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NISM SERIES I - CURRENCY DERIVATIVES CERTIFICATION

NISM 1 – CURRENCY DERIVATIVES CERTIFICATION EXAMINATION

SHORT NOTES BY PASS4SURE.IN

I. Introduction to Indian Currency Market

Initially, the trading of goods and services was by barter system where in goods were exchanged for each other. Such system had its difficulties primarily because of non-divisibility of certain goods, cost in transporting such goods for trading and difficulty in valuing of services. People tried various commodities as the medium of exchange ranging from food items to metals. The process of evolution of medium of exchange further progressed into development of paper currency. People would deposit gold/ silver coins with bank and get a paper promising that value of that paper at any point of time would be equal to certain number of gold coins. With time, and the growth in international trade resulted in evolution of foreign exchange (FX) i.e., value of one currency of one country versus value of currency of other country. Whenever there is a cross-border trade, there is need to exchange one brand for another, and this exchange of two currencies is called "foreign exchange" or simply "forex" (FX).

The smooth functioning of international trade required a universally accepted foreign currency to settle the internal trade and a way to balance the trade imbalances amongst countries. The documented history suggests that sometime in 1870 countries agreed to value their currencies against value of currency of other country using gold as the benchmark for valuation.

During 1944-1971, countries adopted a system called Bretton Woods System. As part of the system, all currencies were pegged to USD at a fixed rate and USD value was pegged to gold. With adoption of this system, USD became the dominant currency of the world. Finally Bretton Woods system was suspended and countries adopted system of free floating or managed float method of valuing the currency. Developed countries gradually moved to a market determined exchange rate and developing countries adopted either a system of pegged currency or a system of managed rate.

Major Currency Pairs

The most traded currency pairs in the world are called the Majors. The list includes following currencies: Euro (EUR), US Dollar (USD), Japanese Yen (JPY), Pound Sterling (GBP), Australian Dollar (AUD), Canadian Dollar (CAD), and the Swiss Franc (CHF). These currencies follow free floating method of valuation.

- **USD:** The US Dollar is by far the most widely traded currency. In part, the widespread use of the US Dollar reflects its substantial international role as "investment" currency in many capital markets, "reserve" currency held by many central banks, "transaction" currency in many international commodity markets, "invoice" currency in many contracts, and "intervention" currency employed by monetary authorities in market operations to influence their own exchange rates.
- **EUR:** Like the US Dollar, the Euro has a strong international presence and over the years has emerged as a premier currency, second only to the US Dollar.

- **JPY:** The Japanese Yen is the third most traded currency in the world. It has a much smaller international presence than the US Dollar or the Euro. The Yen is very liquid around the world, practically around the clock.

- **GBP**: Until the end of World War II, the Pound was the currency of reference. The nickname Cable is derived from the telegrams used to update the GBPUSD rates across the Atlantic.

- **CHF:** The Swiss Franc is the currency of Switzerland and is represented with the symbol CHF. It is one of the most stable currencies in the world and is used as the reserve currency in many of the international transactions.

Overview of International Currency Markets

For currency market, the concept of a 24-hour market has become a reality. In financial centers around the world, business hours overlap; as some centers close, others open and begin to trade. Given this uneven flow of business around the clock, market participants often will respond less aggressively to an exchange rate development that occurs at a relatively inactive time of day, and will wait to see whether the development is confirmed when the major markets open.

At any moment, the exchange rates of major currencies tend to be virtually identical in all the financial centers where there is active trading. Rarely are there such substantial price differences among major centers as to provide major opportunities for arbitrage. In pricing, the various financial centers that are open for business and active at any one time are effectively integrated into a single market.

Basics of currency markets and peculiarities in India

Currency Pair: The most significant part of currency market is the concept of currency pairs. In currency market, while initiating a trade you buy one currency and sell another currency. Therefore same currency will have very different value against every other currency. This peculiarity makes currency market interesting and relatively complex. For major currency pairs, economic development in each of the underlying country would impact value of each of the currency, although in varying degree.

Base currency/ Quotation currency: Every trade in FX market is a currency pair: one currency is bought with or sold for another currency. We need to identify the two currencies in a trade by giving them a name. The BC is the currency that is priced and its amount is fixed at one unit. The other currency is the QC, which prices the BC, and its amount varies as the price of BC varies in the market. What is quoted throughout the FX market anywhere in the world is the price of BC expressed in QC.

Interbank Bank Market and Merchant Bank Market: Interbank market is the market between banks where dealers quote prices at the same time for both buying and selling the currency. Similarly dealers in interbank market quote prices for both buying and selling i.e., offer two way quotes. In majority of the “merchant” market, merchants are price takers and banks are price givers. Although few large merchants or corporates may ask banks to quote two way prices as such merchants may have both side interest i.e., interest to sell or buy or both.

Two Way Quote: In a two way quote, the prices quoted for buying is called bid price and the price quoted for selling is called as offer or ask price. There are certain market norms for quoting the two way quotes. Some of the important norms are as follows:

1. The bid price (lower price) is quoted first followed by offer price (higher price)

2. The offer price is generally quoted in abbreviated form. In case the currency pair is quoted upto four decimal places then offer price is quoted in terms of last two decimal places and if the currency pair is quoted in two decimal places then offer price is quoted in terms of two decimal places.

Appreciation/ Depriciation: Changes in rates are expressed as strengthening/weakening of one currency to the other currency. Changes are also expressed as appreciation or depreciation of one currency in terms of the other currency. Whenever the base currency buys more of the quotation currency, the base currency has appreciated and the quotation currency has weakened / depreciated.

Market Timing: In India, OTC market is open from 9:00 AM to 5:00 PM. However, for merchants the market is open from 9:00 AM to 4:30 PM and the last half hour is meant only for interbank dealings for banks to square off excess positions.

Price Benchmarks: Banks price large value merchant transactions from interbank rate (IBR). IBR is the price available to the bank in the interbank market. Therefore IBR could differ from bank to bank. For small value transactions, banks publish a standard price for the day called as card rate. For small value transactions, banks publish a standard price for the day called as card rate. On most days for most banks, the card rate is same for the whole day.

Price Discovery: Gradually, market discovers an equilibrium price at which market clears buy and sell orders. This process of discovering an equilibrium price is called as price discovery.

RBI Reference Rate: RBI reference rate is the rate published daily by RBI for spot rate for various currency pairs. The Reserve Bank periodically reviews the procedure for selecting the banks and the methodology of polling so as to ensure that the reference rate is a true reflection of the market activity. There is an increasing trend of large value FX transaction done at RBI rate even on OTC market.

Settlement date or Value date

Unlike currency futures market, the settlement in the OTC spot market happens by actual delivery of currency. The mechanism of settlement where each counterparty exchange the goods traded on the maturity of contract is called as gross settlement and the mechanism where market participants only settle the difference in value of goods is called as net settlement. Please note that value date is different from trade date. On trade date, the two counterparties agree to a transaction with certain terms (currency, price, and amount and value date). The settlement of the transaction, when counterparties actually exchange currency, is called as value date.

The most important value date is the “spot” value date, which is settlement after two business days. The price at which settlement takes before spot date is a derived price from spot price and is not a traded price.

OTC Forward Market

The forward OTC market can provide quotes for booking a forward contract for any maturity. However, the liquidity is high for maturity less than one year and beyond that liquidity is less. With respect to settlement, the market participant could decide to settle it via gross settlement mechanism or net settlement mechanism. One more unique feature of OTC forward market is the requirement of underlying trade contract before executing the forward contract.

Exchange Rate Arithmetic- Cross Rate

For some currency pairs prices are not directly available and are rather derived by crossing the prices of underlying currency pairs. Crossing the prices to arrive at price of the currency pair could involve either multiplication or division of the underlying prices. In market parlance, the price of currency pair for which direct prices is not available is called as cross rate.

Let us start the computation of cross rate, using the buy side argument i.e. price of buying 1 EUR in terms of INR. As understood from underlying currency pairs, the price of EUR is directly available only in terms of USD. Therefore you need to sell INR to buy USD; and further sell the USD received to buy EUR. It is important to identify this FX conversion path of selling one currency and buying another to calculate the cross rate.

Impact of Economic Factors on Currency Prices

There are multiple factors impacting the value of the currency at any given point of time. Some of the factors are of the local country while others could be from global markets. For example, the value of INR against USD is a function of factors local to India like gross domestic product (GDP) growth rate, balance of payment situation, deficit situation, inflation, interest rate scenario, policies related to inflow and outflow of foreign capital. It is also a function of factors like prices of crude oil, value of USD against other currency pairs and geopolitical situation.

To assess the impact of economic factors on the currency market, it is important to understand the key economic concepts, key data releases, their interpretation and impact on market. Since currency market is a globalized market and the value of currency is always determined against another currency, therefore the analysis in FX market also means analysis of economic conditions in other major countries of the world.

Economic Indicators

GDP: GDP represents the total market value of all final goods and services produced in a country during a given year. A GDP growth rate higher than expected may mean relative strengthening of the currency of that country, assuming everything else remaining the same.

Retail Sales: It is a coincident indicator and shows how strong is consumer spending. A retail sales number higher than expected may mean relative strengthening of the currency of that country.

Consumer Price Index (CPI): CPI is a statistical time-series measure of a weighted average of prices of a specified set of goods and services purchased by consumers. The indicator measures level of inflation in the economy for the basket of goods and services which are generally brought by the people.

Non-Farm Payrolls: Nonfarm payrolls represent the number of jobs added or lost in the economy over the last month, not including jobs relating to the farming industry, government jobs, household jobs and employees of non-profit organization that provide assistance to individuals.

Import/Export Growth: For a country like India, the figures pertaining to import / export, current account deficit and balance of payments are very important. During periods of risk aversion, any development resulting in widening current account deficit results in weakening of INR.

Central Bank Meeting and Key Decisions: Market also tracks minutes of the central bank meetings and the key policy decisions. Some of the important announcements from central bank meetings are their interest rate decisions, CRR (cash reserve ratio). Market also actively looks forward to central bank's perspective on state of the economy.

II. Foreign Exchange Derivatives

Derivative is a product whose value is derived from the value of one or more basic variables, called bases. The underlying asset can be equity, foreign exchange, commodity or any other asset. Derivative products initially emerged as hedging devices against fluctuations in commodity prices, and commodity linked derivatives remained the sole form of such products for almost three hundred years. Financial derivatives came into spotlight in the post 1970 period due to growing instability in the financial markets. However, since their emergence, these products have become very popular and by 1990s, they accounted for about two thirds of total transactions in derivative products.
In the Indian context the Securities Contracts (Regulation) Act, 1956 [SC(R)A] defines "derivative" to include-

- A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security.
- A contract which derives its value from the prices, or index of prices, of underlying securities.

Derivative Products

Forwards: A forward contract is a customized OTC contract between two parties, where settlement takes place on a specific date in the future at today's pre-agreed price.

Futures: It is similar to forward except that it is an Exchange-trade product. The term “futures” refer to the derivative and the term “future” to a later point in time. Thus, the “futures price” is the current price of derivatives and the “future” price is the price that will prevail on a later point of time.

Options: Option does not buy or sell the underlying directly but buys or sells the right without obligation on the underlying. The right can be the right to buy (when it is called call option) and the right to sell (when it is called put option).

Swaps: Swaps are agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are:

- Interest rate swaps: These entail swapping only the interest related cash flows between the parties in the same currency.
- Currency swaps: These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

Growth Drivers of Derivative Products:

- Increased Volatility
- Increased integration of markets
- Marked improvement in communication facilities and sharp decline in their costs
- Development of more sophisticated risk management tools
- Innovations in the derivatives markets

Market players

The following three broad categories of participants - hedgers, speculators, and arbitrageurs - trade in the derivatives market. Hedgers face risk associated with the price of an underlying asset and they use derivative markets to reduce or eliminate this risk. Speculators wish to bet on future movements in the price of an underlying asset. Derivatives give them an ability to buy the underlying without paying for it fully or to sell it without owning it or delivering it immediately. In the process, the potential gains and losses are amplified. Arbitrageurs are in business to take advantage of a discrepancy between prices in two different markets.

- Prices in an organized derivatives market reflect the perception of market participants about the future and lead the prices of underlying to the perceived future level.
- The derivatives market helps to transfer risks
- With the introduction of derivatives, the underlying market witnesses higher trading volumes
- Speculative trades shift to a more controlled environment of derivatives market
- Derivatives trading acts as a catalyst for new entrepreneurial activity.

III. Exchange Traded Currency Futures

A futures contract is a standardized contract, traded on an exchange, to buy or sell a certain underlying asset or an instrument at a certain date in the future, at a specified price. Both parties of the futures contract must fulfill their obligations on the settlement date. Currency futures are a linear product, and calculating profits or losses on these instruments is similar to calculating profits or losses on Index futures. In determining profits and losses in futures trading, it is essential to know both the contract size (the number of currency units being traded) and also the "tick" value.

Futures Terminology

Spot price: The price at which the underlying asset trades in the spot market.
Futures price: The current price of the specified futures contract

Contract cycle: The period over which a contract trades. The currency futures contracts on the SEBI recognized exchanges have one-month, two-month, and three-month up to twelve-month expiry cycles.

Value Date/Final Settlement Date: The last business day of the month will be termed as the Value date date of each contract. The rules for Inter-bank Settlements, including those for 'known holidays' and 'subsequently declared holiday' would be those as laid down by Foreign Exchange Dealers' Association of India (FEDAI).

Expiry date: Also called Last Trading Day, it is the day on which trading ceases in the contract; and is two working days prior to the final settlement date.

Contract size: The amount of asset that has to be delivered under one contract. It is also called as lot size.

Initial margin: The amount that must be deposited in the margin account at the time a futures contract is first entered into is known as initial margin.

Marking-to-market: In the futures market, at the end of each trading day, the margin account is adjusted to reflect the investor's gain or loss depending upon the futures closing price. This is called marking-to-market.

Distinction between futures and forward contracts

Forward contracts are often confused with futures contracts. The confusion is primarily because both serve essentially the same economic functions of allocating risk in the probability of future price uncertainty. However futures have some distinct advantages over forward contracts as they eliminate counterparty risk and offer more liquidity and price transparency.

Advantages and Limitations of Futures

Advantages:

- Price transparency.
- Elimination of Counterparty credit risk.
- Access to all types of market participants. The OTC market is restricted to Authorized Dealers (banks which are licensed by RBI to deal in FX), individuals and entities with 36 forex exposures. Retail speculators with no exposure to FX cannot trade in OTC market.
- Futures offer low cost of trading as compared to OTC market.

Limitations:

- The benefit of standardization, though improves liquidity in futures, leads to imperfect hedge since the amount and settlement dates cannot be customized.
- While margining and daily settlement is a prudent risk management policy, some clients may prefer not to incur this cost in favor of OTC forwards, where collateral is usually not demanded.

Interest Rate Parity

This concept of difference between future exchange rate and spot exchange rate being approximately equal to the difference in domestic and foreign interest rate is called the “Interest rate parity”. Alternative way to explain, interest rate parity says that the spot price and futures price of a currency pair incorporates any interest rate differentials between the two currencies assuming there are no transaction costs or taxes.

Please go through the example in the Nism book to get a better understanding of the concept

IV. Strategies Using Currency Futures

Market Participants

Hedgers: These types of participants have a real exposure to foreign currency risk on account of their underlying business and their objective is to remove the FX risk using currency futures. The objective of hedgers is to reduce the volatility in future cash flows by locking in the future currency rates.

Speculators: Speculators play a vital role in the futures markets. Futures are designed primarily to assist hedgers in managing their exposure to price risk; however, this would not be possible without the participation of speculators. Speculators, or traders, assume the price risk that hedgers attempt to lay off in the markets.

Arbitragers: This set of market participants identify mispricing in the market and use it for making profit. They have neither exposure to risk and nor do they take the risk. Arbitrageurs lock in a profit by simultaneously entering opposite side transactions in two or more markets.

Computing payoffs from a portfolio of futures and trade remittances

The market participants may undertake various kinds of currency positions and it is important to understand the payoff from these positions. There are different combinations of positions in futures market on standalone basis and futures positions combined with cash position in OTC market. Examples of such positions would be:

- Combined position of futures and underlying export trade remittance
- Combined position of futures and underlying import trade remittance

Go through the examples given in the Nism book to understand the payoff of the above position under different circumstances.

Currency Futures are used for hedging for following purposes:

- Payment in foreign currency for travel abroad, for education, etc.
- Payment of loan availed in foreign currency
- Investment in assets outside India or repatriation of capital invested outside India
- Payment of loan installments in INR by a person earning in foreign currency

Investment in Gold

A high net worth individual in India is keen to invest in gold with a view of rising gold prices against USD. He invested via ETF gold contract which are exchange traded and priced in INR. After three months of investment in ETF, gold appreciated by 15% against USD while ETF appreciated by only 10%. The low appreciation of ETF was because of 5% appreciation in INR against USD in last three months. Thus to remove the USD INR risk in the ETF contract The investor could short USDINR currency futures for an amount equal to the amount of investment in ETF and for a tenor for which he intends to stay invested in gold ETF. This would reduce the USDINR risk embedded in gold ETF.

Investment in assets outside India and repatriation of profit and capital

Currency futures could also be effectively used to hedge the currency risk when investing abroad. A person has invested USD 100,000 in US equities with a view of appreciation of US stock market. In next one year, his investments in US equities appreciated in value to USD 115,000. The investor decided to sell off his portfolio and repatriate the capital and profits to India. However, at the time of converting USD to INR, he received an exchange price of 64 as against 67 which was the price at which he had converted INR to USD at the time of investing abroad. The investor may short USDINR currency futures for one year. This would allow him to sell USD to INR at a contracted price via futures contact and thus remove currency risk from the portfolio.

Use of currency futures for speculation

A trader has a view that given the buoyant economic condition in India and likelihood of drop in inflation, the INR may appreciate in next six months from current level of 66 to 64. To execute the view, he shorts 100 contracts at a price of 67.5. As expected, INR appreciated. At the expiry of the contract, the settlement price was 64.5. Since the settlement price was lower than the contracted price and the trader had shorted the futures, he made profit. The amount of profit would be equal to the difference in the contracted price and the settlement price. Thus the trader made a profit of Rs 3 per USD.

Use of currency futures for arbitrageurs

A trader notices that 6 month USDINR currency futures was trading at 65.98/66.00 while 6 month forward in OTC market, for same maturity as that of currency futures contract, was available at 65.85/65.86. The trader would short currency futures at price of 65.98 and go long in currency forward at 65.86. At the time of settlement, trader loses 1.02 on futures and makes a profit of 1.14 on OTC forward contract. Thus he makes an arbitrage profit of 0.12 per USD.

Triangular Arbitrage

Triangular arbitrage involves identifying and exploiting the arbitrage opportunity resulting from price differences among three different currencies in the forex market. It involves three trades: exchanging the first currency for a second currency, exchanging the second currency for a third currency and exchanging the third currency for the first currency. Like all other arbitrage opportunities, this triangular arbitrage also possible only when the exchange rates are not aligned with the implicit cross exchange rate. Please note that profitable triangular arbitrage is very rarely possible because when such opportunity arises, traders execute trades that take advantage of the imperfections and prices adjust up or down until the opportunity disappears. Even when those opportunities appear for a very brief period of time, the opportunity (price disparity) may be very small (around 1 basis point or so in many cases) making it not a profitable opportunity after factoring in the transaction costs and taxes. Moreover, there is also a risk of adverse price movement while the arbitrageur is still setting up the arbitrage position.

Trading spreads using currency futures

Spread refers to difference in prices of two futures contracts. A good understanding of spread relation in terms of pair spread is essential to earn profit. Intra-Currency Pair Spread (also called as “calendar spread”): An intra-currency pair spread consists of one long futures and one short futures contract. Both have the same underlying but different maturities. Inter-Currency Pair Spread: An inter–currency pair spread is a long-short position in futures on different underlying currency pairs. Both typically have the same maturity.

Limitations of currency futures for hedgers

Exchange traded currency futures contracts are standard contracts which are settled in cash i.e. without delivery of currencies. For hedgers, there might be a mismatch in the timing of settlement or cancellation of futures contract and the timing of actual trade remittance. This timing mismatch may result in small loss of value as compared to OTC forward contract. However, the transparency, small lot size and ease of trade execution may offset it.

V. Trading in Currency Futures

Currently currency futures contracts on four INR pairs i.e., USDINR, EURINR, GBPINR and JPYINR and on three cross currency pairs i.e., EURUSD, GBPUSD and USDJPY are being traded on the recognized stock exchanges.

- **Base price** of the futures contracts on the first day of its life shall be the theoretical futures price. The base price of the contracts on subsequent trading days will be the daily settlement price of the previous trading day.
- The **closing price** for a futures contract is currently calculated as the last half an hour weighted average price of the contract.
- The **tenor of a contract** means the period when the contract will be available for futures trading, i.e. the cycle" of the contract.

Entities in the Trading System

Trading Members: Trading members are members of an authorized Exchange. They can trade either on their own account or on behalf of their clients including participants. The exchange assigns a trading member ID to each trading member. Each user of a trading member must be registered with the exchange and is assigned a unique user ID. The unique trading member ID functions as a reference for all orders/trades of different users.

Clearing Members (CM): Clearing members are members of the Clearing Corporation. They carry out risk management activities and confirmation/inquiry of participant trades through the trading system.

Trading-cum-Clearing Member (TCM): A member with a right to trade on its own account as well as on account of its clients. He can clear and settle the trades for self and for others through the Clearing House.

Professional Clearing Members (PCM): A professional clearing member is a clearing member who is not a trading member. Typically, banks and custodians become professional clearing members and clear and settle for their trading members and participants.

Participants: A participant is a client of a trading member- like financial institutions. These clients may trade through multiple trading members but settle through a single clearing member.

Types of Orders

A. Time Conditions

- **Day order:** A day order, as the name suggests is an order which is valid for the day on which it is entered.
- **Immediate or Cancel (IOC):** An IOC order allows the user to buy or sell a contract as soon as the order is released into the system, failing which the order is cancelled from the system.

B. Price Conditions

- **Market Price:** Market orders are orders for which no price is specified at the time the order is entered. For the buy order placed at market price, the system matches it with the readily available sell order in the order book. For the sell order placed at market price, the system matches it with the readily available buy order in the order book.
- **Limit Price**: An order to buy a specified quantity of a security at or below a specified price, or an order to sell it at or above a specified price (called the limit price).
- **Stop Loss:** This facility allows the user to release an order into the system, after the market price of the security reaches or crosses a threshold price.

C. Other Conditions

- **Pro:** 'Pro' means that the orders are entered on the trading member's own account.
- **Cli:** 'Cli' means that the trading member enters the orders on behalf of a client.

Price Limit Circuit Filter

With the view to ensure orderly trading and market integrity, SEBI prescribes stock exchanges to implement a mechanism of Dynamic Price Bands so as to prevent acceptance of orders placed beyond the price limits set by the stock exchanges. These dynamic price bands are applicable to all currency futures positions including the cross currency futures contracts.

Contracts with tenure up to 6 months	± 3% of the theoretical price or the previous day closing price, as applicable
Contracts with tenure greater than 6 months	± 5% of the theoretical price or the previous day closing price, as applicable

The exchanges relax the dynamic price bands in increments of 1% as and when a market-wide trend is observed.

VI. Clearing, Settlement and Risk Management in Currency Futures

- Clearing means computing open positions and obligations of clearing members in the trading system.
- Settlement means honoring the actual pay in or pay out to settle the contract.

Clearing entities

Clearing Members: In the Currency Derivatives segment, trading-cum-clearing member clear and settle category of members, called professional clearing members (PCM) who clear and settle trades executed by TMs their own trades as well as trades of other trading members (TMs). Besides, there is a special.

Clearing Banks: Funds settlement takes place through clearing banks. For the purpose of settlement all clearing members are required to open a separate bank account with the Clearing Corporation designated clearing bank for Currency Derivatives segment.

Clearing Mechanism

The clearing mechanism essentially involves working out open positions and obligations of clearing (trading-cum-clearing/professional clearing) members. This position is considered for exposure and daily margin purposes. The open positions of Clearing Members (CMs) are arrived at by aggregating the open positions of all the TMs and all custodial participants clearing through him. A TM's open position is arrived at as the summation of his proprietary open position and clients' open positions. While entering orders on the trading system, TMs are required to identify the orders, whether proprietary (if own trades) or client (if entered on behalf of clients) through 'Pro/Cli' indicator provided in the order entry screen. Proprietary positions are calculated on net basis (buy - sell) for each contract. Clients' positions are arrived at by summing together net (buy - sell) positions of each individual client. Please note that positions are only netted for each client and not netted across clients and are rather added up across clients. A TM's open position is the sum of proprietary open position, client open long position and client open short position.

Settlement Mechanism

Mark-to-Market settlement (MTM Settlement): futures contracts for each member are marked to market to the daily settlement price of the relevant futures contract at the end of each day. The profits/losses could be computed differently for different types of positions. The computational methodology is given below:

- For squared off position: The buy price and the sell price for contracts executed during the day and squared off.
- For positions not squared off: The trade price and the day's settlement price for contracts executed during the day but not squared up.
- For brought forward positions: The previous day's settlement price and the current day's settlement price for brought forward contracts.
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Final Settlement for Futures: On the last trading day of the futures contracts, after the close of trading hours, the Clearing Corporation marks all positions of a CM to the final settlement price and the resulting profit/loss is settled in cash. Final settlement loss/profit amount is debited/ credited to the relevant CM's clearing bank account on T+2 working day following last trading day of the contract (contract expiry day). The final settlement price is the RBI reference rate for the last trading day of the futures contract.

Margin Requirements and Types

Since futures is a leveraged position, it is imperative to have very effective margining framework at exchange to avoid any systemic failure during periods of high volatility. Margins also play the role of acting as a deterrent to excessive speculation. The different types of margins collected by the Exchanges are as follows:

Initial Margin: The initial security deposit paid by a member is considered as his initial margin for the purpose of allowable exposure limits. Initially, every member is allowed to take exposures up to the level permissible on the basis of the initial deposit. The Initial Margin requirement is based on a worst case loss of a portfolio of an individual client across various scenarios of price changes.

Portfolio Based Margin: The Standard Portfolio Analysis of Risk (SPAN) methodology is adopted to take an integrated view of the risk involved in the portfolio of each individual client comprising his positions in futures contracts across different maturities.

Real Time computation: The computation of worst scenario loss has two components. The first is the valuation of the portfolio under the various scenarios of price changes. At the second stage, these scenario contract values are applied to the actual portfolio positions to compute the portfolio values and the initial margin. The latest available scenario contract values are applied to member/client portfolios on a real-time basis.

Calendar spread margin: For a calendar spread position, the extreme loss margin is charged on one-third of the mark-to-market value of the far month contract.

Extreme Loss Margin: Extreme loss margin is computed as percentage of the mark-to-market value of the Gross Open Position. It shall be deducted from the liquid assets of the Clearing Member.

Liquid Net Worth: The initial margin and the extreme loss margin are deducted from the liquid assets of the clearing member. The clearing member's liquid net worth after adjusting for the initial margin and extreme loss margin requirements must be at least Rs. 50 lacs at all points in time.

Liquid Assets: The liquid assets for trading in currency futures are maintained separately in the currency futures segment of the clearing corporation.

VII. Exchange Traded Currency Options

Option: It is a contract between two parties to buy or sell a given amount of asset at a pre- specified price on or before a given date.

- The right to buy the asset is called call option and the right to sell the asset is called put option.
- The pre-specified price is called as strike price and the date at which strike price is applicable is called expiration date.
- The difference between the date of entering into the contract and the expiration date is called time to maturity.
- The party which buys the rights but not obligation and pays premium for buying the right is called as option buyer and the party which sells the right and receives premium for assuming such obligation is called option seller/ writer.
- The price which option buyer pays to option seller to acquire the right is called as option price or option premium
- The asset which is bought or sold is also called as an underlying or underlying asset.

Buying an option is also called as taking a long position in an option contract and selling is also referred to as taking a short position in an option contract.

Difference between futures and options

The difference between two contracts is that in futures both the parties are under right as well as obligation to buy or sell and therefore face similar risk. Whereas in options, the buyer has only rights and no obligation and therefore he faces only the risk of premium paid and option seller is under obligation to buy or sell and therefore faces unlimited risk. At the same time, the option buyer has chances to get unlimited upside and the option seller has limited upside equal to the premium received.

The call option buyer would exercise the option only if the price of underlying asset is higher than the strike price and premium paid. Similarly the put option buyer would exercise the option if the price of the underlying asset is less than the strike price and the premium paid.

Options in financial markets

Options market in India: Exchange traded equity index options commenced trading in India on June 4, 2001 followed by single stock specific options on July 2001. Since then, the volume in options is on a continuous growth path. RBI allowed banks to offer foreign currency-INR European options to its customers with effect from July 7, 2003. Banks were allowed to run option book subject to their meeting certain parameters with respect to net worth, profitability, capital adequacy and NPA%. The currency options have now been also allowed for trading on exchanges. The exchanges started trading in currency options from November 10, 2010.

Difference between OTC options and exchange-traded options: In OTC option market, the select scheduled commercial banks are permitted to be market makers in currency options market and resident Indians are allowed to be net buyer of options i.e., they should be paying a net premium when undertaking an option structure and they should not be the net receiver of premium. While for an exchange traded option, the restriction on amount and tenor are not related to the underlying FX transaction but are restricted by open interest and total volume. In terms of currency pair, in OTC market the client can get quotes for any currency pair and in exchange traded market the prices are currently available only for USDINR option contracts.

- European options can be exercised by the buyer of the option only on the expiration date. In India, all the currency options are of European type.
- American options can be exercised by the buyer any time on or before the expiration date. Currently American options are not allowed in currencies in India.

Moneyness of an option indicates whether the contract would result in a positive cash flow, negative cash flow or zero cash flow for the option buyer at the time of exercising it. Based on these scenarios, moneyness of option can be classified in three types:

In the money (ITM) option: An option is said to be in the money, if on exercising it, the option buyer gets a positive cash flow.

Out of the money (OTM) option: An option is said to be out of the money, if on exercising it, the option buyer gets a negative cash flow.

At the money (ATM) option: An option is said to be at the money if spot price is equal to the strike price.

Option Value

Intrinsic value: The intrinsic value of an option is the difference between spot price and the strike price. For a call option, the intrinsic value is Max where K is strike price and St is the spot price of the asset.
Time value: The difference between option premium and intrinsic value is time value of option. The time value is directly proportional to the length of time to expiration date of the option. Longer the time to expiration, higher is time value.

Option Greeks

- **Delta** is the rate of change of option price with respect to the price of the underlying asset.
- **Vega** measures the rate of change of option value to volatility of price of the underlying asset.
- **Theta** measures the change in the value of the option with respect to passage of time.
- **Rho** measures sensitivity of option value to the risk free rate.

Option pricing methodology

There are two common methodologies for pricing options:

- Black and Scholes: This methodology is more analytical, is faster to compute and is mainly used to price European options.
- Binomial pricing: This methodology is more computational, taken more computing power and is mainly used to price American options.

Option Pay-Offs

Payoff means return from the derivative strategy with change in the spot price of the underlying. Option strategies result in non-linear pay offs (that is not a straight line, but either curve or a line with a sharp bend) because of the optionality of options, which is the right without obligation for the buyer.

Vanilla options: These are four basic option positions, which are long call, long put, short call and short put option. Please note that in all the exchange traded currency option contracts, the final settlement of the contracts happen at RBI reference rate. Following are the four types of options:

- Buying a call option or going long call option
- Selling a call option or going short on call option
- Buying a put option or going long put option
- Selling a put option or going short on put option

Please go through the pay-off examples give in the Nism book to understand them better.

VIII. Account Taxation

Client has to maintain two separate accounting heads for initial margin and mark to market margin. These heads could be called as:

- Initial margin-currency futures
- Mark to market- currency futures

Accounting entries for live positions:

The accounting entries have to be understood separately for any pay-in or pay-out for positions which are live and for positions which are expired or cancelled.

For pay-out: Any cash lay out on account of initial margin or mark to market has to be debited to respective heads i.e., Initial margin-currency futures or Mark to market- currency futures and bank account has to be credited.

For pay-in: Any cash inflow on account of mark to market settlement, mark to market- currency futures has to be credited and Bank account has to be debited.

Accounting entries for expired or cancelled positions

At the expiry of a series of currency futures, the profit/loss should be calculated as the difference between final settlement and contract prices of all the contracts in the series and it should be passed through the profit and loss statement of the client. However, where a balance exist in the provision account created for any anticipated loss, any loss arising on final settlement should be first charged to the provision account and the balance to the profit and loss account.

Accounting entries in case of default by a client

When a client defaults in making payments in respect of a daily settlement, the contract is closed out. The amount not paid by the client is adjusted against the initial margin. In the books of client, the amount so adjusted should be debited to “Mark to market currency futures accounts” with a corresponding credit to “Initial margin- currency futures account”.

Disclosure Requirements

The amount of bank guarantee and book value as also the market value of securities lodged should be disclosed in respect of contracts having open positions at the year end, where initial margin money has been paid by way of bank guarantee and/or lodging of securities.

IX. Regulatory Framework for Currency Derivatives

Securities Contracts (Regulation) Act, 1956 [SC(R)A]

The Act aims to prevent undesirable transactions in securities. It governs the trading of securities in India. The term "securities" has been defined in the Section 2(h) of SCRA.

RBI-SEBI standing technical committee on exchange traded currency and interest rate derivatives

With a view to enable entities to manage volatility in the currency market, RBI on April 20, 2007 issued comprehensive guidelines on the usage of foreign currency forwards, swaps and options in the OTC market. At the same time, RBI also set up an Internal Working Group to explore the advantages of introducing currency futures. The Report of the Internal Working Group of RBI submitted in April 2008, recommended the introduction of exchange traded currency futures. With the expected benefits of exchange traded currency futures, it was decided in a joint meeting of RBI and SEBI on February 28, 2008, that an RBI-SEBI Standing Technical Committee on Exchange Traded Currency and Interest Rate Derivatives would be constituted.

Foreign Exchange Management Act, 1999 - Provisions

The Foreign Exchange Management (Foreign Exchange Derivative Contracts) Regulations, 2000 (Notification No. FEMA 25/RB-2000 dated May 3, 2000) was amended by RBI in exercise of the powers conferred by clause (h) of sub-section 2 of Section 47 of the Foreign Exchange Management Act, 1999 (Act 42 of 1999). This amendment incorporated a new clause after clause (v) in regulation 2 reading "(va) 'Currency Futures' means a standardized foreign exchange derivative contract traded on a recognized stock exchange to buy or sell one currency against another on a specified future date, at a price specified on the date of contract, but does not include a forward contract."

Regulatory framework for exchanges

A recognized stock exchange having nationwide terminals or a new exchange recognized by SEBI may set up currency futures segment after obtaining SEBI's approval. The currency futures segment should fulfill the following eligibility conditions for approval:

- The trading should take place through an online screen-based trading system.
- The clearing of the currency derivatives market should be done by an independent Clearing Corporation.
- The exchange must have an online surveillance capability which monitors positions, prices and volumes in real time so as to deter market manipulation.
- The exchange shall have a balance sheet net worth of at least Rs. 100 crores.
- Information about trades, quantities, and quotes should be disseminated by the exchange in real time to at least two information vending networks which are accessible to investors in the country. The per-half-hour capacity of the computers and the network should be at least 4 to 5 times of the anticipated peak load in any half hour, or of the actual peak load seen in any half-hour during the preceding six months, whichever is higher. This shall be reviewed from time to time on the basis of experience. The segment should have at least 50 members to start currency derivatives trading. The exchange should have arbitration and investor grievances redressal mechanism operative from all the four areas/regions of the country. The exchange should have adequate inspection capability. If already existing, the exchange should have a satisfactory record of monitoring its members, handling investor complaints and preventing irregularities in trading.

Regulatory framework for clearing corporation

- The Clearing Corporation must ensure that all trades are settled by matching of buyers and sellers
- The Clearing Corporation should enforce the stipulated margin requirements, mark to market settlement, electronic funds transfer, etc.
- A separate settlement guarantee fund should be created and maintained for meeting the obligations arising out of the currency futures segment. A separate investor protection

X. Codes of Conduct and Investor Protection Measures

Adherence to SEBI codes of conduct for brokers/ sub-brokers

Code of Conduct for Brokers

General

1. Integrity
2. Exercise of due skill and care
3. Manipulation: A broker should not indulge in manipulative, fraudulent or deceptive transactions or schemes or spread rumors with a view to distorting market equilibrium or making personal gains.
4. Malpractices: A broker should not create false market either singly or in concert with others or indulge in any act detrimental to the investors' interest or which leads to interference with the fair and smooth functioning of the market.
5. Compliance with statutory requirements'

Duty to client

1. Execution of orders
2. Issue of contract note
3. Breach of trust:
4. Business and commission: A broker should not encourage sales or purchases of securities with the sole object of generating brokerage or commission.
5. Business of defaulting client: A broker should not deal or transact business knowingly, directly or indirectly or execute an order for a client who has failed to carry out his commitments in relation to securities with another broker.
6. Fairness to client
7. Investment Advice

- **A broker should extend fullest cooperation to other brokers in protecting the interests of his clients.**
- **A broker should carry out his transactions with other brokers and should comply with his obligations in completing the settlement of transactions with them.**

Note: The code of conduct of sub-brokers is majorly similar to that of brokers

Adherence to codes of conduct specific to currency derivatives segment

General Principles

- Adequate Disclosures
- No guarantee against a loss
- Professionalism
- Adherence to Trading practices
- Honesty and Fairness
- Capabilities

Trading Principles

- Trading Members/Participants shall ensure that the fiduciary and other obligations imposed on them and their staff.
- A Trading Member shall be responsible for all the actions including trades originating through.
- No Trading Member or person associated with a Trading Member shall make improper use of constituent's securities/positions in derivatives contracts or funds.
- When entering into or arranging a transaction, Trading Members must ensure that at all times great care is taken not to misrepresent in any way, the nature of transaction.

General Guidelines

- Shielding or assisting
- Suspended Derivative contracts
- Misleading Transactions
- Use of information obtained in Fiduciary capacity

SEBI Complaints Redress System (SCORES)

SEBI launched a centralized web based complaints redress system (SCORES). This would enable investors to lodge and follow up their complaints and track the status of redressal of such complaints from anywhere. This would also enable the market intermediaries and listed companies to receive the complaints from investors against them, redress such complaints and report redressal. All the activities starting from lodging of a complaint till its disposal by SEBI would be carried online in an automated environment and the status of every complaint can be viewed online at any time. An investor, who is not familiar with SCORES or does not have access to SCORES, can lodge complaints in physical form. However, such complaints would be scanned and uploaded in SCORES for processing. SCORES is web enabled and provides online access 24 x 7. It would facilitate easy retrieval and tracking of complaints at any time.

Arbitration

SEBI has instructed the exchange to have arbitration committees so that differences, disputes and claims between trading members and investors can be settled effectively and in a short time. Arbitration is also governed by Exchange Bye-laws. Arbitration is a quasi judicial process of settlement of disputes between Trading Members, Investors, Sub-brokers & Clearing Members and between Investors and Issuers (Listed Companies). Generally the application for arbitration has to be filed at the Arbitration Centers established by the exchanges. The parties to arbitration are required to select the arbitrator from the panel of arbitrators provided by the Exchange. The arbitrator conducts the arbitration proceeding and passes the award normally within a period of four months from the date of initial hearing.

Combination Strategies

Combination strategies mean use of multiple options with same or different strikes and maturities. Numerous strategies can be worked out depending on the view on the market, risk appetite and objective. Following are some of the widely known combination strategies:-

View: Moderately Bullish or Bearish

- Bull Call Spread
- Bull Put Spread
- Bear Put Spread
- Bear Call Spread

View: Range bound view on USDINR or a break out view

- Short Strangle
- Short Straddle
- Long Butterfly

View: Break out view of USDINR

- Long Straddle
- Long Straddle
- Short Butterfly

Strategies complimenting existing positions in futures market

- Covered Call
- Covered Put
- Protective Call
- Protective Put

PLEASE NOTE, THESE ARE SHORT IMPORTANT NOTES EXTRACTED FROM THE NISM BOOK. ITS ADVISABLE TO READ THE NISM BOOK TO GET FULL KNOWLEDGE.

ALL THE VERY BEST FOR YOUR EXAMS

Team PASS4SURE