DP07

Treasury

4 APRIL 2006

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:

(i) Adjustable peg [2]

(ii) Managed float [2]

(iii) Bretton Woods [2]

(b) "The MYR softened against the USD despite the interest hike by Bank Negara Malaysia which raised its overnight policy rate by 30 basis point to 3.00%. However, the local interest rate is still unattractive compared to the higher USD interest rates."

Answer the following questions based on the above interest rates scenario:

(i) State **three** possible factors that could have influenced the softening of the MYR against the USD despite the local interest rate hike. [3]

(ii) Is the USD/MYR forward swap point a premium or a discount? Explain your answer. [1]

(c) Explain the difference between a "fixed exchange rate" and a "floating exchange rate" system. [2]

(d) State the titles of the following Exchange Control Notices issued by Bank Negara Malaysia:

(i) ECM2 [1]

(ii) ECM4 [1]

(e) Your local customer, Furnix Sdn Bhd (FSB), is a major exporter of leather furniture to Europe. FSB invoices all its exports in EURO. A major cost of FSB's business is the purchase of imported leather, which is paid in USD to the overseas supplier. FSB is concerned that with the removal of the MYR peg and the recent weakening of the EURO, its profit may be significantly affected.

(i) What are **two** foreign exchange hedging products that could be used to manage FSB's foreign exchange exposure? [2]

(ii) Explain both the benefits and risks of using the two hedging products identified in (e)(i) above. [4]

(Total:20 marks)

2. The following rates are quoted:

Item	USD/MYR	GBP/USD	USD/CHF
Spot (6 April 2006)	3.7790/00	1.7700/10	1.3060/70
1-month	55/45	25/15	40/30
2-month	100/90	20/10	80/70
3-month	150/140	15/5	115/105
4-month	200/190	10/0	160/150
5-month	255/245	0/10	190/180
6-month	310/300	10/20	230/220

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 USD/CHF value spot [1]

(b) Bank sells GBP/USD value spot [1]

(c) Bank sells GBP/MYR value 4-month fixed delivery [2]

(d) Bank buys GBP/MYR option 5-month to 6-month [3]

(e) Bank buys CHF/MYR option spot to 1-month [2]

(f) Bank sells CHF/MYR 5-month fixed delivery [2]

(g) Price quoted to exporter for USD/MYR option 1 month to 2 month [2]

(h) Price quoted to importer for CHF/MYR option 2 month to 3 month [3]

(i) Maju Sama Bhd (MSB), a local exporter, will be receiving export proceeds of USD300,000 during the next 3 months. MSB would like to hedge the proceeds by entering into the following:

- A fixed forward delivery contract for USD100,000 at the 3-month forward rate.
- An optional delivery contract for the remaining amount at the 2-month to 3-month forward rate.

How much export proceeds in MYR would MSB receive on utilising:

(i) the 3-month fixed forward delivery contract? [2]

(ii) the 2-month to 3-month option delivery forward contract? [2]

(Total:20 marks)

3. (a) An overseas correspondent bank left the following order with your MYR interbank dealer in the morning:

"Spot USD/MYR order. Buy three million USD/MYR at 3.7750. If done, stop loss at 3.7670 and take profit at 3.7820, one cancels the other. Order good until cancelled. Usual instructions. Thank you."

At the time of receiving the order (8.00am) the USD/MYR was dealing at 3.7770/75. During the next four hours until noon, the market moved in the range of 3.7685 to 3.7790. The dealing range from noon to 5.00pm was 3.7785 to 3.7835:

(i) Which orders were executed? [2]

(ii) What was the profit or loss amount in MYR which the overseas correspondent bank made or suffered arising from the above order? [2]

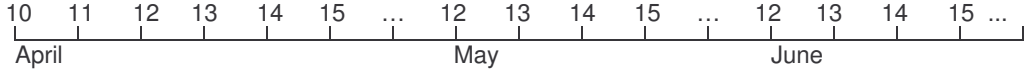
(b) As an interbank dealer, you have made a price in USD/MYR of "00/05" (The big figure is 3.77) to a forex broker:

(i) What does it mean if the broker responded "yours"? [1]

(ii) What is the exchange rate of the transaction? [1]

(iii) Does the interbank dealer need to honour the deal if the broker provides you with the name of a counterparty which does not have a dealing limit with your bank? [1]

(c)



The transaction date is Monday, April 10. May 13 is a Saturday.

Given the above information with the assumption that except for May 13, all dates given are good for transaction, answer the following questions:

(i) What is the spot date? [1]

(ii) What is the value "spot next" date? [1]

(iii) What is the date for value 1-month fixed delivery contract? [1]

(iv) What are the dates for 1-month to 2-month option delivery contract? [1]

(d) Your interbank GBP/USD dealer has executed the following trades:

Transaction	Amount	Currency	Rate
Sold	10,000,000	GBP/USD	1.7740
Sold	5,000,000	GBP/USD	1.7768
Purchased	8,000,000	GBP/USD	1.7744
Sold	10,000,000	GBP/USD	1.7780
Purchased	10,000,000	GBP/USD	1.7722

(i) What is the closing position of the dealer and average cost? [2]

(ii) If the day-end spot GBP/USD is 1.7725/35, what is the revaluation profit/loss of this position in USD? [2]

(iii) Assume that the dealer squares the position at GBP/USD rate of 1.7740.

What will be the profit or loss in MYR?

(Use the USD/MYR rate of 3.7700 in your calculation.) [2]

(e) List **three** advantages of using foreign exchange swaps. [3]

(Total:20 marks)

4. (a) The flattening of the yield curve adversely impacted the revenues for financial institutions from USD gapping activities during the second half of 2005:

(i) Explain what does the "flattening of the yield curve" mean. [2]

(ii) What are "gapping activities" and how would the flattening of the yield curve adversely affect the revenues from gapping activities? [3]

(b) (i) Explain what a "positive yield curve environment" is. [1]

(ii) If the general level of interest rates has peaked under a positive yield curve environment, what gapping strategy should a bank adopt? Explain your answer. [2]

(c) The following were the rate scenario and regulatory requirements prevailing on 30 December 2005:

91-day Malaysian Government Treasury bill	2.90% per annum (discount)
91-day Twinkle Bank banker's acceptance	3.20% per annum (discount)
3-month KLIBOR	3.00% per annum
Statutory reserve requirement (non-interest bearing)	4.00% of liability base

(i) What is the discount spread differential between a 91-day Malaysian Government Treasury Bill and a 91-day Twinkle Bank banker's acceptance on 30 December 2005? [1]

(ii) What accounts for the discount spread differential in c(i) above? [1]

(iii) What is the effective interest rate of the 91-day Twinkle Bank banker's acceptance on 30 December 2005? (Answer to 2 decimal places) [2]

(iv) If Bank A wishes to lend a 3-month loan to Customer B, what breakdown rate can Bank A lend Customer B assuming the above rate scenario and reserve requirements? [2]

(v) If Customer C wishes to borrow RM5million for 3 months from Bank A on 30 December 2005, what loan rate should Bank A lend if Bank A now requires a spread of 150 basis points profit after cost of reserves? [1]

(vi) What maturity proceeds will Customer C have to pay Bank A on 30 March 2006 if Customer C agrees to accept the loan rate quoted by Bank A under the terms in (v) above? (Answer to the nearest sen and assume a 365-day year) [2]

(d) Explain the following money market terminologies:

(i) Eligible value date [1]

(ii) Pre-settlement risk [2]

(Total:20 marks)

5. (a) The local currency sovereign yield curve in Malaysia is built upon the market prices of the Malaysian Government Securities (MGS) issuance traded in the domestic capital market.

(i) What are MGS? [2]

(ii) Describe **two** major features of MGS. [2]

(b) FAITH Bank bought RM10million of nominal value of an MGS with a remaining tenor of 3 years bearing a coupon of 3.75% per annum from the secondary market at a clean price of 99.50.

(i) Based on the above information, what can we say about the prevailing 3-year interest rate level as compared to the coupon rate? [2]

(ii) Explain what clean price means. [1]

(iii) If the two-way price of the MGS purchased in the secondary market has now moved to 99.45/55 and FAITH Bank is required to sell all the MGS originally purchased to the market, at what price will the sale be done at and what would be the gain or loss on this transaction? (Answer of gain or loss to the nearest sen.) [3]

(c) (i) Explain what is meant by the term "Fed Funds". [2]

(ii) Which tenor of "Fed Funds" is most watched by economists, analysts and traders around the globe as the barometer of the US interest rate policy? [1]

(d) Stan Bank bought RM50million of Shah Bank's newly issued Negotiable Instrument of Deposits (NIDs) on 30 September 2005 with maturity date of 3 January 2006 at a coupon rate of 3.0% per annum.

(i) What is an NID? [2]

(ii) Describe **two** main features of NIDs. [2]

(iii) On 3 November 2005, Stan Bank decided to sell the RM50million NIDs purchased into the secondary market, as a rise in interest rates was imminent.

If the prevailing two-way market quote for Shah Bank's NID for the remaining tenor was quoted at 3.20%/3.10%, at what rate would the NIDs be sold and what would be the settlement proceeds that Stan Bank will receive on 3 November 2005? (Answer to the nearest sen for the settlement proceeds.) [3]

(Total:20 marks)

6. (a) Banks impose limits on foreign exchange and money market dealings.

Explain the following types of limits:

(i) Intra-day limit [2]

(ii) Overnight limit [2]

(iii) Daily loss limit [2]

(b) The Board of Directors of Ding Dong Berhad is considering using a forward rate agreement (FRA) or an interest rate cap to hedge against a possible increase in interest rates.

(i) Explain to the Board, the basic features of an FRA and interest rate cap. [4]

(ii) Describe **one** benefit and **one** risk of using an FRA. [2]

(c) Explain, with an example, the following:

(i) Counterparty risk [2]

(ii) Settlement risk [2]

(d) Explain, with an example, the following internal currency hedging strategies employed by corporations:

(i) Foreign exchange risk shifting [2]

(ii) Cross-currency matching [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 did not attempt certain parts of the question.
- Answers indicate insufficient preparation by candidates.
- Be well prepared. As this is a 'technical' subject, answers must be on a 'technical' basis, not some general explanations or ideas about the subject. Avoid irrelevant answers.

1. (a) (i) Adjustable peg – An exchange rate system where a country's exchange rate is "pegged" (i.e. fixed) in relation to another currency. The official rate may be changed from time to time.

(ii) Managed float – When the monetary authorities (central bank) intervene regularly in the market to stabilise the rates or to aim the exchange rate in a required direction.

(iii) Bretton Woods – The site of the conference which in 1944 led to the establishment of the post-war foreign exchange system that remained intact until the early 1970s. The conference resulted in the formation of the IMF. The system fixed currencies in a fixed exchange rate system with 1% fluctuation of the currency to gold or the dollar.

(b) (i)
- Commercial demand, market forces
- Political factors
- Technical
- International event
- Speculation
- Other economic factors

(ii) Discount – USD interest rate is higher than the MYR interest rate

(c) Fixed exchange system – the exchange rate is firmly fixed (pegged) by edict of a government or central bank/monetary authority.

Floating exchange system – the exchange rate is the result of the supply and demand in the open and unrestricted foreign exchange markets.

(d) (i) ECM 2 – Dealings in gold and foreign currency

(ii) ECM 4 – General payments

(e) (i)
– Foreign currency forward contract
– Foreign currency options
– Foreign currency futures

(Choose any two)

(ii) <u>Benefits</u>
- Forwards – Certain amount of receivables once the contract is fixed, no upfront fees
- Options – Benefits from favourable movements in the exchange rate, Not penalised for non-delivery
- Futures – Transferable contract, can be extended on maturity, can be closed out, risk of default minimum.

Risk

- Forwards – Cannot benefit from positive movement in exchange rate, contract is binding, may suffer losses for non-delivery
- Options – Premium may be expensive, may not be available for small currency exposure.
- Futures – May require delivery, top up margin, standardised amount, may not benefit from positive movement.

Question 2

- Candidates failed to understand the principles of discount and premium, resulting in wrong rates/swap points used in the calculations.
- Candidates need to understand fully the concept of discount and premium. Do more practical exercises.

2. (a) USD/CHF value spot = 1.3060

(b) GBP/USD value spot = 1.7710

(c) GBP/MYR value 4 month fixed = (3.7800 – 190) x (1.7710 – 0) = 6.6607

(d) GBP/MYR value 5-month = (3.7790 – 255) x (1.7700 – 0) = 6.6436/7
GBP/MYR value 6-month = (3.7790 – 310) x (1.7700 + 10) = 6.6377

Option rate = 6-month = 6.6377

(e) CHF/MYR value spot = (3.7790) / (1.3070) = 2.8913/4
CHF/MYR value 1-month = (3.7790 – 55) / (1.3070 – 30) = 2.8937/8

Option rate = spot = 2.8913/14

(f) CHF/MYR value 5-month = (3.7800 – 245) / (1.3060 – 190) = 2.9180

(g) USD/MYR value 1-month = 3.7790 – 55 = 3.7735
USD/MYR value 2-month = 3.7790 – 100 = 3.7690

Option rate = 2-month = 3.7690

(h) CHF/MYR value 2-month = (3.7800 – 90) / (1.3060 – 80) = 2.9052
CHF/MYR value 3-month = (3.7800 – 140) / (1.3060 – 115) = 2.9092

Option rate = 3-month = 2.9092

(i) (i) Rate = 3.7790 – 150 = 3.7640
USD100,000 x 3.7640 = MYR376,400

(ii) Rate = 3.7790 – 100 = 3.7690
USD200,000 x 3.7640 = MYR752,800

Question 3

Candidates did not attempt some parts of the question.

3. (a) (i) Buy USD 3 million at 3.7750
Sold USD 3 million at 3.7820

(ii)

USD	Rate	MYR
+3,000,000	3.7750	- 11,325,000
-3,000,000	3.7820	+ 11,346,000
	Profit	21,000

(b) (i) Bought USD3 million

(ii) 3.7700

(iii) Yes, broker would need to do a "switch", i.e. change name

(c) (i) Spot – April 12

Spot next – April 13

1-month – May 12

Option 1-month – 2-month: May 12 to June 12

(d) (i)

GBP		USD
-10,000,000	1.7740	+17,740,000
-5,000,000	1.7768	+8,884,000
+8,000,000	1.7744	-14,195,200
-10,000,000	1.7780	+17,780,000
+10,000,000	1.7722	-17,722,000
-7,000,000		**-12,486,800**

Position = Short GBP7,000,000
Average cost = 12,486,800/7,000,000 = 1.7838

(ii) Short GBP7,000,000 at 1.7838
Revaluation rate = 1.7735
Revaluation profit = 7,000,000 x (1.7838 – 1.7735) = USD72,100

(iii) Short GBP 7,000,000 at 1.7838. Square at 1.7740
Profit = 7,000,000 x (1.7838 – 1.7740) x 3.7700 = MYR258,622

(e)
- Reduction of credit risks
- Costs may be lower
- Minimal impact on bank's balance sheet
- Possible tax advantage

(Choose any three)

Question 4

- Candidates were unable to show understanding on the concepts tested and their application.
- Candidates regurgitated facts with no relevance to the questions.
- Candidates were unable to explain the terminologies.
- Answer questions on concepts directly and precisely.
- Understand how concepts are applied.
- Revise on work examples pertaining to the application of concepts.

4. (a) (i) A flattening of the yield curve occurs when the interest rate differential between short-term interest rates and long-term interest rates narrow significantly and this differential may reach zero or close to zero at times. In general during a flattening of the yield curve, short-term rates will rise while long-term interest rates will decline to a point where the interest differentials between these rates are narrowed.

(ii) Gapping activities are activities arising from the deliberate maturity mismatch of assets and liabilities in a bank's books. Through gapping activities, the bank's objective is to improve or gain interest spreads arising from the deliberate mismatch of assets and liabilities, within given acceptable price and liquidity risks.

As the yield curve flattens, the interest differentials between short-term and long-term interest rates narrow, hence reducing the spreads and opportunities from gapping which in turn affect revenues adversely.

(b) (i) A positive yield curve environment is one where interest rates on shorter end maturities are lower than interest rates on the longer end maturities.

(ii) The bank should adopt a negative gapping strategy, i.e. lend long and borrow short.

This is because it would be most profitable to lend long and then borrow short in a positive or upward sloping yield curve as the spread differential between long-term interest rates and short-term interest rates would in general be the widest when interest rates have peaked.

(c) (i) The discount spread differential between a 91-day Malaysian Government Treasury Bill and a 91-day Twinkle Bank banker's acceptance on 30 December 2005
= 2.90%p.a. - 3.2%p.a. = - 0.30%p.a.

OR

The 91-day Malaysian Government Treasury Bill is 0.30%p.a. (discount) lower than a 91-day Twinkle Bank banker's acceptance on 30 December 2005.

As both instruments have the same maturity, the discount differential is due to the differing credit standing or rating of the two issuers, one being the Government of Malaysia which carries sovereign risk and the other being a Bank.

(iii) Effective Interest Rate
= Discount rate / [1 – (Discount Rate x Tenor/365)]
= 0.032/[(1– (0.032) x 91/365)]
= 0.03225 = 3.22% or 3.23%p.a.

(iv) Bank A can lend Customer B at 3-month KLIBOR rate plus cost of reserves
= 3-months KLIBOR Rate/(1 – Statutory Reserve Requirement)
= 0.03/(1 – 0.04)
= 0.03125 = 3.12%p.a. or 3.13%p.a.

Bank A should lend Customer C at 3 month LIBOR plus cost of reserves plus spread of 150 basis points
= 3.12%p.a. (or 3.13%p.a.) + 1.50%p.a.
= 4.62%p.a. or 4.63%p.a.

Maturity proceeds
= RM5,000,000 x [1 + (4.63% (or 4.62%) x (1 + 31 + 28 + 30)/365)]
= RM5,056,958.90 or RM5,057,082.19

(d) (i) An eligible value date is defined as a good business day in the country of the currency that is being transacted. A good business day is a day whereby it is not a holiday in the country of the currency that is being transacted and would exclude Saturdays and Sundays in most countries.

(ii) Pre-settlement is the risk that one of the counter-parties defaults on a foreign exchange contract before the delivery date.

Pre-settlement risk occurs in all forward foreign exchange deals and FX swaps. This could happen when a counterparty to a forward contract goes in liquidation or closes down before the delivery date.

Question 5

- One of the candidates had poor understanding of the concepts and was unable to apply them.
- Revise on work examples pertaining to the application of concepts.

5. (a) (i) Malaysian Government Securities (MGS) are Ringgit-denominated interest-bearing bonds issued by the Government of Malaysia to tap domestic long-term funds to finance development projects.

(ii) The principal features of MGS are:
- Coupon bearing debt obligations of the Government of Malaysia
- Interest is paid semi-annually
- It is a scripless security and is settled in RENTAS
- Original maturities range from 3-21 years
- Benchmark issues have the market-making support from Principal Dealers that are obliged to quite two-way prices
- Minimum Retail amount is RM1,000.00 but standard secondary trading lot is RM5million nominal value
- Prices are quoted in price per RM100 nominal value

(b) (i) Since the clean price is below par, i.e. at 99.50, the prevailing 3-year interest rate is trading at a higher rate than the coupon of 3.75%p.a.

(ii) Clean price means the price of the bond without taking into consideration the accrued interest due to the bond.

(iii) If Faith Bank is required to sell all the MGS, it will have to sell to the market at the market's bid rate which is 99.45.

The gain or loss on this transaction will be:
= RM(10,000,000 x 99.45/100) – (10,000,000 x 99.50/100)
= RM5,000 (loss)

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

(ii) The most watched tenor is the overnight Fed Funds tenor.

(d) (i) A Ringgit Negotiable Instrument of Deposit is a document issued by a commercial bank or merchant bank or finance company in Malaysia (authorised by Bank Negara Malaysia) certifying that a sum in Ringgit has been deposited with the authorising issuing institution and payable at the nominal value at a specified date to bearer.

(ii) The main features of NIDs are:

- An NID can carry a fixed, floating or zero coupon rate of interest payable at maturity or at the interest dates depending on the type of NID issued.
- It is negotiable.
- It is legally transferable by mere delivery through an authorised depository.
- It is a bearer instrument.

(Any two of the above)

(iii) Stan Bank will have to sell the RM 50 million of Shah Bank's NIDs at the prevailing market bid rate i.e. at 3.20% p.a.

The settlement proceeds that Stan Bank will receive
$= \frac{P \times [36500 + (Cpn \times Original\ Tenor)]}{[36500 + (Yield \times Remaining\ Tenor)]}$

where P = Nominal Value
= 50,000,000 x [36500 + (3.0 x 95)]/ [36500 + (3.2 x 61)]
= RM50,122,359.32/33

Question 6

- Candidates did not attempt some parts of the question.
- Candidates need to ensure that all parts of the syllabus are covered during revision.

6. (a) (i) Intraday limit – Maximum open positions any time during the dealing period i.e. start of dealing until the close of dealing for a normal day.

(ii) Overnight limit – Maximum positions that are allowed to be carried on at the end of the normal day trading until the start of the following day.

(iii) Daily loss limit – Maximum loss allowed for a dealer per normal day dealing.

(b) (i) *FRA* – This is an agreement between two parties, which fixes the interest rate that will apply to a notional loan or deposit commencing on an agreed future date for a specified term.

Interest rate cap – Cap is an interest rate option that enables the buyer to fix a maximum borrowing rate for a future period. A cap provides protection against a rise in interest rates above a specified strike or cap rate.

(ii) *Benefit* – Useful off-balance sheet instrument that enables the company to lock into a future rate of interest.

Risk – Contractual – net interest payment to be settled at the start of the interest period.

(c) (i) Counterparty risk – the exposure of one party to the risk that the counter party might default and thereby suffered a loss. For example, a local bank has entered into a forward transaction with an overseas bank. Due to insolvency, the overseas bank is unable to fulfill the settlement on maturity date.

(ii) Settlement risk – is the risk that a settlement in a transfer system does not take place as expected. This usually happens because one party defaults on its clearing obligations to one or more counterparties. For example, a local bank would have transferred the MYR amount of the USD/MYR transaction but have yet to receive the USD amount due to time zone difference. Subsequently, payment was not received due to insolvency or technical difficulties interrupting delivery resulting in delayed payment.

(d) (i) Foreign exchange risk shifting – company attempts to avoid currency exposure risks all together by trying to bill all its receivables and payables in its home currency. For example, a US company operating in Singapore would bill its customer in USD.

(ii) Cross currency matching involves the usage of one foreign currency receivables to hedge against another currency payable. For example, using SGD receivables to hedge against BND payables as both are at parity.