = 1.7000
- (b) EUR/MYR Spot =  $3.8005 \times 0.8675 = 3.2969$
- (c) EUR/MYR 1-month fixed delivery =  $(3.7995 + 20) \times (0.8665 - 50) = 3.2749/50$
- (d) EUR/MYR Spot rate =  $3.7995 \times 0.8665 = 3.2923$   
EUR/MYR 1-month rate =  $(3.7995 + 20) \times (0.8665 - 50) = 3.2749/50$   
Option rate = 1-month rate = 3.2749/50

- (e) CHF/MYR value 1-month =  $(3.8005 + 30) / (1.6990 + 15) = 2.2367$   
 CHF/MYR value 2-month =  $(3.8005 + 55) / (1.6990 + 25) = 2.2368$   
 Option rate = 2-month rate = 2.2368
- (f) CHF/MYR value 3-month =  $(3.7995 + 75) / (1.7000 + 45) = 2.2334/35$
- (g) USD/MYR spot = 3.7995  
 USD/MYR value 3-month =  $(3.7995 + 75) = 3.8070$   
 Option rate = spot rate = 3.7995
- (h) CHF/MYR value 5-month =  $(3.8005 + 140) / (1.6990 + 55) = 2.2378$   
 CHF/MYR value 6-month =  $(3.8005 + 165) / (1.6990 + 70) = 2.2374$   
 Option rate = 5-month rate = 2.2378/79
- (i) 3.7993/3.8007
- (j) Bank C

**Question 3**

- Many candidates could not determine the spot date from the information given.
- Candidates also showed poor understanding of internal hedging techniques and their applications.

3. (a)

<u>AUD</u>		<u>USD</u>
+10,000,000	+2,000,000 x 0.5120	+5,120,000
-5,000,000	-5,000,000 x 0.5160	-2,580,000
-5,000,000	-5,000,000 x 0.5075	-2,537,500
0		-2,500

Close Out Rate = 3.8000

Net Loss = 2500 x 3.8000 = **MYR 9,500**

- (b) 14 February 2002, Thursday
- (c) (i) Opportunity to gain from foreign exchange movements. Perhaps, lower transaction costs.
- (ii) Yes, to hedge against possible foreign exchange losses due to Japanese Yen.
- (iii) (aa) Lagging – No, delayed payment of a weaker JPY would result in lesser MYR received by the company.
- (bb) Forex risk shifting – Yes, if the company could convince the Japanese buyer to make payments in USD to match their USD liabilities
- (iv)  $JPY13,500,000 \times 3.2525 = 439,087.50 - 380,050 = MYR59,037.50$
- (d) Swap points =  $\frac{\# \times \text{spot rate} \times \text{days}}{36000}$  where # = interest differential
- 6-month swap points =  $\frac{(3.5.00-3.00) \times 3.8000 \times 180}{36000}$   
 = 0.0095

The 6-month forward rate is **3.8095**.

#### Question 4

- Many candidates could not identify the major characteristics of a cash flow and did not seem to understand the concept of “value dates” in money market transactions.
- Some of the candidates were not able to explain the difference between a primary BA and a secondary BA nor answer the quantitative question based on BAs.

4. (a) The major characteristics of a cash-flow are:
- Direction of cash-flow. It can be an inflow or outflow. An inflow adds to liquidity while an outflow drains liquidity.
  - Timing of cash-flow. Knowing when the cash-flow will take place is critical in planning for liquidity.
  - Currency of cash-flow. Knowing the currency of cash-flow helps not only in planning for liquidity but also foreign exchange or translation risk (if any).
- (b) (i) In money market transactions, value dates are the dates whereby funds are either credited or debited and interest starts to be paid or earned from these value dates.
- (ii) The value dates in a typical money market transaction are the spot value date and the maturity value date.
- (iii) (aa) The maturity value date for a one-month money market placement transacted for value date January 23, 2002 would be Monday, February 25, 2002, the next business day since the normal maturity date February 23, 2002 falls on a Saturday, a non-business day.
- (bb) The maturity value date for a 3-month money market borrowing transacted for value date April 30, 2002 would be July 31, 2002. Since April 30, 2002 is the last business day in the month of March, the transaction would be done on a month-end-to-month-end basis.
- (cc) The maturity value date for a 6-month money market placement transacted for value date February 28, 2002 would be August 30, 2002, the next available business day before the normal maturity date August 31, 2002 since this date is a holiday and the maturity date being subjected to the “no crossing of month-end rule”.
- (c) (i) A primary banker’s acceptance (BA) refers to a newly created BA, that is, a BA that has been accepted and discounted for the first time while a secondary BA refers to a BA that has been discounted by a primary financial institution or purchased by an investor that is rediscounted/sold to another financial institution or purchaser/investor.
- (ii) The two cost components in the creation of a primary BA are the acceptor’s commission and the BA discounting rate.
- The acceptor’s commission is dependent on the credit standing of the drawer of the BA.
- The BA discounting rate is dependent on the general level of interest rates in the money market and the tenor of the BA.
- (iii) (aa)  $\text{Cost of BA} = \text{FV} [1 - (\text{Rate of discount} \times \text{Tenor}/36500)]$   
 $992,808.22 = 1,000,000 [1 - (\text{Rate of discount} \times 75/36500)]$   
 $\text{Rate of discount} = [1 - (992,808.22/1,000,000)] \times 36500/75$   
 $\text{Rate of discount Silky Bank bought the BA} = 3.50 \% \text{ p.a.}$

- (bb) Number of days held from March 4, 2002 to April 4, 2002 = 31 days  
 Remaining number days of BA on sale date = 75 – 31 = 44 days  
 Sell BA at market bid rate of 44 days to maturity that is 3.30 %.  
 Settlement proceeds = FV [1 – (Rate of Discounting x Tenor/36500)]  
 = 1,000,0000 (1 – (3.30 x 44/36500))  
 = RM 996,021.92

### **Question 5**

- Candidates' answers reflected poor understanding on the concept of Fed Funds.
- Many candidates were also not able to work out the required calculations on weight cost of deposits, eligibility liabilities base, reserve requirements, breakeven cost of funds and all-in rate of customer loans.

5. (a) (i) Fed Funds are domestic Dollar funds held in a bank's account with the local Federal Reserve Bank.

The most common tenor for these funds is the overnight Fed funds tenor.

- (ii) Movements or even expected movements in Fed funds will cause the short term US interest rates to move. This in turn will cause prices of both money market and capital instruments to appreciate or depreciate. These changes also have a profound impact on other global financial markets.
- (iii) The gapping strategy a Money-Centre Bank would take would be a negative gapping strategy, that is, lend long and borrow short USD funds with expected lowering of Fed funds rate.

The risk involved in taking a negative gapping strategy is:

- Price or interest rate risk. If interest rate rises, this strategy may have a negative spread.
- Liquidity risk. As this strategy requires a rollover of short-term borrowings, adverse liquidity market conditions may result in the Bank being unable to fund the longer-term assets even at higher interest rates.

- (iv) This means that the market has built-in into the yield curves today the expected or anticipated future changes in Fed fund rates.

This is reflected in the forward interest rates and the price of EuroDollar futures contracts.

(b) (i) Sources (excluding Inter-Bank)	Amount	Rate	Amount x Rate
Savings	200	2.50	500
Fixed Deposits	750	3.25	2,437.50
NID Issued	300	3.00	900
<b>Total</b>	<b>1,250</b>	<b>3.07</b>	<b>3,837.50</b>

Weighted average cost of all sources of liabilities = 3,837.50/1250 (excluding inter-bank)  
 = 3.07 % p.a.

- (ii) Eligible Liabilities Base = (Savings Deposits + Fixed Deposits + NID Issued) – (Interbank Placements – Interbank Borrowings)  
 = (200 + 750 + 300) – (150 – 50)  
 = 1250 – 100  
 = RM 1150 million  
 Reserve Requirements = 5.0% x 1150 million = **RM 57.50 million**

- (iii) Market 3-month two-way inter-bank deposits is 3.05 % - 3.15 %.  
 Non-Interest bearing Reserve Requirements = 5.0 % of E.L.  
 Break-even marginal rate cost of funds for customer loan  
 = Offer Rate/(1 – RR)  
 = 0.0305/(1 – 0.05)  
 = **3.21% p.a.**
- (iv) Administrative Cost for last half = 25 b.p.  
 Full year administrative cost = 50 b.p.  
 All-in rate for a 3-month customer loan  
 = Marginal Cost + Customer Spread + Administrative Cost  
 = 3.21 % + 0.75 % + 0.50 %  
 = **4.46% p.a.**

**Question 6**

- Candidates showed poor understanding when answering parts (a) & (c) on the concepts of treasury risks and management of various risks.
- Candidates also provided irrelevant details rather than what was specifically required.

6. (a) (i) • Operational control  
 • Ensure exchange rate risk is properly managed.
- (ii) • Credit Risks  
 • Liquidity Risks  
 • Country Risks.
- (iii) • Settlement risks  
 • Credit risks.
- (b) (i) • Usually no credit limit required  
 • Rates readily available  
 • Subject to market volatility  
 • Use for immediate transactions.
- (ii) • Easy to use – no adjustments for early delivery  
 • Hedging up to 6 months or more (with approval)  
 • Credit limit required  
 • Useful for ‘uncertain’ delivery date.
- (iii) • Form of insurance  
 • Need not take up contract if rates are unfavourable  
 • Need to pay premium  
 • Useful when there is a need to enjoy some flexibility.
- (iv) • Exchange Traded  
 • Margin Deposits and subsequently marked to market to keep pace with adverse movements  
 • Specified amount, date, time, place and designated price  
 • Useful hedging tools.
- (c) (i) **Country Risk**  
 • Monitor political and economic changes  
 • Credit limits for counterparty.

- (ii) **Liquidity Risk**
  - Diversify portfolio – right mixture of money market instruments
  - Control over overall money market positions.
  
- (iii) **Operational Risk**
  - Set up “Chinese-wall”
  - Two separate sets of independent books
  - Proper Audit
  - Disaster-recovery plans.