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# Foreign Exchange -Basics: Theory

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## What is a foreign exchange market :

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- The foreign exchange market is a decentralized worldwide market.
- The participants in the foreign exchange market include central banks, commercial banks, brokers etc.
- The central banks monitor market movements and sentiments and intervene according to government policy.
- The function of buying and selling of foreign currencies in India is performed by authorized dealers / moneychangers appointed by the RBI.
- The foreign exchange department of the major banks are linked across the world on a 24 hour basis.
- Major commercial centers are London, Amsterdam, Frankfurt, Milan, Paris, New York, Toronto, Bahrain, Tokyo, Hong Kong and Singapore.

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## Functions of a foreign exchange market :

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- Purchasing power is transferred across different countries which will enhance the feasibility of international trade and overseas investments
- The foreign exchange market acts as a central focal point wherein prices of various currencies are discovered.
- Enables the investors to hedge or minimize their risks
- Enables the traders to arbitrage any inequalities
- Provides an investment / trading avenue to entities who are willing to expose themselves to this risk.

## Foreign currency and foreign exchange :

- In the context of India, any currency other than Indian rupees is foreign currency.
- Foreign exchange includes currency, drafts, bills, letters of credits and traveler cheques which are denominated and ultimately payable in foreign currency,

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## Determinants of Exchange rate :

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### Purchasing power parity (Inflation) theorem

- Difference in inflation rates between two countries is considered as the most important factor for variations in exchange rates.
- If domestic inflation is high, it means domestic goods are costlier than foreign goods. This results in higher imports creating more demand for foreign currency, making it costlier. (In other words the value of domestic currency will decline).
- If a basket of goods cost Rs470 in India and \$10 in US then it is quite natural that the exchange rate should be Rs47/\$1
- PPP theory can be expressed by the formula:

$$PPP_r = \text{Spot rate} \frac{(1+r_h)}{(1+r_f)}$$

where  $r_h$  is inflation rate at home;  $r_f$  is the inflation rate of foreign country

### Weakness of PPP theory :

It is not only inflation, which affects foreign currency movements.

PPP ignores substitution effects – i.e. instead of importing goods might be substituted.

Interest rate parity theorem :

- The second most important factor in determining exchange rates after PPP theory.
- Money tends to move towards country offering a higher interest rate thereby resulting in more demand for the foreign country's currency.
- If interest rates in Japan are lower than interest rates in US then Japanese investors would prefer to invest in US which would result in more demand for US \$ in Japan (this will cause US\$ to appreciate in Japan).
- Interest rates provide the basis for computing forward rates as under:

$$\text{Forward rate} = \text{Spot rate} \times \frac{(1+i_f)}{(1+i_h)}$$

**Balance of payments position :**

- The BOP position has a big impact on the value of a nation's currency.
- A big or consistent deficit would mount a pressure on the currency of a nation as deficits require payments in foreign currency.
- In the case of a fixed currency rate scenario – the local currency would be devalued thereby making imports costlier and exports cheaper.
- However in the free rate scenario a big or consistent deficit would be a forewarning for depreciation of a nations currency

**Government intervention :**

At times the government would intervene by purchasing or selling foreign exchange to control pressures on the nations currency.

**Market expectation :**

Market expectation as regards interest rates, inflation, taxes, BOP positions etc would affect the foreign exchange rates.

Overseas investment :

E.g. if US investments in India increases there would be dollar inflows putting downward pressure on dollar in India.

**Speculation :**

Speculators including treasury managers of banks, by virtue of their buying and selling, tend to influence the rates.

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**Direct and Indirect quotes :**

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**Direct quotes:**

- No of units of the domestic currency per unit of foreign currency
- E.g. 1\$ = Rs 49.50 is a dollar direct quote of an Indian rupee in India. However the same quote when quoted in US is not a direct quote for an American.

**Indirect quotes:**

- No of units of a foreign currency per fixed number of domestic currency;
- E.g. Rs 100 = \$0.2245

**Two way quotes**

***Bid price and offer price***

- Bid is the price at which a dealer is willing to buy another currency and offer is the rate at which he is willing to sell the currency.
- E.g. a quote of Rs /\$ is Rs42,50 / 42.55 it means that the dealer will buy \$ at Rs 42.50 and sell dollar at 42.55

**Spreads**

- Spread is the difference between the bid rate and the offer rate and usually represents the profit margins that a dealer expects to make.

**Cross currency rates**

- In India all buy and sell transactions are routed through the US \$.
- Hence all deals involving any other currency would necessarily involve converting in US\$ and then converting the US\$ into INR.
- Thus if an Indian importer wishes to buy Yen he would first have to sell rupees and buy dollar; then he would sell dollar and buy yen.
- The banker would obtain the Yen / \$ rate from Singapore or Tokyo and then apply the Rs /\$ rate to determine the amount of rupees required to buy the desired Yen.

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**Spot rate, Forward rate, cash rate and Tom rate :**

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1. Spot rate : Rate quoted for transactions that will settled two business days from the transaction date (T+2)
2. Forward rate : Rate quoted for transactions that will be settled beyond two business days at a mutually agreed rate and date.
3. Cash rate : Rate quoted for transactions that will settled on the same day (T+0)
4. Tom rate : Rate quoted for transactions that will be settled in one business day form the date of transaction (T+1)

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**Appreciation and depreciation of currency :**

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- (A) Appreciation:
- A currency is said to have appreciated if it is able to purchase more of the other currency.
  - E.g. if Rs /\$ is 1\$ = Rs45 and it changes to 1\$ = Rs46 then dollar is said to have appreciated.
- (B) Depreciation :
- A currency is said to have depreciated if it is able to purchase less of the other currency.
  - E.g. if Rs /\$ is 1\$ = Rs45 and it changes to 1\$ = Rs44 then dollar is said to have depreciated and rupee appreciated.

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**Premium and discount :**

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- Premium :
  - A currency is said to be at a premium if it is more expensive in the forward than in the spot

- If Rs / \$ spot is 44.95/45.00 and 3 month forward is 45.20/45.25 we say that dollar is at a premium
- Discount
  - A currency is said to be at a discount when it is quoting higher in the spot and cheaper in the forward.

Formula for calculating forward premia (discount) :

$$\frac{F - S}{S} \times \frac{12}{n} \times 100$$

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**Arbitrage and equilibrium :**

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Arbitrage means buying in one market & selling in another to take advantage of price differential

1. Geographical arbitrage : Buying currency in say London market & selling it in say Tokyo
2. Triangular arbitrage : Involves three currencies and three markets (also known as three point arbitrage)
3. Arbitrage in forward markets : If the spot rate + interest is greater or less than the forward rate there exists an arbitrage potential.

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**Various foreign currency accounts maintained by Banks :**

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**1. Nostro Account :**

Nostro means “our account with you”

Nostro account is the account maintained by the Bank in India with the bank abroad.

E.g. PNB may maintain a bank account with Citibank, New York. Such account would obviously be in dollars. All foreign exchange transactions routed through Nostro Accounts. The concept of Nostro Account and Exchange Position is explained in details towards the end of the notes.

**2. Vostro Account :**

Vostro means “your account with us”.

E.g. Citibank New York may maintain a Rupee account with SBI

**3. Loro Account :**

Loro means “their account with you”

E.g. SBI has an account with Citibank New York. When Syndicate Bank refers to this account in any correspondence with Citibank New York it would refer to it as Loro account.

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**INTERNATIONAL CREDIT INSTRUMENTS :**

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International credit instruments play an important role in settling of international transactions

**Telegraphic or cable transfers :**

- Used for remittance of foreign exchange.

- Mode of transfer is telegraphic transfer.
- Sender of money pays the money to be transferred to Authorized dealer
- The authorized dealer is requested to make the payment in foreign currency to the ultimate receiver of the money.
- Code numbers used for verifying authenticity of remittances.
- Authorized dealer charges for this service
- Payment received by the receiver on the same day.

**TT Buying and selling rates :**

- TT buying rates applicable for transactions where the Banks nostro account has already been credited or will be credited without delay.
- Nostro Accounts are foreign currency account maintained at foreign centers with correspondent banks to facilitate receipt and payment of foreign currency.
- TT selling rates are applicable where bank does not have to handle any documents/ bills

**Bankers draft and bankers cheques :**

- The payer obtains a bankers draft or a cheque drawn by a foreign bank on its correspondent bank.
- The receiver of the draft presents it for collection through his banker.
- More time consuming than Mail transfer and not a very preferred mode of transfer of funds.

**BILLS OF EXCHANGE :**

## Bill buying and selling rates :

- Bill buying rates is applied where the bank has to handle documents. A good example of a situation where buying rates is applied is when export bills for collection.
- Bill selling rates is applied where the bank has to handle documents in a transaction like payment of export bill.

## Letters of credit :

- Preferred form of payment for making trade payments.
- The importer banks requests his banker (issuing bank) to open an letter of credit.
- The letter of credit is issued through the correspondent bank which in turn will advise the beneficiary bank (advising bank)

## International Money orders :

- Issued by post offices of respective countries.
- MO are issued in the currency of the issuing post office.
- The domestic post office will then convert the currency (charge a nominal fee) and pay the same to the addressee.

## TC Buying and selling rates :

The rates at which TCs are purchased and sold by the bank

## Euro currency

- New currency of 11 out of 15 members of EU

- Britain, Denmark, Sweden and Greece are not a part of it.
- Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain are part of it.
- Euro is an international currency without the backing of bullion
- European Central Bank (ECB) controls euro.
- Has erased national boundaries

**Costs and benefits of EMU :**

Costs :

**1. Loss of monetary independence**

- National monetary autonomy has to be surrendered to ECB
- This would mean loss of control over economic policy, loss of right to alter exchange rate and also loss seignorage (right to print money)

**2. Loss of National pride**

- Certain currencies are a matter of national pride.
- Sacrificing national currency may be politically costly and provocative.

**3. Cost of conversion**

- Includes cost of printing bank notes, minting coin.
- Withdrawal and destruction of old currency
- Changes in information and technology and processes
- Retraining of trained personnel

**4. Earning loss for Banks**

- Single currency reduces the earnings of the banks as it reduces the currencies in which they can trade.

Benefits

1. Savings in transaction costs: By elimination of the need to hedge risks and conversion costs
2. Lower inflation : A centralized banking control through the ECB will be in a better position to control inflation by efficient transfer of resources.
3. Lower interest rates : Lower budget deficit, elimination of exchange rate risks and increased competition amongst banker will lower interest rates
4. Increased investments : Low interest rates will spur capital investments resulting in growth.
5. Better allocation of resources : Unrestricted resource mobility results in better and efficient utilization of resources.
6. Level playing field : The tendency of a country to devalue its currency to compete with others is eliminated.
7. Pooling of exchange reserves : Would result in a collective pool of around \$200 billion
8. Integration of markets : Single currency eliminates market imperfections for products services etc.
9. Global currency status : Euro is all set to become a global currency and will be second only to dollar in its strength as a reserve currency
10. Capital account convertibility : One of the most essential parameters for integration of the domestic economy with the global economy

**Basic objectives of capital account convertibility**

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- To deepen and integrate financial markets
- Increased access to global savings
- Discipline domestic policy makers
- Allow greater freedom to individual decision-making
- Facilitate resident Indians to invest their surplus outside the country
- Move capital from one country to another without hindrances

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**Nostro Account and Exchange Position Explained.**

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Nostro Account refers to “Our Account with you”. For example if Bank of Baroda maintains a Dollar Account with CITIBANK (US), Bank of Baroda will refer it to as Nostro A/c : Citibank(US) meaning our account with Citibank. A Nostro A/c is a current account - no interest is earned on the balance kept in the account; but if the account is overdrawn then interest is charged.

The account is prepared in the books of the bank in which the account is maintained. A Nostro a/c is very similar to a passbook maintained by a customer in a bank - Hence actual inflow of foreign currency will be credited to the account and outflow will be debited.

Terms used with reference to Nostro A/c

Telegraphic Transfer (TT) - A mode of immediate transfer of funds (earlier done through telegrams / telex - now done online)

**TT issuance / TT Sale / TT remittance:** Suppose a customer of Bank of Baroda requires BoB to transfer immediately \$100,000 to his associate in US. He will pay the Rupee equivalent to BoB (India) and BoB will instruct CITIBANK (US) to hand out \$100,000 to the associate. In such a case CITIBANK (US) after handing out \$100,000 will **debit** the Nostro A/c

**TT payment / TT Purchase:** Mr.Rastogi (a US citizen) remits \$10,000 to his brother Ram in India. Ram will approach BoB which will hand out the Rupee equivalent of \$10,000. BoB in turn will receive \$10,000 from Mr Rastogi's banker. Hence in this case \$10,000 will be **credited** to the Nostro A/c

**DD Payment / Encashment of DD/ DD Purchase:** Desi Indian Ltd receives a DD of \$5000 issued in its favour from Washington. Desi Indian Ltd will approach BoB to encash the DD - BoB will hand over the Rupee Equivalent of \$5,000 and in turn will encash the DD of \$5000. Hence the Nostro A/c will be **credited**.

**DD issuance:** Mr Bharat of New Delhi approaches BoB to get a DD issued for \$1000 in favour of a supplier payable at Boston (USA). The Bank charges Rs.68000 and issues the DD. **This transaction wont be entered in the Nostro A/c on the date of issuance of DD. It will be entered on the day the amount of DD is paid. On that day the Nostro A/c will be debited with \$1000**

**Forward Contracts:** These are not entered into Nostro A/c on the day of the contract - these are entered on the day they are executed.

**Bill of Exchange Purchased:** These are not entered on the day of purchase - these are entered on the day of realisation

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# **Risk Management - Theory**

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## **Foreign exchange risk**

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- i. The rate of exchange of one currency against another is determined by demand / supply factor to a large extent.
- ii. Globally currencies are fast becoming commodities.
- iii. With the growing trend of floating rates, risks have multiplied in terms of fluctuation in foreign exchange.
- iv. All companies engaged in international trading are highly vulnerable to foreign exchange risk.
- v. International finance is vulnerable to both exchange rate and interest rate fluctuation.

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## **Factors influencing the value of currency**

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- i. Balance of payment situation
- ii. Trade deficit
- iii. Government borrowings- internal / external
- iv. Export viability or standing in the world
- v. Inflation levels
- vi. Interest rates

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## **FX risk affecting Profit and loss account**

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- i. Imports of raw materials
- ii. Export of goods
- iii. Sundry remittances for royalty
- iv. Interest payment on outstanding FX loan
- v. Translation of financial statements of offshore entities
- vi. Depreciation on fixed assets financed through FX loans

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## **FX risk affecting the Balance sheet**

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Imports of fixed assets through foreign exchange loan  
Approvals of foreign exchange (loans pending draw down)

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## **Recognition of exchange rate risk (when should the risk be recognized)**

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- i. At the time of budgeting
- ii. At the time of raising import orders
- iii. At the time of receiving export orders
- iv. At the time of approvals of foreign exchange loan
- v. At the time of shipment of goods / drawdown of loan
- vi. On the due date of payment

**Types of foreign exchange exposure**

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**Transaction exposure**

- i. Occurs when a change in foreign exchange rate occurs between the time a transaction is executed and the time it is settled
- ii. Thus this risk occurs whenever the cash flow is affected in a particular transaction

**Translation exposure**

Occurs when the assets and liabilities which are denominated in one currency are translated into another currency for inclusion in financial statement

**Economic Exposure**

This is the risk of a change in the foreign exchange rate due to change in the economic condition of one country

**Operating exposure**

Sensitivity of operating income to changes in exchange rate.

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**Foreign exchange risk management (FERM)**

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- i. Also known as exposure management.
  - ii. Copes with the possibility of incurring a loss on account of a open or an unhedged position in foreign exchange.
  - iii. Especially important where
  - iv. a large proportion of a corporate earnings / expenses are in foreign exchange; or
  - v. where any fluctuation in the FX has the potential to disturb the corporate ability to execute a strategic plan
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**Major Foreign Exchange Crisis faced**

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**South East Asian crisis**

- i. This crisis originated in Thailand and later on spread to other countries like Philippines, Taiwan etc.
- ii. Thailand and other SE countries were witnessing a very high level of GDP growth of almost 9-12%.
- iii. Moreover the exchange rate was pegged by the government and was not on a free float. This gave a false sense of security to local borrowers.
- iv. High GDP growth and interest rate differentials (due to fixed exchange rate mechanism) resulted in huge inflows of foreign currency (mostly hot money) seeking higher returns predominantly in the area of stock markets and real estate.
- v. Inflow of hot money often results in a feeling of general well being with little or no attention being given to future growth strategies.
- vi. However, in the mid 90s US federal bank (under the leadership of Alan Greenspan) started raising interest rates to spur US economy.
- vii. This rise in the US interest rates resulted in the hot money flowing out of the economy leaving Thailand gasping for breath.
- viii. The large outflow also resulted in the collapse of the banking system that was not geared to handle such outflows.

**Argentine crisis**

- i. There was gross negligence in fiscal discipline in 1989 resulting in the economy being in doldrums and widespread rioting.
- ii. The currency board provided an immediate solution by saying that each Argentine peso issued would have to be backed by US\$.

- 111. This put a stop to reckless printing of local currency.
- 10. Inflation dropped and Argentina prospered overnight resulting in a general feeling of well-being and prosperity.
- 0. What followed was reckless spending with little thought to future growth plans.
- 01. Increased government spending, along with red tapism and corruption resulted in an increase in federal borrowing.
- 011. To meet the deficit, the government raised the tax rates.
- 0111. This discouraged investment and encouraged tax evasion.
- 1ξ. Increased tax burden, meant escalating government borrowings resulting in high interest cost thereby triggering a vicious circle of debt trap
- ξ. The financial crisis of Argentina is slowly spreading its tentacles to other Latin American countries like Mexico as well.

### **Lessons from economic crisis**

- i. Adopting long term recovery policies rather than resorting to knee jerk reactions.
- ii. Strengthen the financial services sector especially banking.
- iii. Maintaining a control over inflows and outflows of foreign exchange.

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### **Fundamental hedging principles**

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- i. Hedging must be done centrally to avoid duplication.
- ii. All currency exposures need to be included in the hedging programs.
- iii. A portfolio approach is required to take the net effect of exposures into account.
- iv. Before hedging the exposure using financial market products, the possibilities of exploiting built in hedge strategies need to be explored.

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### **Exchange rate risk management techniques**

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- (i) Forward contract
- (ii) Currency options
- (iii) Range forwards
- (iv) Ratio range forwards
- (v) Currency swaps
- (vi) Currency futures.
- (vii) Caps, floors, collars and fixed rate derivatives
- (viii) Selling and buying own currency
- (ix) Matching receipts and payments
- (x) Leads and lags
- (xi) Netting
- (xii) Arbitrage operations
- (xiii) Cross currency rollover

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### **Interest rate management techniques**

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- (i) Forward interest rate agreements
- (ii) Interest rate swaps
- (iii) Interest rate caps

- (iv) Interest rate collars
- (v) Interest rate ceilings

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**Forward contracts**

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- (i) An immediate firm and binding agreement between bank and customer to buy or sell an agreed amount of currency at a date of exchange and at a rate fixed at the time the contract is made.
- (ii) The time frame can vary from a few days to many years.
- (iii) Forwards (unlike futures) are not traded on the exchange.
- (iv) Hence the only way to exit a forward contract is to cancel the forward cover.
- (v) The decision to hedge would depend upon the cost of hedging (forward premia) and also the expected movement in the foreign exchange rates.
- (vi) A forward contract locks on to a particular exchange rate thereby insulating from exchange rate fluctuation.
- (vii) In India forward contracts are available for period's up to 12 months.
- (viii) Forward premia are determined by demand and supply.
- (ix) Internationally the forward premia or discounts reflect the prevailing interest rate differentials and as such arbitrage opportunities are limited.
- (x) As a rule a currency with a higher interest rate trades at a discount to a currency with lower interest rates.

**Closing out of forward contracts**

When the customer cannot perform the forward exchange contract the bank will close out the contract in one of the following manner:

If the customer was to sell foreign exchange forward

The bank will sell foreign exchange spot and buy it forward from the customer

If the customer was to buy foreign exchange forward

The bank will sell foreign exchange forward and buy back the same at spot rate

**Extension of forward contracts**

- (i) At times, due to delay in receipt or payment of foreign exchange the customer may ask the bank to extend the forward contract.
- (ii) In such cases the bank will extend the forward contract at term which is favorable as compared to entering into a fresh forward contract.
- (iii) In some cases the bank may close out the old contract and enter into a fresh forward contract.

**Advantages / disadvantages of forward cover**

Forward cover provides insurance to the taker and thereby acts as a hedge.

However by taking a forward cover one cannot take advantage of upswings or favorable movements in foreign exchange rates.

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**Currency futures**

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- i. Closely related to currency forwards.
- ii. Popularly known as futures contracts
- iii. A standardized agreement to buy or sell a pre specified amount of foreign exchange in the futures market at some specified future date.
- iv. Available for most hard currencies of the world say Yen, DM, £ sterling, \$.
- v. Futures being standardized are dealt on an organized exchange.

**Difference between forward contracts and futures contract**

Criteria	Forward contracts	Futures contracts
<b>Nature and size of contract</b>	Size and maturity not standardized	Size and maturity are standardized
<b>Mode of trading</b>	Directly between the client and the bank	Through the clearing house
<b>Liquidity</b>	Relatively low liquidity	High liquidity due to standardization
<b>Deposits / Margins</b>	Deposits / margins not required. Not marked to market	Requires guarantee deposits / margins. Marked to market every day
<b>Default risk</b>	Very High	Relatively less due to mark to market procedures
<b>Actual delivery</b>	Closure involves actual delivery of currencies	Position are reversed to close the deal

**Currency options**

**What is a currency option**

It is a financial instrument that provides the holder a right but not an obligation to buy or sell pre-specified amount of currency at a predetermined rate on a specified date.

**Types of currency options**

**Call options**

- (i) The right to buy a particular currency at a specified rate on a particular date. or within a specified period.
- (ii) Such an option will be exercised only if the rate of the currency on the exercise date is higher than the option strike price

**Put options**

- (i) The right to sell a particular currency at a specified rate on a particular date. or within a specified period.
- (ii) Such an option will be exercised only if the rate of the currency on the exercise date is lower than the option strike price

**Features of options trading**

- (i) Hedges foreign exchange exposures while at the same time gives the opportunity to take advantages of favorable upswings.
- (ii) The cost of currency option is limited to the option premia.
- (iii) Option premia normally expressed as a percentage of the spot rate prevailing on the date of entering into contract.
- (iv) However the seller of the option runs an unlimited risk as against the risk run by the buyer which is limited to the option premia paid.

- (v) In view of the high unlimited risk of the seller options are mainly dealt in the hard currencies and are traded on the OTC.

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**Currency swaps**

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- (i) A legal agreement between two parties to exchange the principal and interest rate obligation or receipts in different currencies.
- (ii) A currency swap is an agreement to exchange fixed or floating rate payments in one currency for fixed or floating payments in a second currency plus an exchange of the principal currency amount.
- (iii) Allows the customer to redenominate a loan from one currency to another.
- (iv) Redenomination done to reduce borrowing costs and also to hedge against a perceived foreign exchange fluctuation.
- (v) Currency swaps enables corporate to exploit their comparative advantage in raising funds in one currency to obtain savings in other currencies.
- (vi) A company has no longer got to live with a bad decision – if it feels that it has erred in the choice of currency it can always swap it.

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**Currency Swaps**

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**Currency swaps in rupees**

- (i) Currency swap in Indian rupees is pretty difficult to execute due to non availability of forward rates beyond a year.
- (ii) However there are ways to come around this.
- (iii) The corporate borrows in foreign currency and hands over the foreign currency to a foreign branch of an Indian bank. The foreign branch will then invest the foreign exchange in foreign assets for the period of the swap.
- (iv) The Indian Bank lends money to the corporate in Indian rupees keeping a spread of say 1% over the foreign currency interest rates.
- (v) The corporation repays the principal and interest in Indian rupees.
- (vi) The bank correspondingly repays the foreign currency loan by liquidating the investments made out of the initial foreign currency deposits.

**Types of currency swaps****Fixed to fixed currency swaps**

- (i) Involves exchanging fixed interest payments on a loan in one currency for fixed interest payments on an equivalent loan in another currency.
- (ii) It is not necessary that the actual principal be swapped.

**Fixed to floating cross currency swaps**

Fixed rate obligation in one currency is swapped for a floating rate obligation in another currency.

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**Reducing risks – Internal measures [Important Theory Question]**

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**Matching receipts and payments**

Foreign exchange risk can be eliminated if the company has the same currency exposure for receipts as well as payments.

**Invoicing or billing in the desired currency**

One way to reduce the risks associated with FX is to raise the invoice in the home currency.

However it may be impractical to adopt this system to international transaction unless the product of the company has got such a demand that its terms and conditions will be accepted by parties all over the world.

**Leads and lags (leading and lagging)**

Sound financial management practices require that assets should be in strong currency while liability should be maintained in weak currency.

Leading and lagging refers to the technique of adjusting the timing of receipts and payments.

Leading: collect the receivables from foreign debtors before they are due (if the home currency is expected to strengthen) and to pay the foreign currency creditors before their due date (if home currency is expected to depreciate)

Lagging: delay the collection of receivables from foreign debtors (if the home currency is expected to weaken) and also to delay payment to creditors after their due date (if home currency is expected to appreciate)

**Netting**

- (i) Very often we find MNCs have mutual trading amongst themselves.
- (ii) Foreign exchange risk exposure of such companies can be substantially reduced if the FX receivables and payables are settled on a net basis rather than making two way flow of moneys.
- (iii) To do netting it is important that the dates of settlement and the currency of settlement should be common.

**Indexation clauses**

- (i) This is yet another way to hedge against foreign exchange fluctuation.
- (ii) The agreement of export or import includes an indexation clause which says that the contract price to be adjusted for any adverse movement in foreign exchange rate.
- (iii) Obviously such clause can be inserted depending upon the bargaining strength of the parties.
- (iv) Any clause which stipulates that the entire loss arising out of adverse movement in foreign exchange to be borne by one party will be perceived to be very harsh and is rarely adopted. Normally a milder version, which says that any fluctuation beyond a certain threshold limit will be borne by one party.

**Sharing risks**

This is a diluted form of indexation clause whereby both the parties to the contract agree to share the risks arising out of adverse movement in some predetermined ratio / manner.

Shifting the manufacturing base

- (i) This technique is normally useful for MNCs who have the ability to set up manufacturing bases across the globe and have sale around the world.
- (ii) In case the MNC has its production base in one country while the sales are predominantly in another country, the company may find it advantageous to shift the manufacturing base to the country of sale in order to avoid risks associated with foreign exchange fluctuations.

**Forward Interest rate agreement**

FRA is a financial contract (for a specified period from the start date to the maturity date) between two parties to exchange interest payments for a notional principal amount on the settlement date.

**Interest rate swaps**

IRS is a financial contract between two parties to exchange a stream of payments for a notional principal amount on multiple occasions during a specified period.

Accordingly on each payment date that occurs during the swap period cash payments are made by one party to another.

**Interest rate caps (option)**

An interest rate cap is a contract that enables customers with floating rate debt to limit or "cap" their exposure to rising interest rates.

Under this contract, the cap buyer is reimbursed for the amount by which the floating rate index exceeds a certain threshold.

An interest rate cap can be structured to protect customers from increases in a variety of floating rate indices, including LIBOR, commercial paper, prime and U.S. treasury rates.

Typically, the buyer makes an up-front payment to purchase the cap. In general, the longer the term of the cap and the more protection offered by the cap, the more expensive the cap will be.

**Interest rate collars**

An agreement between the seller of a collar and the borrower to limit the fluctuations in the borrower's effective interest rate to a band between a specified ceiling rate and a floor rate.

The upfront premia on the cap options tends to be large. Hence in order to reduce the cost of the hedge a limit is placed on the upside gains.

**Interest rate ceilings**

- i. Provides protection in a rising rate scenario to borrowers who have borrowed on a floating rate.
- ii. When the daily average of market rate is higher than the ceiling the bank reimburses the difference to the client.
- iii. On the other hand the company can borrow at lower interest rates in a falling rate scenario without any obligation to the bank.
- iv. It is a kind of insurance and the normal fees charged by the bank for this is 1% p.a.