

DP07

# Treasury

12 OCTOBER 1999

1. Time allowed : Three (3) hours
2. Total number of questions : Six (6) questions on 6 pages
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**.

## ANSWER FIVE (5) QUESTIONS ONLY

1. (a) Explain the following terms in the context of foreign exchange dealings:
- (i) pips [1]
  - (ii) long [1]
  - (iii) spot [1]
  - (iv) forward [1]
- (b) “The current foreign exchange scenario is likened to the **Bretton Woods exchange rate system**. The Malaysian Ringgit is perceived to be undervalued at the pegged exchange rate of 3.8000 to the USD. The **appreciation or revaluation of the Malaysian Ringgit** is expected to happen soon. However, the Government has stated that it will be some time before it lifts the peg and adopts the **free floating exchange rates system** again.”
- Explain any **two** of the following terms described above:
- (i) Bretton Woods exchange rate system [3]
  - (ii) appreciation or revaluation of the Malaysian Ringgit [3]
  - (iii) free floating exchange rates system [3]
- (c) Describe the activities of the following participants in the foreign exchange and money market:
- (i) central banks [2]
  - (ii) individuals [2]
- (d) (i) What is Euro and why was the Euro introduced? [3]
- (ii) What is meant by “sterilised” and “non-sterilised” foreign exchange interventions? [3]
- (Total:20 marks)

2. The following rates are quoted:

	USD/MYR	EUR/USD	USD/SGD
Spot	3.7995/05	1.0400/10	1.6070/80
1-month	-5/+5	20-30	35-25
2-month	50/40	40-50	80-70
3-month	100/90	60-70	130-120
6-month	250/240	140-150	260-250

Calculate the following (show your workings):

- (a) Bank buys USD/MYR fixed 1-month. [2]
- (b) Bank sells EUR/USD value spot. [2]
- (c) Bank buys EUR/MYR 6-month fixed delivery. [3]
- (d) Bank sells EUR/MYR option spot to 1-month. [3]

- (e) Importer buys SGD/MYR fixed 6 months. [2]
- (f) Exporter sells USD/MYR option spot to 2 months. [3]
- (g) Importer buys SGD/MYR value option 2 months to 3 months. [3]
- (h) Which swap rate will the dealer hit if he intends to execute a 6-month buy/sell USD/MYR swap? [2]  
(Total:20 marks)
3. (a) Your bank's customer presents a bank draft issued by NAB Bank, Melbourne, Australia for AUD1,758.20. The customer would like to receive immediate payment in MYR and requests you to purchase the bank draft. The following are your bank's counter rates:

	<b>Selling</b>	<b>Buying</b>
MYR to 1 unit of Foreign Currency	TT/OD	TT
USD	3.8300	3.7700
AUD	2.4650	2.4210

- (i) Assuming you have agreed to purchase the bank draft based on the Australian interest rate of 8% and enroute period of 14 days, what OD buying rate would you quote to the customer? [2]
- (ii) What is the additional MYR the customer would receive if the transaction was made by inward telegraphic transfer instead of bank draft? (Assume no margin and no other bank charges are imposed.) [2]
- (b) Your customer has entered into a fixed foreign exchange contract for his export of USD100,000 at 3.7800 maturing on 19 September 1999. **Two** days before the due date, the buyer informed your customer that there has been a delay in the shipment and as such, the payment is now extended to 19 October 1999.

You are given the following information:

Spot (19 September 1999)	3.7995/05
1-month	-10 / +10
2-month	-20/0
3-month	-30/-10

(Use offer rate to calculate both (i) and (ii). Assume no margin on closing out and all exchange controls are complied with.)

- (i) How much profit/loss would the customer incur if the bank closed out the foreign exchange contract? [2]
- (ii) What would be the new fixed delivery forward contract rate for value 19 October 1999? [3]

- (c) Your cable dealer has executed the following speculative trades:

Transaction	Amount (GBP)	Currency	Rate
Sold	10million	GBP/USD	1.5635
Sold	5million	GBP/USD	1.5565
Purchased	8million	GBP/USD	1.5545
Purchased	2million	GBP/USD	1.5585

- (i) What is the foreign exchange position of the dealer and the average cost? [3]
- (ii) If the day-end spot GBP/USD revaluation rate is 1.5550 and the USD/MYR revaluation rate is 3.8000, what is the revaluation profit/loss of this position in MYR? [3]
- (d) (i) What are the main uses of FX swaps? [2]
- (ii) Assume that you have received a 6-month MYR deposit from a customer and at the same time, your bank makes a 6-month USD loan to another customer.

What are **two** options available to you to “cover” both the positions? [3]

(Total:20 marks)

4. (a) Inter-bank deposits in the Kuala Lumpur Money Market are traded in a **two**-way market.
- (i) Using an example of a **two**-way 3-months inter-bank deposit quotation, describe your understanding of the following terms:
- bid rate;
  - offer rate; and
  - spread. [3]
- (ii) In the inter-bank deposit market, some banks have established a reputation for being “good quoters” of rates based on the quality of their rate quotations.
- What are the qualities of a good quotation? [3]
- (iii) Given below is the comparison between the standard market quotation for a year’s deposit as against SILKY Bank’s quotation for a similar tenor deposit:

	Bid	Offer
Standard market quotation	9.0%	11.0%
SILKY Bank’s quotation	8.0%	10.0%

What can you comment about SILKY Bank’s transaction preference and SILKY Bank’s expectation of future interest rate trends? [2]

- (b) Movements and changes in the shape of yield curves are said to be primarily a function of the market expectations of future movements in interest rates.
- (i) What is a positive yield curve and what would be the underlying market expectation of such a curve? Illustrate your answer with a graphic presentation. [3]
- (ii) Under normal circumstances, yield curves for most currencies tend to be positive. Explain why this is so. [3]

- (c) (i) FAITH Bank accepts deposits for terms up to **seven** years and agrees to pay interest on maturity. How much interest would FAITH Bank pay on a deposit of RM300,000 for a term of **three** years and **65** days if the interest rate is 14.5% per annum using the simple interest rate calculation? [2]
- (ii) CUIE Bank pays 6.0% flat for **four** months on a deposit while SCRUFFY Bank pays 13.0% flat for **nine** months. In which bank, would you place your deposit? [2]
- (iii) What 6 months break-even all-in loan rate could HOPE Bank quote his customer given the following information?

6 months inter-bank deposits	4.5% - 4.80%
Reserve requirements (non-interest bearing)	20.0%
Customer spread	150 basis points

[2]  
(Total:20 marks)

5. (a) Bankers' Acceptances were first introduced in Malaysia in late 1979 with the objectives of increasing the sources and reducing the cost of trade financing for borrowers.
- (i) What is a Ringgit banker's acceptance (BA)? [2]
- (ii) What is the difference between a "pink BA" and a "green BA"? [1]
- (iii) Under what conditions, can a "green BA" be created? [1]
- (iv) The cost of raising trade financing through the use of a BA is said to be determined by **two** cost components i.e. the acceptor's commission and the rate of discounting.
- Explain what factors determine the acceptor's commission and the rate of discounting of a BA. [3]
- (v) SURETRADE Sdn Bhd, an exporter of Malaysian-made shoes was offered BA financing facilities from **two** banks to create BAs of 180 days as follows:

Bank	Acceptor's Commission	Discounting Rate (180 days)
LQP	1.25% p.a.	4.5% p.a.
NORSHAH	1.00% p.a.	4.7% p.a.

After considering the all-in rate, which of the **two** banks should SURETRADE Sdn Bhd draw its BA on? What would be the net proceeds received from this BA if the face value of the BA was RM3,500,000? [3]

- (b) **One** of the primary objectives of Bank Negara Malaysia (BNM) is to regulate the nation's supply of money and credit. This function requires BNM to ensure that in the long run, the increase in money and credit will be consonant with the growing needs of an expanding economy.
- (i) During the last **three** quarters of 1998, BNM had reduced the statutory reserve requirements (SRR) of financial institutions from 13.5% to 4.0%.

Explain what is SRR and what would be the impact of such a reduction in the SRR on money supply and the level of interest rates. [3]

(ii) Apart from SRR, name and explain **two** other tools of monetary regulation available to BNM aimed at affecting the availability of bank reserves to support bank credit. [3]

(c) Liquidity management has become a key focus of financial institutions amidst the background of the recent financial crisis. Liquidity management involves managing “liquidity risk” that includes funding liquidity risk and trading liquidity risk.

Explain what is “liquidity risk”. Your answer should include a clear explanation of the difference between funding liquidity risk and trading liquidity risk. [4]

(Total:20 marks)

6. (a) Explain briefly the following ECM Notices:

(i) ECM 2 [1]

(ii) ECM 4 [1]

(b) Explain any **three** of the following terms in the context of interest rate swaps and options:

(i) Plain vanilla swap [2]

(ii) American and European options [2]

(iii) Collars [2]

(iv) Strike Price [2]

(c) A small local bank wants to transact a large 100million AUD/MYR 12-months forward foreign exchange transaction with a non-resident offshore customer.

Advise the bank on the foreign exchange risks and exchange control requirements (if any) associated with doing this transaction with the customer. [6]

(d) Explain with an example, on any **two** of the following internal hedging techniques employed by corporations:

(i) Matching asset and liability exposures [3]

(ii) Switching currency base [3]

(iii) Decentralising invoicing [3]

(iv) Leading and lagging [3]

(Total:20 marks)

## OUTLINE ANSWERS

### Question 1

**Almost all the candidates attempted this rather easy question, which saw most of the candidates scoring above average marks. Although candidates fared poorly in explaining the meaning of “spot” and differentiating “sterilised” and “non-sterilised” interventions, they performed well in explaining the Bretton Woods exchange rate system, currency appreciation or revaluation and free floating exchange rates system.**

- (a) (i) **Pips**  
The smallest unit by which a price can move.
- (ii) **Long**  
Long or Overbought Position is the excess of assets over liabilities in a foreign currency.
- (iii) **Spot**  
A spot transaction is dealt for settlement on the second working day following the dealing date (with the exception of a few currencies).
- (iv) **Forward**  
Refers to swaps where the later value date is any day after the spot date. Also refers to outright deals for settlement on any day after the spot date.
- (b) (i) **Bretton Woods exchange system**  
Prior to 1973, the foreign exchange market was under the Bretton Woods exchange rate system whereby exchange rates for the major trading currencies were pegged to the US Dollar. This is a fixed-exchange rate system.
- (ii) **Appreciation or revaluation of the Malaysian Ringgit**  
Appreciation means a rise in the value of the Malaysian Ringgit in relation to the market or another currency. This happens in response to changes in supply or demand or to official revaluation, which is dictated by the Central Bank or monetary authorities.
- (iii) **Free floating exchange rates system**  
Under this system, currencies would be free to fluctuate against one another, whereby the price between currencies would be determined by the forces of supply and demand or according to economic fundamentals.
- (c) (i) **Central Banks**
- manage reserves and exchange controls
  - intervene to support currencies or reduce excessive market volatilities
  - transmission of Monetary Policies
  - development of Well-Organised Financial Markets.
- (ii) **Individuals**
- buy/sell currencies for travelling/education, etc.
  - invest in treasury products (both foreign exchange/money market products)
- (d) (i) Euro is a new single currency adopted by 11 European Union Countries on January 1, 1999. These 11 countries have permanently fixed the exchange rates of their national currencies against the euro and are now trading in the new currency.

The Euro is adopted by the European Monetary Union to strengthen the position of Europe as an economic power. The union will produce 20% of world exports and the European Central Bank will have 4 times the reserves of the U.S Federal Reserve.

From a business perspective, the introduction of the euro will bring lower transaction costs, as companies in member countries will no longer have to exchange currencies when doing business with each other.

- (ii) Sterilised intervention results in no change in money supply of both the home and foreign currencies. This is affected by the adoption of necessary monetary policies to neutralise the increase or decrease in money supply resulting from the currency intervention. Non-sterilised intervention does not involve the adoption of necessary monetary policies to neutralise the change in money supply.

## Question 2

**All the candidates attempted this popular practical foreign exchange question. Overall, candidates either did very well or very poorly in this question. Most candidates, however, did not have an in-depth understanding of swaps.**

- (a) USD/MYR fixed 2 month =  $(3.7995 - 5) = 3.7990$
- (b) EUR/USD value spot = 1.0410
- (c) EUR/MYR 6 month fixed delivery =  $(3.7995 - 250) \times (1.0400 + 140)$   
= 3.9783
- (d) EUR/MYR Spot rate =  $3.8005 \times 1.0410 = 3.9563$   
EUR/MYR 1 month rate =  $(3.8005 + 5) \times (1.0410 + 30) = 3.9682$   
Option rate = 1 month rate = 3.9682
- (e) SGD/MYR =  $3.8005 - 240 / 1.6070 - 260 = 2.3886 / 2.3887$   
= 238.86 / 238.87 (in 100 units)
- (f) USD/MYR spot = 3.7995  
USD/MYR 2 month fixed =  $3.7995 - 50 = 3.7945$   
Option rate = 2 month rate = 3.7945
- (g) SGD/MYR value 2 month =  $(3.8005 - 40) / (1.6070 - 80) = 2.3743$   
SGD/MYR value 3 month =  $(3.8005 - 90) / (1.6070 - 130) = 2.3786$   
Option rate = 2.3786
- (h) Buy/Sell USD/MYR at -250

## Question 3

**Most candidates attempted this question which required an in-depth knowledge of practical foreign exchange. However, most of the candidates attempted this question incompetently.**

(a) (i) Swap points =  $\frac{2.4210 \times 8 \times 14}{365 \times 100} = 74$  points

O.D. Buying Rate =  $2.4210 - 74 = 2.4136$

(ii) The difference =  $.0074 \times 1,758.20 = \text{MYR}13.01$

- (b) (i) The contract is closed out as follows:

Original contract rate	3.7800
Current Offer Rate	3.8005
Loss to the customer	0.0205
Amount	$= 0.0205 \times \text{USD}100,000 = \text{MYR}2050$

- (ii) The new contract rate would be

Offer Rate	3.8005
1 mth swap	-10
New Contract Rate	$= 3.7995$

- (c)

GBP		USD
-10,000,000	$+10,000,000 \times 1.5635$	+15,635,000
-5,000,000	$+5,000,000 \times 1.5565$	+7,782,500
+8,000,000	$-8,000,000 \times 1.5545$	-12,436,000
<u>+2,000,000</u>	$-2,000,000 \times 1.5585$	<u>-3,117,000</u>
<u>-5,000,000</u>		<u>+7,864,500</u>

Position = Short GBP5,000,000

Average Cost  $= 7,864,500/5,000,000 = 1.5729$

- (ii) Revaluation Profit is  $(1.5729 - 1.5550) \times \text{GBP}5,000,000 = \text{USD } 89,500$

In terms of MYR  $= 89,500 \times 3.8000 = 340,100$

- (d) (i) Main Uses are:

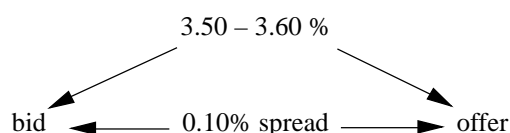
- Swapping of surplus currencies
- Creation of deposits borrowings in another currency
- Indirectly raised funds for illiquid currencies
- Arbitrage opportunity

- (ii) [1] Lend out the MYR at the prevailing market bid rate.  
Borrow the USD at the prevailing market offer rate.
- [2] By entering into a 3 month BUY/SELL USD swap – indirectly borrowing 3 month USD deposits and at the same time lending 3 month MYR deposits.

#### Question 4

**Concepts on two-way interbank deposits and yield curves were not very well understood. Many candidates could not distinguish between two-way deposit rate and two-way foreign exchange rate and between positive yield curve and a yield curve. Candidates in general also fared poorly in questions on application of concepts and on financial mathematics. There was evidence of “rote learning” in the answers given, suggesting a ritual or habitual learning.**

- (a) (i) Example of a two-way 3 months inter-bank deposit:



Bid rate is the rate at which the quoting bank is willing to accept or borrow funds, i.e. 3.50 % p.a. in the example above.

Offer rate is the rate at which the quoting bank is willing to place or lend funds, i.e. 3.60 % p.a. in the example above.

The spread represents the difference between the bid and offer rates, i.e. 0.10 % in the example above and would be the quoting bank's profit if the two parts of the transaction (borrowing and placement) take place at these rates.

(ii) The qualities of a good quotation are as follows:

- Fast response to the request for the quotation.
- A narrow spread between bid and offer rates.
- Willingness to deal a "reasonable amount" at the rates quoted where the reasonable amount would be dependent on the marketability of the product quoted.

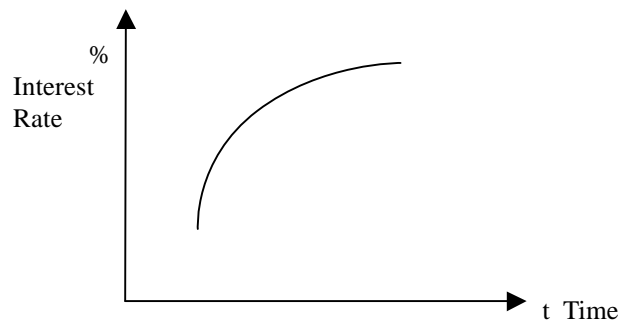
(iii) SILKY Bank is trading its bid and offer rates lower than the standard market quotation. This implies that SILKY Bank is positioning to be "taken" on its one-year deposit rate, i.e. the bank is willing to quote a lower offer rate than the standard market quotation in order to entice market participants to borrow from the bank.

Based on SILKY Bank's quotation, SILKY Bank is expecting interest rates to move lower in the future.

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

The underlying market expectation of such a curve is that market expects interest rates to move higher in the future. This is because if borrowers and lenders expect higher interest rates, borrowers would be borrowing 'long', i.e. exerting an upward pressure on interest rates in the longer end while lenders would be lending 'short', i.e. causing interest rates in the shorter end to stay low.

Graphic presentation



(ii) The yield curve under normal circumstances tends to be positive because the market demands that a premium be paid for lending for longer maturities in contrast to shorter ones. There are four major reasons for this premium to exist:

- Credit risk. The longer the maturity of a loan, the higher the uncertainty as to the ability of the borrower to repay the debt.
- Liquidity risk. It is generally easier to liquidate shorter maturity paper than longer maturity paper at the going market rates, hence the higher liquidity risk for longer maturities.
- The effect of interest compounding available in shorter maturities must be incorporated in the rate for longer maturities.
- The expectations of a general increase in inflation plus other future uncertainties would mean an additional premium demanded by would-be lenders of longer maturities.

- (c) (i) Deposit Amount = RM300,000  
 Period of placement = 3 years 65 days  
 Rate = 14.5 % p.a.

Interest to be paid by FAITH Bank would be

$$= \frac{300,000 \times [(365 \times 3) + 65] \times 14.5}{36,500}$$

$$= \text{RM}138,246.58$$

- (ii) CUI TE Bank pays 6.0 % flat for 4 months  
 =  $\frac{6}{4} \times 12$   
 = 18.0 % p.a.

SCRUFFY Bank pays 13.0 % flat for 9 months  
 =  $\frac{13}{9} \times 12$   
 = 17.33 % p.a.

Placement should be made with CUI TE Bank as it pays 18.0 % p.a. as compared with 17.33 % p.a. by SCRUFFY Bank.

- (iii) Break-even loan rate =  $\frac{\text{Nominal Interest Rate} - \text{Returns on Reserves}}{(1 - \text{Reserve Ratio})}$
- $$= \frac{4.80\% - 0}{1 - 0.20}$$
- $$= 6.0 \%$$

$$\begin{aligned} \text{Break-even all-in loan rate} &= \text{Break-even loan rate} + \text{Customer spread} \\ &= 6.0 \% + 1.50 \% \\ &= 7.50 \% \end{aligned}$$

## Question 5

**Concepts of Bankers' Acceptances, Tools of Monetary Regulation and Liquidity Management were not well understood. Only a few candidates managed to pass this question. Some candidates did fairly well on the calculations of BA proceeds, but lost marks when they were unsure of what influences BA rates and the acceptors commission. Most candidates knew about SRR but could not articulate its impact on liquidity and interest rate well. Only 1 candidate was able to distinguish funding liquidity from trading liquidity.**

- (a) (i) A ringgit banker's acceptance (BA) is defined as a usance bill of exchange denominated in Ringgit drawn on and accepted by a commercial or merchant bank in Malaysia and is payable on a specified future date without days of grace. It is negotiable and is created as a means of providing finance to the drawer of the BA for a bona fide trade transaction (such as export, import or domestic trade).
- (ii) "Pink BAs" are drawn to finance purchases and credit sales of listed goods while "green BAs" are drawn to finance credit sales of non-listed goods. This differentiation would also permit the "green BA" to be integrated with the Islamic Acceptance Bills market.
- (iii) A "green BA" can only be created to finance credit sales of non-listed goods.

- (iv) The acceptor's commission is dependent on the credit standing of the customer. The rate of discounting however is dependent on a combination of the following factors:
- The state of liquidity in the money market, the tighter the market the higher the rate.
  - The tenor of the BA, the longer the BA the higher the rate in general.
  - The size of the BA. BAs below certain threshold amounts generally cost more to create due to marketability reasons.
  - The credit standing of the accepting bank as this will affect its cost of accessing the money market for pricing the BA.

- (v) All-in rate for LQP Bank = 1.25 % + 4.50 %  
= 5.75 % p.a.

All-in rate for NORSHAH Bank = 1.00 % + 4.70 %  
= 5.70 % p.a.

BA to be drawn on NORSHAH Bank as it offers a lower all-in rate.

Net Proceeds of BA = 3,500,000 [1 – (5.70% x 180/365)]  
= RM 3,401,616.44

- (b) (i) Statutory reserve requirements (SRR) represent a prescribed reserve of uninvested funds to be held by financial institutions with the Central Bank. The SRR is expressed as a designated proportion of a financial institution's total eligible liabilities. Presently, the SRR held with Bank Negara Malaysia is zero interest bearing.

A reduction in the SRR would raise the level of deposits and loans that a given supply of bank reserves could support, i.e. an expansionary move. This, therefore increases the money supply and as a consequence lowers the level of interest rates.

- (ii) The other tools of monetary regulation aimed at affecting the availability of bank reserves to support bank credit are as follows:

#### **Minimum Liquidity Requirements (MLR)**

Unlike SRR, MLR are immobilised in the banks and they do yield a return.

#### **Discount Operations**

This works through the deliberate measures undertaken by the Central Bank aimed at varying the terms and conditions which financial institutions may have temporary access to Central Bank credit facilities through the rediscounting of short-term assets and secured advances.

#### **Open Market Operations**

This involves the direct intervention of the Central Bank in the open market through the purchase and sale of Government securities, direct placement of deposits or deposit takings or through swap transactions with the intention of affecting directly the reserves of banks and thereby, the flow of credit and money.

- (c) Liquidity risk in a financial institution involves funding liquidity risk and trading liquidity risk.

Funding liquidity risk is defined as the risk that a financial institution would not have funds available to meet its financial commitments when they are contractually due. This could arise from both deposit withdrawals or loans drawdown commitments.

Trading liquidity risk is defined as the risk that assets cannot be liquidated quickly enough. This can arise when the depth or liquidity of a market disappears making it difficult or costly to close or modify positions.

## Question 6

**The least attempted question was on various topics such as ECM notices, interest rate swaps and options, foreign exchange risks and exchange control requirements and internal hedging techniques. Those who attempted this question performed poorly. Generally, candidates were only able to provide good answers to the question on forex risks and exchange controls.**

- (a) (i) ECM 2 – Dealings in gold and foreign currency.
- (ii) ECM 4 – General Payments.
- (b) (i) Plain Vanilla Interest Swaps are OTC contracts between two counterparties for exchanging interest payments for a specified period based on a notional principal amount. The notional amount is used to calculate interest payments, but is not exchanged, only interest payments are exchanged.
- (ii) An American Option is an option exercisable at any time up to expiration. A European option can only be exercised at maturity.
- (iii) Collar is a combination of a cap and a floor to create the desired band within which the buyer of the collar wants his interest rate cost to be held.
- (iv) Strike price is the agreed price at which an option may be exercised.
- (c) **Foreign Exchange Risks**
  - (i) Trading exposure risk.
  - (ii) Settlement risk.
  - (iii) Country Risk.
  - (iv) Liquidity Risk.

### Exchange Controls

ECM2, ECM4, ECM5 (if for exports)

- (d) (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 Malaysian company sells crude oil both spot and forward and hence has receivables in US dollars. The company is “long USD against MYR” and is exposed to transaction risk exposure until hedged. The company can reduce this risk by borrowing in US dollars when the need arises. Hence, by borrowing in US dollars, the company’s interest and principal USD payables are naturally offset by its USD receipts thereby reducing its “long USD/MYR” exposures.

If the company instead borrows in another currency, for example, Japanese Yen, the company unnecessarily increases its transaction exposure risks – it receives USD and is long USD against MYR and it pays Japanese Yen and is short JPY against MYR.

- (ii) Switching Currency Base

In this instance, the company attempts to switch its base of manufacturing so that costs are also incurred in the same currencies as its revenues. For example, the company tries to source its materials from Germany knowing that it has Deutsche marks receivables.

(iii) Decentralising Invoice

Under such a scheme, risk management is decentralised whereby each subsidiary is given some degree of autonomy. In this instance, each accounting unit hedges unilaterally before going to the head office to hedge their residual exposures.

(iv) 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 certain of the company's cash flow profile or to take advantage of potential currency depreciation or appreciation.

**Example:** In the case of receivables, the company will try to accelerate collection of the weaker currencies so that it can sell off earlier before they weaken further. For its payable, it will try to delay payment in currencies that are expected to weaken.

On the other hand, the company should try to accelerate payments involving currencies that are expected to strengthen. However, one should note that this is not consistent with basic cash flow management whereby one normally tries to delay payments and accelerate receivables.