DP07

Treasury

10 OCTOBER 2000

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**.	

ANSWER FIVE (5) QUESTIONS ONLY

1. (a) Explain the following terms in the context of foreign exchange dealings:

(i) Choice Price [1]

(ii) **One** dollar and **One** Lakh [1]

(iii) Yours and Mine [1]

(iv) Square [1]

(b) "The money market was rather active with Bank Negara Malaysia (BNM)'s tenders last week as the focus of attention. Dealers took their cue from the direction adopted by BNM. BNM continued to absorb liquidity from the market.

In the currency market, the Ringgit ended the week mixed as dealers await Friday's US payroll data. Below are the opening and closing rates for some currencies."

Currency	Opening	Closing
GBP/USD	1.5035	1.4940
EUR/USD	0.9244	0.9050
USD/JPY	109.70	108.40
SGD/MYR	2.1915	2.2095
JPY/MYR	3.4640	3.5055

From the above report, answer the following questions:

(i) State **two** ways how BNM can absorb liquidity from the market. [2]

(ii) What would be your view on the direction of the local interest rates should BNM continue to absorb liquidity from the market? [2]

(iii) Describe how the Malaysian Ringgit (MYR) ended the week against the SGD and JPY. [2]

(iv) Explain whether the USD currency was stronger or weaker against the GBP, EUR and JPY at the close of the week. [2]

(c) "Every emerging market crisis of the 1980s and 1990s was associated with major swings of exchange rates of major industrial countries."

"… the present advice to developing countries seems to be to either fix or freely float their currency, and not to support it through an intermediate regime."

(*The Star, August 8, 2000)*

(i) Describe how developing countries fix their currencies. [2]

(ii) State **two** advantages of a fixed exchange rate regime over a floating exchange rate regime. [2]

(d) (i) State **two** roles of the Bank of International Settlement as a participant in the currency and money market. [2]

(ii) Explain the differences between a "jobber" and a "structural trader" in relation to interbank foreign exchange dealings. [2]

(Total:20 marks)

2. The following rates are quoted:

	USD/MYR	EUR/USD	USD/CHF
Spot	3.7995/05	0.9365/71	1.6590/00
1-month	131-118	15-25	72-62
2-month	245-229	30-40	114-104
3-month	360-343	45-55	158-148
6-month	715-690	90-100	283-273

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

(a) Bank buys USD/CHF value spot. [2]

(b) Bank sells EUR/MYR 2-month fixed delivery. [3]

(c) Bank sells CHF/MYR option spot to 1-month. [3]

(d) Importer buys USD/MYR option 2-month to 3-month. [3]

(e) Exporter sells EUR/MYR option 1-month to 3-month. [3]

(f) Based on the following parameters, compute your bank's foreign exchange currency counter rates:

- The following rates are quoted as:

	USD/MYR	EUR/USD	USD/CHF
Spot	3.7995/05	0.9365/71	1.6590/00

- Mid-rates are to be used for all calculations.
- Margin spreads are to be calculated for selling and TT buying rates as follows:

Currency	Margin Spread
USD/MYR	+/– 250 points from spot rate
EUR/MYR	+/– 275 points from spot rate
CHF/MYR	+/– 200 points from spot rate

- OD buying rates are determined by deducting the interest cost (in terms of swap points) from the respective currency TT buying rate. The interest rates and period for determining the interest cost are as follows:

Currency	Interest Rate	Period(days)
USD	5%	14
EUR	7%	18
CHF	4%	10

Required:

Based on the above information, calculate your bank's foreign exchange counter selling, TT buying and OD buying rates for the following currencies:

(i) US dollar (USD) [3]

(ii) Euro (EUR) [3]

(Total:20 marks)

3. (a) Your customer has entered into a fixed foreign exchange contract for his exports of USD100,000 at 3.7800 maturing on 12 December 2000. His buyer has decided to pay him **two** months earlier and the inward telegraphic transfer payment has been confirmed on 12 October 2000, i.e. **two** working days from today (10 October 2000).

The following information is given:

Spot USD/MYR (value 12 October 2000)	3.7995/05
1-month	120-110
2-month	230-220
3-month	340-330

(i) Calculate the adjusted contracted exchange rate (after adjustments for swap points) which you will apply for your customer's inward telegraphic transfer on spot date. (Assume no margins on swap adjustments and all exchange controls are complied with and no other bank charges or costs are imposed.) [2]

(ii) What would be the adjustments to the contracted exchange rate (if any) if your customer entered into an option delivery contract earlier, between 12 November 2000 to 12 December 2000 at the same exchange rate of 3.7800? (Assume no margins on swap adjustments and all exchange controls are complied with and no other bank charges or costs are imposed.) [2]

(b) Your overseas correspondent bank left the following order with your SGD interbank dealer:

"Good day friends. Here is a spot USD/SGD order. Buy **three** mio USD/SGD at 1.6345. If done, stop loss at 1.6300 and take profit at 1.6400, one cancels the other. Order good until cancelled. Usual advice. Thanks."

At the point of the request, the market was dealing at 1.6355/60. During the next **12** hours, the market moved between the ranges of 1.6280 to 1.6380.

Was/Were the order(s) executed? If executed, which order(s) was/were done? Explain. [3]

(c) Your interbank Yen dealer has been assigned the following dealing limits:

Monthly loss limit	MYR50,000
Daily loss limit	MYR10,000
Trading limit per transaction	USD5,000,000
Trading limit – Maximum open position	USD10,000,000

The following are the interbank Yen dealer's trades and positions transacted today for value spot:

Transaction	**Amount**	**Currency**	**Rate**
Sold	USD3,000,000	USD/JPY	100.00
Purchased	USD1,000,000	USD/JPY	98.90
Sold	USD5,000,000	USD/JPY	98.50
Purchased	USD2,000,000	USD/JPY	100.80

(USD/MYR rate is fixed at 3.8000)

(i) What is the foreign exchange position of the interbank Yen dealer in USD? [2]

(ii) If the interbank Yen dealer is required to close out his position at 98.60, what would be his profit or loss in MYR? [4]

(iii) Is the interbank Yen dealer complying with the above dealing limits? If not, how much has he exceeded? [3]

(d) You request a 6-month USD/SGD swap from a bank, for which it quotes:
"170-180"

If you intend to do a sell/buy USD/SGD, which swap rate will you hit? [1]

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

(Total:20 marks)

4. (a) Money market traders often argue that it is difficult to "make money" under the conditions of a "flat yield curve".

(i) What is a flat yield curve? Illustrate your answer with a graphic presentation. [2]

(ii) What does a flat yield curve tell you about the expectations of the market? [2]

(iii) What would be the immediate "profit dynamics" of gapping under a flat yield curve and what time horizon should one be looking at when undertaking gapping under such conditions? [2]

(b) In June 1993, Bank Negara Malaysia introduced the revised guidelines on negotiable instruments of deposits (NIDs), named "Guidelines on Negotiable Instruments of Deposits (1993)".

(i) Explain what are NIDs and state its special features. [3]

(ii) Name the **four** types of NIDs that are issued in Malaysia. [2]

(iii) What are the major differences between NIDs and fixed deposits? [2]

(c) Stan Bank bought RM50million of Shah Bank's NIDs on 30 June 2000 to mature on 30 October 2000.

(i) What risks would Stan Bank have to consider before purchasing Shah Bank's NIDs? [3]

(ii) What would be the maturity proceeds if the coupon paid was 3.5% per annum? [2]

(iii) On 8 September 2000, Stan Bank sensed that interest rates were moving upwards and therefore, decided to sell RM25million of Shah Bank's NIDs to LQP Bank.

Calculate the settlement proceeds that Stan Bank will receive if the transacted rate was 3.75% per annum. [2]

(Total:20 marks)

5. (a) The year 2000 thus far has seen easy money conditions with low inflation in Malaysia. If robust growth continues and inflationary pressures are felt, Bank Negara Malaysia (BNM) is likely to tighten monetary conditions.

Describe the tools available to BNM to carry out this task. [4]

(b) A deposit of RM500,000 has been accepted for a period of **185** days at a rate of 15% per annum. Interest is calculated on a **360**-day basis.

(i) Calculate the maturity value of the deposit. [2]

(ii) Determine the **365**-day equivalent rate of interest. [2]

(c) Find the value of a RM1,000,000-deposit earning 10% per annum compounded in **three** years. [2]

(d) Phil Bank purchased RM5,000,000 of Malaysian Government Treasury Bills (MGTBs) at 7.0% per annum simple discount that will mature in **90** days' time.

(i) Calculate the settlement proceeds on the purchase. [2]

(ii) What is the equivalent simple interest rate for this transaction? Provide your answer to **three** decimal places. [2]

(iii) If Phil Bank decides to sell RM3,000,000 of the MGTBs into the secondary market **30** days later, at what simple discount rate can Phil Bank sell the MGTBs if the rate scenario is as follows:

Item	Quotes
Band 2 MGTBs	7.00% - 6.95% per annum
Band 3 MGTBs	7.10% - 7.05% per annum
Band 4 MGTBs	7.20% - 7.15% per annum

[2]

(iv) Calculate the settlement proceeds that Phil Bank will receive in (iii) above. [2]

(v) What is the rate of return of the transaction in (iii) above? [2]

(Total:20 marks)

6. (a) Explain the risks involved and exchange control regulations (if any) associated with the following transactions or situations:

(i) An overseas company operating in Malaysia approaches a local individual investor residing in Malaysia to speculate in foreign currency trading. [2]

(ii) A Malaysian company is aware that the 6-month forward rate for USD/MYR is at a discount. As such, it wishes to enter into a forward contract with your bank to cover its potential imports, with a view of cancelling the forward contracts at a later date if the deals do not materialise. [2]

(iii) A newly established Malaysian trading company wishes to import goods from China and re-export the goods to Indonesia. Due to the current financial crisis in Indonesia, the Malaysian trading company is likely to only receive its Indonesian Rupiah (IDR) payments in 9 to 12 months time and, therefore, would like to hedge this proceeds now with your bank. [2]

(iv) Due to inexperience, the Treasury Processing Officer mistakenly instructs your correspondent bank in New York to pay Bank XYZ instead of Bank ABC the wrong amount and for an earlier value date. [2]

(b) Write short notes on any **two** of the following derivative instruments:

(i) KLIBOR futures [3]

(ii) Forward rate agreements [3]

(iii) Green BA [3]

(iv) Currency options [3]

(c) Compare and contrast any **two** of the following risks and/or risk management strategies:

(i) Counterparty risk and Country risk [3]

(ii) Pre-settlement risk and Settlement risk [3]

(iii) Centralising invoicing and Decentralising invoicing [3]

(iv) Switching currency base and Assets and liability adjustments [3]

(Total:20 marks)

OUTLINE ANSWERS

Question 1

Candidates did poorly in part (a) and (d), which required explanation on various foreign-exchange dealings terms. Most candidates could not explain basic terms used in foreign exchange dealings, such as, choice price, yours and mine, square, jobber and structural trader. Candidates, however, managed to perform better in part (b) and (d), where they were tested on understanding the foreign exchange and money market reports and exchange rate regime.

1. (a) (i) Bid and Offer Prices are the same. Either Way Price

(ii) One million USD and 100,000 units of the currency concerned

(iii) Selling and Buying

(iv) A zero open position.

(b) (i)
- Open market operations
- Direct borrowing
- Discount operation

(ii) Interest rates should move higher.

(iii) Weaker both against the SGD and JPY.

(iv) Stronger against the GBP and EUR but weaker against the JPY.

(c) (i)
- Currency Board
- Pegged
- Dollarisation

(ii)
- Eliminate volatility and uncertainty
- Eliminate speculation, thus shielding the economy from speculators.

(d) (i) Roles of Bank of International Settlement:
- Act as central banker's bank.
- Agent or trustee to various international financial arrangements.
- Forum for international monetary cooperation.

(ii) Jobber – short-term traders who move in and out of the market to reap a small profit.

Structural trader – those who take long term or 'structural' position.

Question 2

Many candidates attempted this popular two-part foreign-exchange question, with many obtaining a pass for this question. Candidates were required to calculate basic foreign-exchange transactions in the first part. As in previous sittings, candidates answered this part well and obtained good marks. However, some candidates were unable to secure full marks when they failed to either state their answers clearly or show the full calculations. The second part, however, was particularly poor, as most candidates were unable to compute counter rates which banks publish daily.

2. (a) USD/CHF value spot = 1.6590

(b) EUR/MYR 2-month fixed delivery = (3.8005 - 229) x (.9371 + 40)
= 3.5551/3.5550

(c) CHF/MYR spot rate = 3.8005 / 1.6590 = 2.2908

CHF/MYR 1-month rate = (3.8005 - 118) x (1.6590 - 72) = 2.2937/2.2936

Option rate = 1-month rate = 2.2937/2.2936

(d) USD/MYR value 2-month = (3.8005 - 229) = 3.7776

USD/MYR value 3-month = (3.8005 - 343) = 3.7662

Option rate = 3-month rate = 3.7776

(e) EUR/MYR value 1-month = (3.7995 - 131) x (0.9365 + 15) = 3.5516

EUR/MYR value 3-month = (3.7995 - 360) x (0.9365 + 45) = 3.5414/3.5415

Option rate = 3-month rate = 3.5414/3.5415

(f)

	Currency	**Mid-Rate**	**Cross Rate**	**Selling**	**TT Buying**	**OD Buying**	
(i)	USD	3.8000		3.8250	3.7750	3.7676/77	W1
(ii)	EUR	3.9368	3.5598	3.5873	3.5323	3.5200/01	W2

W1 = (3.8000 x 5 x 14) / 360000 = 74/73 points
3.7750 – 74/73 = 3.7676/3.7677
W2 = (3.5598 x 7 x 18) / 365000 = 123/122 points
3.5323 – 123/122 = 3.5200/3.5201

Question 3

Only a few candidates passed this four-part question, which tested candidates' knowledge on adjustments to contract, execution of foreign exchange orders, compliance with limits and swaps. Most of the candidates were unable to provide the correct answer to the adjustments to contract. Instead of calculating the adjustments to the exchange rates, most candidates computed the profit and loss of the transaction – which was not required.

3. (a) (i)

Original contracted rate	=	3.7800
Less: Adjustment for swaps		220
Adjusted contracted rate	=	3.7580

(ii)

Original contracted rate	=	3.7800
Less: Adjustment for swaps		110
Adjusted contracted rate	=	3.7690

(b) Yes. Bought 3 mio USD/SGD at 1.6345 and Stop Loss at 1.6300.

(c) (i) Short USD5,000,000

(ii)

USD		JPY
-3,000,000	-3,000,000 x 100.00	-300,000,000
+1,000,000	+1,000,000 x 98.90	+98,900,000
-5,000,000	-5,000,000 x 98.50	-492,500,000
+2,000,000	+2,000,000 x 100.80	+201,600,000
-5,000,000		-492,000,000

Average Cost = 492,000,000 / 5,000,000 = 98.40

Close-out rate = 98.60

Loss = 5,000,000 x .20 = JPY1,000,000

Loss in MYR = 1,000,000 x 3.8000/98.60 = MYR38,539.55

(iii) Exceeded his daily limit by MYR38,539.55 – 10,000 = MYR28,539.55

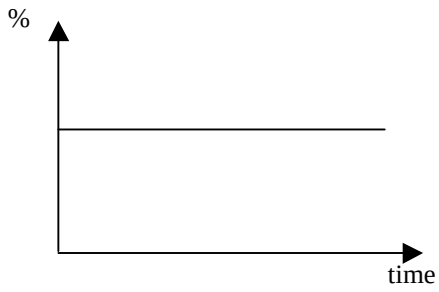
(d) 180

(e)
- Reduction of credit risks
- Minimal impact on bank's balance sheet
- Possible tax advantage.

Question 4

Only a small number of candidates who attempted this money market question secured a pass. This two-part question covered two major areas, yield curve and negotiable instruments of deposits (NIDS). On yield curves, most candidates were able to illustrate a flat yield curve. However, almost all could not explain the expectations of the market of such a curve and the dynamics of the profit and loss while gapping under such conditions. No candidate could explain the features of NIDs and the major differences between NIDs and fixed deposits well. Overall, candidates have a tendency to not answer the questions directly but to "regurgitate" what has been learned on each subject area.

4. (a) (i) A flat yield curve is one where the interest rate level is the same across maturities.



(ii) A currency with a flat yield curve indicates that the market is currently in a consolidating phase and is not sure where rates are heading. Often, participants are waiting for more economic data and financial data before they decide whether interest rates are going to move up or down.

(iii) From a gapping perspective, there is little or no immediate profit to be made either from being positively or negatively gapped under a flat yield curve scenario. One would need to take a longer view of where interest rates are heading and often patience is required.

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

(ii) The four types of NIDs issued in Malaysia are:
- Short-term Negotiable Certificate of Deposit (SNCD)
- Long-term Negotiable Certificate of Deposit (LNCD)
- Zero-coupon Negotiable Certificate of Deposit (ZNCD)

- Floating rate Negotiable Certificate of Deposit (FRNCD)

(iii) The major differences between an NID and a Fixed Deposit (FD) are as follows:
- The NID is a bearer instrument to help simplify the transfer of ownership while the FD is not.
- NIDs are negotiable i.e. the owner or holder may sell title to the deposit to another investor prior to maturity date while FDs are not.
- Unlike the premature upliftment of FDs, the sale of an NID before maturity does not necessary incur a reduction in the original rate of return. On the contrary, it could even improve the yield over the shorter period of the actual holding since rates of interest tend to be lower for shorter periods and higher for longer periods in the normal case.

(c) (i) The risks that Stan Bank will need to consider are as follows:
- Counter-party/Credit Risk: The risk that Shah Bank will not be able to repay the NIDs issued on maturity date.
- Price/Interest Rate Risk: The risk that a rise in the level of interest rates will affect the price of the NIDs purchased and hence Stan Bank's trading/net interest income.
- Funding/Trading Liquidity Risk: The risk that Stan Bank will not be able to raise funds to fund the purchase of the NIDs or that Stan Bank will not be able to sell the NIDs without incurring a large capital loss should a need for liquidity arise.

(ii) Original Tenor = 122 days

Maturity Proceeds = RM50,000,000 [1 + (3.5*122/36500)]
= <u>RM50,584,931.51</u>

(iii) Remaining Tenor = 52 days

$$\text{Settlement Proceeds} = P \times \frac{36{,}500 + (Coupon \times Original\ Tenor)}{36{,}500 + (Yield \times \text{Remaining } Tenor)}$$

where P = Nominal Value

$$= 25{,}000{,}000 \times \frac{36{,}500 + (3.5 \times 122)}{36{,}500 + (3.75 \times 52)}$$

= <u>RM25,158,059.68</u>

<u>Question 5</u>

The three areas tested in this question were on Bank Negara Malaysia (BNM) tools for market intervention, interest rate calculations and treasury bills. Although candidates were able to provide the BNM tools, they failed to describe and explain how these tools were used in tightening monetary conditions. Similarly most candidates could calculate the maturity proceeds of a deposit but many did not know how to convert a 360-day basis calculation to a 365-day equivalent rate of interest. On treasury bills, most candidates were able to calculate the settlement proceeds but apart from this calculation, most candidates did not understand how a treasury bill is traded in the secondary market. They were unable to tell the difference between simple discount and simple interest rate. In general, candidates have a superficial understanding of the topics tested and were especially weak when tested on application of concepts and instruments.

5. (a) The tools that are available to Bank Negara Malaysia (BNM) to tighten monetary conditions are as follows:

(i) Raise the Statutory Reserve Requirements: By imposing a higher statutory reserve ratio, this would reduce the amount of deposits and loans a given level of bank reserves can support - a restriction.

(ii) Raise the Discount Rate or vary conditions of borrowing at BNM's discounting window: By raising the discount rate at the central bank's discounting window (rediscounting of Government papers, rediscounting of BAs, REPOs and advances made against approved collateral), the cost and access to the central bank's credit facilities is tightened, hence a restriction.

(iii) Open Market Operations: The direct intervention of the central bank in the open market to withdraw liquidity from the money market through:

- Sale of Government Securities or REPOs.
- Direct borrowings from the money market at higher levels than current market rates.
- Swap transactions in the form of purchase of spot local currency versus foreign currency and simultaneous forward sale of local currency versus foreign currency.

(iv) Interest Rate Regulation: Raise lending rates in the banking sector through increasing the 3-month official BNM intervention rate hence causing the Computed Base Lending Rate (BLR) to rise in a move to combat inflation.

(v) Credit Controls and Guidelines on Lending: Quantitative control of credit expansion can be introduced as part of an anti-inflation package to curb undue lending for consumption and speculation, in favor of credit extension for productive purposes.

(b) (i) Maturity value using 360 day basis = RM 500,000 [1 + (185 x 15/36,000)]

= RM538,541.67

(ii) The 365-day equivalent rate = 365/360 x 15.0%

= 15.21%

(c) Maturity value at end of 3 yrs = $RM1{,}000{,}000(1.10)^3$

= RM1,331,000.00

(d) (i) Settlement Proceeds = 5,000,000[1 - (7 x 90/36,500)]

= RM4,913,698.63

(ii) Equivalent yield $= \dfrac{D}{1 - \dfrac{D \times T}{36{,}500}}$

$= \dfrac{7}{1 - \dfrac{7 \times 90}{36{,}500}}$

= 7.123%

(iii) Remaining Tenor = 60 Days (Band 3)

Therefore, sell at market bid of **7.10%**

(iv) Settlement Proceeds = 3,000,000 [1 - (7.1 x 60/36,500)]

= RM2,964,986.30

(v) Rate of return:

Original Purchase Proceeds = 3/5 x RM4,913,698.63

= RM2,948,219.18

Profit = Sale Proceeds - Purchase Proceeds

= RM2,964,986.30 - RM2,948,219.18

= RM16,767.12

Rate of Return (annualise profit over initial outlay)

= (16,767.12/2,948,219.18) x (36,500/30)

= 6.919% p.a. rate of return

Question 6

Candidates performed poorly in this question which tested on the various types of risks and derivative instruments. Only one candidate was able to mention the correct "risks" and/or state the relevant ECM notices in the first part. Candidates lost marks, further when they performed badly in the second part of the question, where they were required to write short notes on KLIBOR futures, forward rate agreements, Green BA and currency options. Only a few candidates provided the right answer. Most candidates were confused between KLIBOR futures and KLIBOR rates.

6. (a) (i) Trading Exposure Risk
ECM 2 - Only authorised dealer permitted to deal in currency.

(ii) Trading Exposure Risks
ECM 2 - Only allowed for firm underlying trade transactions

(iii) Transaction Exposure Risks
Country Risk
ECM 2 & 5 – not be later than 6 months after the intended date of export.
- Remittance of export proceeds exceeded time frame

(iv) Counterparty/Credit Risk
Settlement risk

(b) (i) Futures are contracts made between two parties to buy or sell an underlying instrument/commodity for settlement at a specified future date. KLIBOR futures contract is an 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 (RM1,000,000) with a 3-month maturity on a 360 day year.

(ii) A forward rate agreement is an agreement between two counterparties, one wishing to protect itself against a future rise in interest rates and the other against a future fall. Without any commitment to lend or borrow the principal amount, the parties agree to an interest rate for, say a 3-month period beginning 6 months hence. At maturity, they settle by paying (receiving) only the difference between the interest rate agreed earlier and the current interest rate.

(iii) Green BAs share the same feature with conventional BAs. The difference is that Green BAs are BAs certificates drawn to deal with products that are not listed on Schedule III of BNM guidelines on BAs. In essence, the Green BA originates from the "halal" trade transactions of conventional bank.

(iv) A currency option is a contract that gives the owner the right, but not the obligation, to buy or sell a specified amount of currency at a specified price on or before a specific date in the future.

(c) (i) **Counterparty versus Country Risk**

Counterparty risk is the risk that a counterparty to a transaction will fail to perform according to the terms and conditions of the contract, thus causing the holder of the claim to suffer a loss.

Country risk is the risk of the inability of the borrower of a foreign country to fulfill their obligations due to the government imposed controls in that foreign country or due to political and other crisis.

(ii) **Pre-settlement versus Settlement Risk**

Pre-settlement risks exist whenever a contract is entered into for which settlement occurs at a forward date. For such contracts, a loss would occur if the counterparty were to default and the contract had to be replaced at a higher value than originally incurred.

Settlement or delivery risk refers to a counterparty's failure to perform under the terms of a contract during the settlement process or the risk that technical difficulties interrupt delivery of settlement even if the counterparties are able to perform. In the latter case, payment is likely to be delayed but recoverable.

(iii) **Centralised Invoicing versus Decentralised Invoicing**

Centralised invoicing refers to centralised risk management, where the head office takes over all the foreign exchange requirements of its subsidiaries and affiliates by standing-in at any time to buy or sell currencies at a rate close to the prevailing market rates and thereafter manages the overall currency exposure and decides of the various internal and external hedging strategies.

Under decentralised invoicing, risk management is decentralised whereby each subsidiary is given some degree of autonomy.

(iv) **Switching Currency Bases versus Assets and Liabilities Adjustments**

Under switching currency base, the company attempts to switch its base of manufacturing so that costs are also incurred in the same currencies as its revenues.

Assets and liabilities adjustments refer to the action taken by the company to further reduce the risk of potential foreign exchange losses by ensuring that all its assets are denominated in the strong currencies and having its liabilities in weaker currencies.