

DP07

Treasury

7 OCTOBER 2003

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) (i) What does the term "foreign exchange contract" mean? [1]
- (ii) Name **three** factors that influence movement of the foreign exchange rate. [3]
- (iii) What is an "optional forward delivery contract"? [1]
- (iv) Why do companies use optional forward delivery contracts? [1]
- (b) "The USD continued to decline against the JPY and the Euro despite some positive economic news. Meanwhile, a further interest rate cut by the Federal Reserve brings the USD interest rate closer to 0%. LIBOR rate for USD is currently at 1.5% while the KLIBOR rate is 3.0% for a 3-month tenor."
- Reacting to the above report, a corporate dealer advises her client, who exports furniture to Europe, to invoice his customers in Euro instead of USD. However, a jobber does not appear concerned with the report, and trades normally. A forex swap dealer is of the opinion that the forward swap points between the USD and MYR will further widen.
- Based on the above scenario, answer the following questions:
- (i) Do you agree with the advice of the corporate dealer? Briefly explain your answer. [2]
- (ii) Why is the jobber not concerned with the report? [1]
- (iii) Do you agree with the opinion of the forex swap dealer? Briefly explain your answer. [2]
- (iv) Is the 3-month USD swap points at a premium or discount against the MYR? [1]
- (c) (i) Explain the roles of principals and money-broking companies as outlined in the "Malaysian Code of Conduct for Principals and Brokers in the Wholesale Money and Foreign Exchange Markets". [3]
- (ii) Explain how Bank Negara Malaysia can bring about changes in liquidity of the financial system by direct borrowing and lending via the money market. [3]
- (d) State the title of any **two** of the following Exchange Control Notices issued by Bank Negara Malaysia:
- (i) ECM 2 [1]
- (ii) ECM 4 [1]
- (iii) ECM 6 [1]
- (Total:20 marks)

2. The following rates are quoted:

	USD/MYR	AUD/USD	USD/JPY
Spot (8 October 2003)	3.7995/05	0.6643/53	119.00/10
1-month	43/53	10/0	-10/0
2-month	85/95	25/15	0/10
3-month	135/140	45/35	10/20
4-month	183/203	70/55	20/30
5-month	228/248	95/75	30/40
6-month	280/275	125/100	50/70

Based on the above rates, calculate the following:

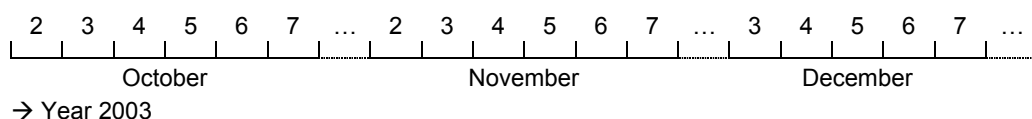
- (a) Bank sells USD/JPY value spot [1]
- (b) Bank sells AUD/USD value spot [1]
- (c) Bank buys JPY/MYR value 3-month fixed delivery [2]
- (d) Bank sells JPY/MYR option spot to 1-month [2]
- (e) Bank sells AUD/MYR option 2-month to 3-month [3]
- (f) Bank buys AUD/MYR 1-month fixed delivery [2]
- (g) Price quoted to exporter for AUD/MYR option spot to 2-month [3]
- (h) Price quoted to importer for JPY/MYR option 5-month to 6-month [3]
- (i) A non-resident account holder of your bank received a USD150,000 telegraphic transfer value spot. His instructions to your bank are as follows:

- Convert USD50,000 directly into AUD and credit his AUD account accordingly.
- Convert USD70,000 directly into JPY and credit his JPY account accordingly.
- Balance to be converted into MYR and credited to his MYR current account.

Assuming that no margins or charges are imposed and all exchange controls/regulations are complied with, answer the following questions:

- (i) What is the amount of AUD credited into the AUD account? [1]
 - (ii) What is the amount of JPY credited into the JPY account? [1]
 - (iii) What is the balance of MYR credited into the MYR current account? [1]
- (Total:20 marks)

3. (a)



- The transaction date is 2 October 2003 (Thursday).
- 3 October 2003 (Friday) is a bank holiday in the United States of America and Malaysia.
- All foreign exchange contracts entered into are for USD/MYR.

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

- (i) What is the spot date? [1]
- (ii) What is the value "tom" date? [1]
- (iii) What is the date for value 2-month fixed outright delivery contract? [1]
- (iv) What are the dates for 1-month to 2-month option delivery contract? [1]

- (b) An interbank dealer leaves an overnight order as follows:

“Good day to you friends, here is a spot USD/SGD order for you good until done. We are buyers of 10 USD at 1.6960 (take profit) or at 1.7045 (stop loss). Kindly return the order back to us tom if not executed.”

The following rates were quoted during the period of the order:

Time	7pm	9pm	11pm	1am	3am	5am	7am
Rate	1.6980	1.6970	1.7000	1.6980	1.7050	1.7000	1.6950

Based on the information above, answer the following questions:

- (i) Explain the meaning of an “either or” order. [2]
- (ii) If the order was executed, at what rate would the order be done? [1]
- (iii) Assume that the order was executed. If the interbank dealer’s original cost was 1.6995 and his daily loss limit was RM100,000, his limit would have been exceeded.
What would be the amount exceeded? (Use USD/MYR rate of 3.8000 and the closed out rate for your calculations.) [3]
- (c) DXY Enterprise has entered into a fixed foreign exchange contract for its export of USD1,000,000 to Australia at 3.8030. The delivery date of the original fixed foreign exchange contract is 10 October 2003. DXY Enterprise has now been informed by its buyer in Australia that the payment would only be made on 10 November 2003 instead of the original schedule date of 10 October 2003.

The following information is also given:

Spot (10 October 2003)	3.7995/05
1-month	40/50
2-month	80/90
3-month	120/130

Assuming that all exchange controls are complied with and that the bank does not impose any margins or charges, answer the following questions:

- (i) How much profit/loss would DXY Enterprise earn/incur if the bank closed out the foreign exchange contract at the spot offer rate? [2]
- (ii) What is the new fixed delivery contract rate for value 10 November 2003? (Use the closed out rate in (c)(i) for your calculation.) [2]
- (d) (i) What is a foreign exchange swap? [1]
- (ii) Describe **two** uses of swaps. [2]
- (iii) Given the following:

Spot USD/MYR	3.7995/05
3-month USD interest rate	1.50 - 2.00% (90 days)
3-month MYR interest rate	3.50 - 4.00% (90 days)

Determine the 3-month USD/MYR swap points using the general formula. (Use the mid-rates in your calculations.) [3]

(Total:20 marks)

4. (a) What is a “short-term Negotiable Certificate of Deposit”? [2]
- (b) Describe **two** major characteristics of negotiable instruments of deposit. [2]
- (c) Faith Bank bought a **120**-day Negotiable Certificate of Deposit (NCD) on 1 July 2003 at a coupon rate of 3.2% per annum from the primary issuer. On 16 August 2003, Faith Bank sold the NCD in the secondary market to Phil Bank at a rate of 3.5% per annum.
- (i) What are the factors that would determine the coupon rate of the NCD bought by Faith Bank? [2]
- (ii) What proceeds will Faith Bank receive from Phil Bank on the sale of the NCD on 16 August 2003 if the nominal value of the NCD was RM1,000,000? (Answer to 2 decimal places.) [3]
- (d) Given below is a two-way secondary market quote for a Banker’s Acceptance (BA) with the following supporting information as at today:

Secondary market two-way quote	2.70% - 2.60% per annum
Drawer	Norshah Enterprises Sdn Bhd
Acceptor	LQP Bank
Face value	RM1,000,000
Primary discounting rate	2.80% per annum
Acceptor’s commission	0.25% per annum
Tenor of BA	95 days
Remaining days to maturity	75 days

Based on the information given, answer the following questions:

- (i) Explain the meaning of the terms “drawer” and “acceptor”. [2]
- (ii) What is the “bid rate” in the above two-way quote and what does it mean? [2]
- (iii) What was the acceptor’s commission paid when the BA was accepted? (Answer to 2 decimal places) [2]
- (iv) If Stan Bank wishes to buy this BA from the secondary market, what factors would Stan Bank consider in determining the discounting rate to bid? [2]
- (v) If Stan Bank buys the BA today at the rate offered in the secondary market, calculate the BA proceeds that Stan Bank would have to pay. (Answer to 2 decimal places) [3]
(Total:20 marks)
5. (a) Silky Bank pays 3.00% flat for **four** months on a deposit while Cutie Bank pays 7.60% flat for **ten** months.
In which bank would you place your deposit? Show all workings. [2]
- (b) Scruffy Bank charges 5.00% per annum discount for a **one**-year loan while Yukee Bank charges 5.25% per annum with interest payable at the end of the **one**-year period.
Which bank would you borrow from? Show all workings. [2]
- (c) State the maturity date for each of the following transactions:
- (i) A 3-month money market placement transacted for value date 30 September 2003. [1]
- (ii) A 1-month USD money market placement transacted in Malaysia for value date 1 April 2003 if the maturity date is a holiday in Malaysia. [1]

- (iii) A 6-month money market borrowing transacted for value date 22 May 2003 if the maturity date is a Saturday. [1]
- (d) The prevailing 3-month interbank Ringgit deposit rate is quoted at 2.85% - 2.95% per annum. Cost of maintaining regulatory reserves is said to be at 15 basis points per annum and is borne by the loan asset users.
- (i) If PQR Bank wishes to make a profit of 25 basis points per annum from a customer who wishes to place a 3-month deposit, what deposit rate should PQR Bank quote to the customer? [2]
- (ii) What is the all-in three months cost of funds that PQR Bank will quote for a customer loan if the customer spread is 125 basis points per annum? [2]
- (iii) If the all-in three months cost of funds quoted in (d)(ii) above was accepted for a loan of RM10million, what would be the total repayment amount of the loan on maturity? (Answer to 2 decimal places.) [2]
- (e) The Asset-Liability Committee of Hope Bank has recently decided to move the bank's positioning balance sheet to a "negative gapping position".
- (i) What is a "negative gapping position"? [2]
- (ii) Why would Hope Bank undertake such a positioning? [1]
- (iii) What shape of market yield curve would most favour a negative gapping position? [2]
- (iv) What are the risks associated with taking a negative gapping position? [2]
- (Total:20 marks)
6. (a) A bank, which is actively involved in money market and foreign exchange activities, is subjected to several potential risks such as:
- Liquidity risk
 - Interest rate risk
 - Operational risk
- (i) Briefly explain each type of risk stated above. [3]
- (ii) Describe with an example how the bank can control the different types of risk stated above. [3]
- (b) Briefly explain on the following:
- (i) 3-month KLIBOR futures [3]
- (ii) Green banker's acceptance [2]
- (iii) Forward rate agreement [3]
- (c) There are three philosophies that relate to the hedging of foreign exchange exposure:
- Hedge everything
 - Hedge nothing
 - Hedge specifically
- Choose any **two** philosophies and for each philosophy:
- (i) State **one** advantage and **one** disadvantage. [4]
- (ii) Provide an example of the type of companies that will likely adopt the philosophy. [2]
- (Total:20 marks)

OUTLINE ANSWERS

Question 1

Most candidates were able to provide the correct answers to the questions. However, some of them were not able to provide reasons to support their answers.

1. (a) (i) A foreign exchange contract is a legal and binding agreement entered between two counter-parties whereby one counter-party agrees to deliver a specified amount of one currency in exchange for another specified amount of currency to be delivered at a specific date or some future date.
- (ii) Any three factors: political, economic, commercial, market, etc.
- (iii) It is a deal concluded today and actual delivery will take place at any time between the specified periods.
- (iv) When the transaction date is uncertain and they want to “lock in” their cost or protect the present value of a particular currency from exchange rate volatility.
- (b) (i) No – USD is pegged – certainty of exchange rate compared that to the Euro.
Yes – Euro strengthening – expect forex gains but there is risk of volatility, etc.
- (ii) Move in and out of market very quickly, each time for small profit margin – hence less concern with the longer term trend.
- (iii) Yes, if there is no reduction or expectation of reduction in MYR interest rates.
- (iv) Premium – as USD interest rates is lower than MYR interest rates.
- (c) (i) Principals
- Deal for their own account
 - If acting as an agent – make known capacity, declare the party and confirm deals done on an agency basis.
- Money-broking Companies
- Act as manager of the deals
 - Maintain confidentiality.
- (ii) Borrowing and Lending
- Sterilise large inflows of funds
 - Contract Liquidity without constraining the supply of money market papers
 - Smoothen fluctuations in liquidity.
- (d) (i) ECM 2 – Dealing in Gold and Foreign Currency
(ii) ECM 4 – Making Payments in any foreign currency
(iii) ECM 6 – Credit Facilities extended to non-residents

Question 2

- Most of the candidates provided step-by-step calculations and the correct answers. Candidates who did not state the answer clearly or show proper calculations could not obtain the full marks.
- Candidates should check that their answers are realistic. If they are not, it is likely that the answers are wrong.

2. (a) USD/JPY value spot = 119.10

- (b) AUD/USD value spot = 0.6653
- (c) JPY/MYR value 3-month fixed = $(3.7995 + 135) \times (119.10 + 20) = 3.1961$ (100 units)
- (d) JPY/MYR value spot = $(3.8005) / (119.00) = 3.1936/7$ (100 units)
- JPY/MYR value 1-month = $(3.8005 + 53) / (119.00 - 10) = 3.2008$ (100 units)
- Option rate = 1-month = 3.2008
- (e) AUD/MYR value 2-month = $(3.8005 + 95) \times (0.6653 - 15) = 2.5290/1$
- AUD/MYR value 3-month = $(3.8005 + 140) \times (0.6653 - 35) = 2.5244$
- Option rate = 2-month = 2.5290/1
- (f) AUD/MYR value 1-month = $(3.7995 + 43) \times (0.6643 - 10) = 2.5230/1$
- (g) AUD/MYR value spot = $3.7995 \times 0.6643 = 2.5240$
- AUD/MYR value 2-month = $(3.7995 + 85) \times (0.6643 - 25) = 2.5201$
- Option rate = 2-month = 2.5201
- (h) JPY/MYR value 5-month = $(3.8005 + 248) / (119.00 + 30) = 3.2064/5$
- JPY/MYR value 6-month = $(3.8005 - 275) / (119.00 + 50) = 3.1573$
- Option rate = 5month = 3.2064/5
- (i) (i) $50,000/0.6653 = \text{AUD}75,154.06/7$
(ii) $70,000 \times 119.00 = \text{JPY}8,330,000$
(iii) $30,000 \times 3.7995 = \text{MYR}113,985$

Question 3

- Only a few candidates were able to answer the questions that required application of their knowledge.
- Candidates who did not show detailed calculations lost marks for they could have obtained marks from the steps in the calculations even if the final answer was wrong.

3. (a) (i) Spot = 7/10
(ii) Tom = 6/10
(iii) 2-month = 7/12
(iv) 1-month to 2-month option = 7/11 to 7/12
- (b) (i) An “either or” order whereby if one of the orders is executed, the other order is automatically cancelled. If the rates failed to reach both the order levels, the order will be returned to the bank first thing in the morning on the next trading day.
- (ii) Yes at 1.7045 (1.7050 is also acceptable)
- (iii) **1.7045** – $1.6995 = 0.0050 \times 10,000,000 = \text{SGD}50,000$
 $\text{SGD}50,000 \times 3.8000/1.7045 = \text{MYR}111,469.63/4$
(exceed limit by MYR11,469.63/4)
- or*
- 1.7050** – $1.6995 = 0.0055 \times 10,000,000 = \text{SGD}55,000$
 $\text{SGD}55,000 \times 3.8000/1.7050 = \text{MYR}122,580.64/5$
(exceed limit by MYR22,580.64/5)

- (c) (i) $3.8030 - 3.8005 = 0.0025 \times 1,000,000 = \text{MYR}2500.00$ (profit)
- (ii) $3.8005 + 40 = 3.8045$
- (d) (i) A FX Swap is a simultaneous spot FX (either buy or sell) transaction with a corresponding forward FX (either sell or buy) transaction
- (ii)
 - Swapping of surplus currencies into other currencies
 - Creation of deposits borrowing in another currency
 - Arbitrage
 - Enable FX dealers to ‘rollover’ their spot FX position
- (iii) $\text{Swap Points} = \frac{\# \times \text{spot rate} \times \text{days}}{36000}$
where # = interest differential
- 3-month swap points = $\frac{(3.75 - 1.75) \times 3.8000 \times 90}{36000} = 190$ points

Question 4

- Many candidates could not fully define what an NCD is nor describe its major characteristics. For the calculation part, although most of them had the correct formula, they substituted the variables with the wrong data and lost marks for deriving the wrong final answer.
- While most candidates were able to calculate acceptor’s commission for BA, many could not do the calculation for BA proceeds.
- Candidates should give precise answer to what was asked, instead of regurgitating what has been learnt. All calculations should show step-by-step workings and how the answers are derived.

4. (a) A short-term negotiable certificate of deposit is a NCD that has been issued with a maturity date of not earlier than 90 days and not later than 364 days from the date of issue.
- (b) The characteristics are as follows:
 - A NID has a nominal value denominated in multiples of RM50,000 from a minimum of RM50,000 up to a maximum of RM10 million per certificate.
 - A NID is negotiable.
 - A NID is issued as a bearer instrument.
 - Being a bearer instrument, a NID must be kept with an authorised depository at all times
 - A NID can be transferred by the delivery of the NID from the seller’s authorised depository to the buyer’s depository.
 - Payment of NID coupon on interest payment date and nominal value on maturity date is by presentation of the NID certificate by the authorised depository on behalf of the bearer to the issuer.
- (c) (i) The factors determining the coupon rate of the NCD will be:
 - Credit standing of Issuer
 - Tenor of NCD
 - Interest Rates prevailing in the market.
- (ii) Tenor of NCD, $t = 120$ days
Days to Maturity, $d = 120 - (30 + 16) = 74$ days
Coupon, $c = 3.2\%$ p.a.
Selling Rate, $y = 3.5\%$ p.a.
Nominal Value, $NV = \text{RM}1,000,000$
- NCD proceeds
 $= NV \times (36500 + (c \times t)) / (36500 + (y \times d))$
 $= 1,000,000 \times (36500 + (3.2 \times 120)) / (36500 + (3.5 \times 74))$
 $= \text{RM } 1,003,400.52/3$

- (d) (i) 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 commercial or merchant bank that is the drawee and acceptor of a BA.

- (ii) The bid rate is 2.70 %.

The bid rate is the rate of discount that the buyer is willing to buy or discount the BA, i.e. the higher the discount, the lower the proceeds paid to the seller. Buyers would like to buy at a higher discount while sellers will like to offer at a lower discount.

- (iii) Acceptor’s Commission Paid = $FV \times A \% \text{ p.a.} \times t/365$
Where FV = Face Value of BA
A = Acceptor’s Commission p.a.
T = Original Tenor of BA

Acceptor’s Commission Paid = $1,000,000 \times 0.25 \% \times 95/365$
= RM 650.68

- (iv) The factors to consider are:
- Credit Standing of acceptor
 - Credit Standing of drawer
 - Remaining Tenor of BA
 - Interest Rates prevailing in the market.

- (v) Stan Bank will buy BA at the offer rate at 2.60 %.

Discounting Rate, $r = 2.60 \% \text{ p.a.}$
Face Value, $FV = 1,000,000$
Days to Maturity, $d = 75 \text{ days}$

Purchase Proceeds = $FV (1 - (r \times d/36500))$
= $1,000,000 (1 - (2.6 \times 75/36500))$
= RM 994,657.53

Question 5

- Although the concepts in this question are often examined, most candidates performed poorly in all parts of the questions.
- They did not know which bank in the question gave better interest rates and also stated the wrong maturity dates for the transactions given.
- While some were able to do the deposit/loan pricing calculation questions, many gave the wrong answers for the questions on negative gapping position.

5. (a) 3.00 % flat for 4-months = $3 \times 12/4 = 9.00 \% \text{ p.a.}$

7.60 % flat for 10-months = $7.60 \times 12/10 = 9.12 \% \text{ p.a.}$

Deposit with Cutie Bank as it pays a higher deposit rate per annum.

- (b) Effective Loan Rate of Scruffy Bank
= $5.00 \% / (1 - 5.00 \%)$
= 5.26 % p.a.
Effective Loan Rate of Yukee Bank
= 5.25 % p.a.

Borrow from Yukee Bank as it lends at a lower effective rate per annum.

- (c) (i) The maturity value date for a 3-month money market borrowing transacted for value date 30 September 2003 would be 31 December 2003. Since 30 September is the last business day in the month of September, the transaction would be done on a month-end-to-month-end basis.
- (ii) The maturity value date for a 1-month USD money market placement transacted in Malaysia for value date 1 April 2003 would be 1 May 2003. The maturity value date for USD transactions is not affected since the United States is not on holiday and settlement can still take place in New York for USD transactions.
- (iii) The maturity value date for a 6 months money market borrowing transacted for value date 22 May 2003 would be 24 November 2003, the next business day since the normal maturity date 22 November 2003 falls on a Saturday, a non-business day.
- (d) (i) PQR Bank will quote = Bid Rate – 0.25 %
= 2.85 % – 0.25 %
= 2.60 % p.a.
- (ii) PQR Bank will quote = Offer Rate + Reserve Cost + 1.25 %
= 2.95 % + 0.15 % + 1.25 %
= 4.35 % p.a.
- (iii) Loan Repayment
= 10,000,000 + (10,000,000 x 4.35 % x 3/12)
= RM 10,000,000 + 108,750
= RM 10,108,750.00
- (e) (i) A “negative gapping position” is one where the Bank lends long and borrows short, i.e. the liabilities mature earlier than the assets.
- (ii) The Bank undertakes such a positioning if it expects interest rates to decline.
- (iii) A steep upward-sloping yield curve or positive yield curve would most favour such a position as rates on the longer tenor maturities are higher than the shorter tenor maturities under such a yield curve.
- (iv) The risks associated are:
- Interest Rate Risk, i.e. in this case the risk that interest rates may rise.
 - Liquidity Risk, i.e. the risk that the Bank may not be able to borrow to fund the longer term lending due to tight money conditions.

Question 6

- Candidates could not explain the types of treasury risks involved in the money market and foreign exchange activities, and some treasury products.
- While most of them were able to state the advantages and disadvantages of the 3 types of hedging, they could not provide the examples of companies that will adopt the different hedging philosophies.

6. (a) (i) Liquidity Risk – risk that one is unable to have easy access to funds in the market to meet its commercial and trading requirements.

Interest Rate Risk – risk that the profitability of the bank is adversely affected due to fluctuations in interest rate.

Operational risk – covers a whole range of risks – from poor management and back-office control to quality of personnel, support systems, etc.

- (ii) Control of Risk
 - Liquidity Risk – Reduce risk by having a right mixture of money market instruments, e.g. investing some of the funds in Treasury Bills.
 - Interest Rate Risk – Runs a matched book – e.g. back to back funding – match particular loans to particular deposits.
 - Operational Risks – built “china-wall” between treasury and settlement department.

- (b) (i) Three-month KLIBOR futures is the first Ringgit Interest Rate Futures Contract. The contract represents a Ringgit interbank time deposit in the Kuala Lumpur Wholesale Money Market having a principal value of Ringgit Malaysia one Million with a three-month maturity on a 360 day year. The underlying asset is the three-month Ringgit interbank money market deposits.

- (ii) Green BAs share the same features with conventional BAs. The difference between Green BAs and conventional BAs is that Green BAs do not deal with products that are not listed in the BNM guidelines on Bankers Acceptance. The Green BA originates from the “halal” trade transactions of conventional bank.

- (iii) A Forward Rate Agreement (FRA) is a contractual agreement between two parties to fix the rate of interest for a future period on a specified notional principal, such as a loan or deposits. An FRA is used to hedge an asset or liability. It is also a widely used instrument for investment, trading and arbitraging.

- (c) (i) **Hedge everything**
 Advantage – eliminate transaction exposure.
 Disadvantage – It gives rise to an opportunity cost – not able to profit from forex movements.

Hedge nothing
 Advantages – potential for large forex gains.
 Disadvantages – dangerous – exposed to large losses.

Hedge specifically
 Advantage – hedge those transactions where the anticipated risk of loss exceeds the opportunity for gain.
 Disadvantage – demands management time and expertise.

- (ii) **Hedge everything** – Heavy engineering companies where the transactions are large and the profit margins are small.
Hedge nothing – Small companies –lack of knowledge of hedging techniques.
Hedge specifically – Large multinational companies who have the expertise and system to use it effectively.