Currency Derivatives

NiSM NATIONAL INSTITUTE OF SECURITIES MARKETS
An Educational Initiative of SEBI

Workbook for
NISM-Series-I:
Currency Derivatives
Certification Examination

National Institute of Securities Markets
www.nism.ac.in

This workbook has been developed to assist candidates in preparing for the National Institute of Securities Markets (NISM) NISM-Series-I: Currency Derivatives Certification Examination (NISM-Series-I: CD Examination).

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Dr. C.K.G.Nair
Director

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Acknowledgement

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About NISM Certifications

The School for Certification of Intermediaries (SCI) at NISM is engaged in developing and administering Certification Examinations and CPE Programs for professionals employed in various segments of the Indian securities markets. These Certifications and CPE Programs are being developed and administered by NISM as mandated under Securities and Exchange Board of India (Certification of Associated Persons in the Securities Markets) Regulations, 2007.

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Certification creates quality market professionals and catalyzes greater investor participation in the markets. Certification also provides structured career paths to students and job aspirants in the securities markets.

About the NISM-Series-I: Currency Derivatives Certification Examination

The examination seeks to create a common minimum knowledge benchmark for persons working in the currency derivative segment, in order to enable a better understanding of currency markets and exchange traded currency derivatives products, better quality investor service, operational process efficiency and risk controls.

Examination Objectives

On successful completion of the examination the candidate should:

- Know the basics of currency markets and specifically Exchange Traded Currency Derivatives markets.
- Understand the trading, clearing and settlement mechanisms related to Exchange Traded Currency Derivatives markets and basic investment strategies that use currency futures and options products.
- Know the regulatory environment in which the Exchange Traded Currency Derivatives markets operate in India.

Assessment Structure

The NISM-Series-I: Currency Derivatives Certification Examination (NISM-Series-I: CD Examination) will be of 100 marks consisting of 100 questions of 1 mark each and should be completed in 2 hours. There will be negative marking of 25% of the marks assigned to each question. The passing score for the examination is 60%.

How to register and take the examination

To find out more and register for the examination please visit *www.nism.ac.in*

Important

- Please note that the Test Centre workstations are equipped with either Microsoft Excel or Open Office Calc. Therefore, candidates are advised to be well versed with both of these softwares for computation of numericals.
- The sample questions and the examples discussed in the workbook are for reference purposes only. The level of difficulty may vary in the actual examination.

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Chapter 1: Introduction to Currency Markets

LEARNING OBJECTIVES:

After studying this chapter, you should know about:

- History of foreign exchange markets and overview of international currency markets
- Major currency pairs in forex trading
- Basics of currency markets Peculiarities in India
- Exchange rate arithmetic
- Economic indicators and its impact on currency markets

1.1 Brief History of Foreign Exchange Markets

The current currency rate mechanism has evolved over thousands of years of the world community trying with various mechanism of facilitating the trade of goods and services. Initially, the trading of goods and services was by barter system where in goods were exchanged for each other. For example, a farmer would exchange wheat grown on his farmland with cotton with another farmer. 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. For example, how does a dairy farmer exchange his cattle for few liters of edible oil or one kilogram of salt? The farmer has no way to divide the cattle! Similarly, suppose wheat is grown in one part of a country and sugar is grown in another part of the country, the farmer has to travel long distances every time he has to exchange wheat for sugar. Therefore, the need to have a common medium of exchange resulted in the innovation of money.

People tried various commodities as the medium of exchange ranging from food items to metals. Gradually metals became more prominent medium of exchange because of their ease of transportation, divisibility, certainty of quality and universal acceptance. People started using metal coins as medium of exchange. Amongst metals, gold and silver coins were most prominent and finally gold coins became the standard means of exchange. 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. This system of book entry of coins against paper was the start of paper currency.

With time, countries started trading across borders as they realized that everything cannot be produced in each country or cost of production of certain goods is cheaper in certain countries than others. 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. Each country has its own “brand” alongside its flag. When money is branded, it is called “currency”. Whenever there is a cross-border trade, there is need to

exchange one brand of money 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. This led to the question of determining relative value of two currencies. Different systems were tried in past to arrive at relative value of two currencies. 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. As per this process, central banks issue paper currency and hold equivalent amount of gold in their reserve. The value of each currency against another currency was derived from gold exchange rate. For example, if one unit of gold is valued at Indian Rupees (INR) 10,000 and US dollar (USD) 500 than the exchange rate of INR versus USD would be 1 USD = INR 20. This mechanism of valuing currency was called as gold standard.

With further growth in international trade, changing political situations (world wars, civil wars, etc.) and situations of deficit/ surplus on trade account forced countries to shift from gold standard to floating exchange rates. In the floating exchange regime, central bank's intervention was a popular tool to manage the value of currency to maintain the trade competitiveness of the country. Central bank would either buy or sell the local currency depending on the desired direction and value of local currency.

Fiat money is a government-issued currency that is not backed by a physical commodity, such as gold or silver, but rather by the government that issued it. The value of fiat money is derived from the relationship between supply and demand and the stability of the issuing government, rather than the worth of a commodity backing it. Most modern paper currencies are fiat currencies, including the U.S. dollar, the euro, and other major global currencies. The gold standard is not currently used by any government. Britain stopped using the gold standard in 1931 and the U.S. followed suit in 1933 and abandoned the remnants of the system in 1973. The gold standard was completely replaced by fiat money, a term to describe currency that is used because of a government's order, or fiat, that the currency must be accepted as a means of payment. In the U.S., for instance, the US dollar is fiat money, and for India, it is the Indian rupee.

During 1944-1971, countries adopted a system called Bretton Woods System. This system was a blend of gold standard system and floating rate system. As part of the system, all currencies were pegged to USD at a fixed rate and USD value was pegged to gold. The US guaranteed to other central banks that they can convert their currency into USD at any time and USD value will be pegged to value of gold. Countries also agreed to maintain the exchange rate in the range of plus or minus 1% of the fixed parity with US dollar. With adoption of this system, USD became the dominant currency of the world. The Bretton Woods Agreement remains a significant event in world financial history. The two Bretton Woods Institutions it created in the International Monetary Fund and the World Bank played an important part in helping to rebuild Europe in the aftermath of World War II.

By 1973 the Bretton Woods System had collapsed. Countries were then free to choose any exchange arrangement for their currency, except pegging its value to the price of

gold. They could, for example, link its value to another country's currency, or a basket of currencies, or simply let it float freely and allow market forces to determine its value relative to other countries' currencies. Hence, there was the need of a market where the exchange rates will be determined on a real time basis based on the information flowing through the markets. Since the Forex market was where currencies have always been exchanged, it was well poised to take up this role. The Forex market therefore came into prominence when the world went off the gold standard. This is because during the gold standard, there were no exchange rates to determine! It is only after gold was removed as the common denominator between currencies that all of them became freely floating and there was a need to value them against one another. Developed countries gradually moved to a market determined exchange rate (For e.g. USD, EUR, JPY etc.) and developing countries adopted either a system of pegged currency or a system of managed rate. In pegged system, the value of currency is pegged to another currency or a basket of currencies. The benefit of pegged currency is that it creates an environment of stability for foreign investors as they know the value of their investment in the country at any point of time would be fixed. Although in long run it is difficult to maintain the peg and ultimately the central bank may change the value of peg or move to a managed float or free float. In managed float, countries have controls on flow of capital and central bank intervention is a common tool to contain sharp volatility and direction of currency movement.

A clean float, also known as a pure exchange rate, occurs when the value of a currency, or its exchange rate, is determined purely by supply and demand in the market. A clean float is the opposite of a dirty float (also known as managed float), which occurs when government rules or laws affect the pricing of currency. A dirty float (managed float) is an exchange rate regime in which the exchange rate is neither entirely free (or floating) nor fixed. Most countries intervene from time to time to influence the price of their currency in what is known as a managed float system. For example, a central bank might let its currency float between an upper and lower price boundary. If the price moves beyond these limits, the central bank may buy or sell large lots of currency in an attempt to rein in the price. For e.g. If domestic currency quickly depreciates against USD, central bank may sell dollar and buy local currency.

1.2 Major Currencies and Currency Pairs

A currency pair is the dynamic quotation of the relative value of a currency unit against the unit of another currency in the foreign exchange market. Currency quotations use the abbreviations for currencies that are prescribed by the International Organization for Standardization (ISO) in standard ISO 4217. ISO currency codes are the three-letter alphabetic codes that represent the various currencies used throughout the world. When combined in pairs, they make up the symbols and cross rates used in currency trading.

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. Amongst these currencies the most

active currency pairs are: EURUSD, USDJPY, GBPUSD, AUDUSD, USDCAD, USDCNY and USDCHF. According to Bank for International Settlement (BIS) survey of April 2019, the share of different currency pairs in global average daily foreign exchange market turnover is as given below:

Currency	Share (%)
EUR/USD	24.0
USD/JPY	13.2
GBP/USD	9.6
AUD/USD	5.4
USD/CAD	4.4
USD/CNY	4.1
USD/CHF	3.5
USD/HKD	3.3
USD/INR	1.7
USD/others	19.1
Others/others	11.7
Total	100

Source: BIS Triennial Central Bank Survey 2019

*Net-net basis, daily averages in April 2019, in per cent

Currency pairs that are not associated with the U.S. dollar are referred to as minor currencies or crosses. These are usually derived from major non-USD currencies like EUR, GBP, and JPY. These pairs have slightly wider spreads and are not as liquid as the majors, but they are sufficiently liquid markets, nonetheless. For instance, Euro crosses include EUR/GBP, EUR/JPY, and EUR/CHF. Exotic Pairs stand out from these pairs because they contain a major currency (usually USD) and a currency from a developing or emerging market. This exposes traders to currencies from Asia, Africa, the Middle East, and more. An example of an exotic currency pairs are USD/TRY (U.S. dollar/Turkish Lira), USD/SEK (US Dollar/Swedish Krona), EUR/TRY (Euro/Turkish Lira) etc.

1.2.1 Major Currencies

US Dollar (USD)

U.S. dollar (USD) is the home denomination of the world's largest economy, the United States. U.S. banknotes are issued in the form of Federal Reserve Notes, popularly called greenbacks due to their predominantly green color. The monetary policy of the United States is conducted by the Federal Reserve System, which acts as the nation's central bank. It was founded in 1913 under the Federal Reserve Act in order to furnish an elastic currency for the United States and to supervise its banking system. As with any currency, the dollar is supported by economic fundamentals, including gross domestic product (GDP), manufacturing and employment reports.

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.

In addition, the widespread trading of the US Dollar reflects its use as a “vehicle” currency in foreign exchange transactions, a use that reinforces its international role in trade and finance. For most pairs of currencies, the market practice is to trade each of the two currencies against a common third currency as a vehicle, rather than to trade the two currencies directly against each other. The vehicle currency used most often is the US Dollar, although very recently EUR also has become an important vehicle currency.

Thus, a trader who wants to shift funds from one currency to another, say from Indian Rupees to Philippine Pesos, will probably sell INR for US Dollars and then sell the US Dollars for Pesos. Although this approach results in two transactions rather than one, it may be the preferred way, since the US Dollar/INR market and the US Dollar/Philippine Peso market are much more active and liquid and have much better information than a bilateral market for the two currencies directly against each other. By using the US Dollar or some other currency as a vehicle, banks and other foreign exchange market participants can limit more of their working balances to the vehicle currency, rather than holding and managing many currencies, and can concentrate their research and information sources on the vehicle currency.

Use of a vehicle currency greatly reduces the number of exchange rates that must be dealt with in a multilateral system. In a system of 10 currencies, if one currency is selected as the vehicle currency and used for all transactions, there would be a total of nine currency pairs or exchange rates to be dealt with (i.e. one exchange rate for the vehicle currency against each of the others), whereas if no vehicle currency were used, there would be 45 exchange rates to be dealt with. In a system of 100 currencies with no vehicle currencies, potentially there would be 4,950 currency pairs or exchange rates [the formula is: n(n-1)/2]. Thus, using a vehicle currency can yield the advantages of fewer, larger, and more liquid markets with fewer currency balances, reduced informational needs, and simpler operations.

Euro (EUR)

Euro is the currency of 19 European Union and over 343 million Europeans as of 2019. Like the US Dollar, the Euro has a strong international presence and second-largest and second-most traded currency in the international markets for the related different types of transactions after the United States dollar. The euro is managed and administered by the Frankfurt-based European Central Bank (ECB) and the Eurosystem (composed of the central banks of the eurozone countries). As an independent central bank, the ECB has sole authority to set monetary policy. The Eurosystem participates in the printing, minting and distribution of notes and coins in all member states, and the operation of the eurozone payment systems.

Japanese Yen (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. It is also widely used as a third reserve currency after the US dollar and the Euro.

British Pound/Pound Sterling (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. Sterling is the fourth most-traded currency in the foreign exchange market, after the United States Dollar, the Euro, and the Japanese Yen. The currency is heavily traded against the Euro and the US Dollar, but less presence against other currencies. It is also the fourth most-held reserve currency in global reserves.

Swiss Franc (CHF)

The Swiss Franc is the currency of Switzerland and is represented with the symbol CHF. The Swiss franc is considered a safe-haven currency. Given the stability of the Swiss government and its financial system, the Swiss franc usually faces a strong upward pressure stemming from increased foreign demand. Switzerland's independence from the European Union also makes it somewhat immune to any negative political and economic events that occur in the region.

Indian Rupee (INR)

The Indian rupee is the official currency of India. The rupee is subdivided into 100 paise. The issuance of the currency is controlled by the Reserve Bank of India. The Reserve Bank manages currency in India and derives its role in currency management on the basis of the Reserve Bank of India Act, 1934. The Indian rupee has a market-determined exchange rate. However, the Reserve Bank of India trades actively in the USD/INR currency market to impact effective exchange rates. Thus, the currency regime in place for the Indian rupee with respect to the US dollar is a de facto controlled exchange rate. This is sometimes called a "managed float". Other rates (such as the EUR/INR and JPY/INR) have the volatility typical of floating exchange rates. Unlike China, India have not followed a policy of pegging the INR to a specific foreign currency at a particular exchange rate. RBI intervention in currency markets is solely to ensure low volatility in exchange rates, and not to influence the rate (or direction) of the Indian rupee in relation to other currencies.

According to Bank for International Settlement (BIS) survey of April 2019, the percentage share of various currencies in the global average daily foreign exchange market turnover is as follows:

Currency	% Share
USD	88.3
EURO	32.3
JPY	16.8

GBP	12.8
INR	1.7
Others	48.1
TOTAL	200*

* As two currencies are involved in each transaction, the sum of shares in individual currencies will total to 200%.

*Net-net basis, daily averages in April 2019, in per cent

Source: BIS Triennial Central Bank Survey 2019

1.2.2 Overview of International Currency Markets

The international currency market is a market in which participants from around the world buy and sell different currencies. Participants include banks, corporations, central banks, investment management firms, hedge funds, retail forex brokers, and investors. The international currency market is important because it helps to facilitate global transactions, including loans, investments, corporate acquisitions, and global trade.

Foreign Exchange Market (Forex) is an inter-bank market that took shape in 1971 when global trade shifted from fixed exchange rates to floating rate regimes. Forex transactions are a set of transactions among forex market agents involving exchange of specified sums of money in a currency unit of any given nation for currency of another nation at an agreed rate as of any specified date. During exchange, the exchange rate of one currency to another currency is determined by supply and demand. Moreover, a corporate willing to hedge his currency exposure may also take appropriate positions in the market.

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. For example, UK and Europe opens during afternoon (as per India time) time followed by US, Australia and Japan and then India opens. The market is most active when both US and Europe is open. In the New York market, nearly two-thirds of the day's activity typically takes place in the morning hours. Activity normally becomes very slow in New York in the mid-to late afternoon, after European markets have closed and before the Tokyo, Hong Kong, and Singapore markets have open.

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. Some institutions pay little attention to developments in less active markets. Nonetheless, the 24-hour market does provide a continuous "real-time" market assessment of the currency price and flow of influences and attitudes with respect to the traded currencies, and an opportunity for a quick judgment of unexpected events. With many traders carrying pocket monitors, it has become relatively easy to stay in touch with market developments at all times.

The Forex market is a worldwide decentralized over-the-counter[1] financial market for the trading of currencies. The scope of transactions in the global currency market is constantly growing, with development of international trade and abolition of currency restrictions in many nations. With access to all of the foreign exchange markets generally open to participants from all countries, and with vast amounts of market information transmitted simultaneously and almost instantly to dealers throughout the world, there is an enormous amount of cross-border foreign exchange trading among dealers as well as between dealers and their customers. As per Triennial Central Bank Survey of Foreign Exchange and Over-the-counter (OTC) Derivatives Markets in 2019, average daily turnover of OTC foreign exchange is approximately USD 6.6 trillion. Growth of FX derivatives trading, especially in FX swaps, outpaced that of spot trading.

OTC Foreign Exchange Turnover by Instrument

Instrument	**Turnover**
Spot Transactions	1,987
Outright forwards	999
Foreign exchange swaps	3,203
Currency swaps	108
FX Options & Other	298
OTC Foreign Exchange Turnover	**6595**
Exchange Traded Derivatives	127

* Daily averages, in billions of US dollars
Source: BIS Triennial Central Bank Survey 2019

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.

1.3 Basics of Currency Markets and Peculiarities in India

1.3.1 Currency pair

Unlike any other traded asset class, 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. For example, same USD is valued at say 78 against INR and say 115 against JPY. This peculiarity makes currency market interesting and relatively

[1] Over-the-counter generally indicate transaction undertaken other than Stock Exchanges and including electronic trading platform.

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. The currency dealers have to keep abreast with latest happening in each of the country.

1.3.2 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 names cannot be “foreign currency” and “domestic currency” because what is foreign currency in one country is the domestic currency in the other. The two currencies are called “base currency” (BC) and “quoting currency” (QC). The BC is the currency that is priced, and its amount is fixed generally 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.

For the currency pair, the standard practice is to write the BC code first followed by the QC code. For example, in USDINR, USD is the base currency and INR is the quoted currency; and what is quoted in the market is the price of one USD expressed in INR. If you want the price of INR expressed in USD, then you must specify the currency pair as INRUSD. Therefore, if a dealer quotes a price of USDINR as 75, it means that one unit of USD has a value of 75 INR. Similarly, GBPUSD = 1.34 means that one unit of GBP is valued at 1.34 USD. Please note that in case of USDINR, USD is base currency and INR is quotation currency while in case of GBPUSD, USD is quotation currency and GBP is base currency.

In the interbank market, USD is the universal base currency other than quoted against Euro (EUR), Sterling Pound (GBP), Australian Dollar (AUD).

Currency pairs are quoted based on their bid (buy) and ask prices (sell). The bid price is the price that the forex broker will buy the base currency from you in exchange for the quote or counter currency. The ask—also called the offer—is the price that the broker will sell you the base currency in exchange for the quote or counter currency. When trading currencies, you're selling one currency to buy another. Conversely, when trading commodities or stocks, you're using cash to buy a unit of that commodity or a number of shares of a particular stock.

Currency pairs can also be separated into two types, direct and indirect. In a direct quote, the foreign currency is the base currency, while the local currency is the quote currency. An indirect quote is just the opposite: the domestic currency is the base currency, and the foreign currency is the quote currency. The way currency pairs are quoted can vary depending on the country in which the trader lives—most countries use direct quotes, while some countries prefer indirect quotes. Most pairs using the U.S. dollar are direct quotes.

1.3.3 Forex Market

Generally there are two distinct segment of OTC foreign exchange market. The foreign exchange market in India may be broadly divided into two segment. One segment is called

as “interbank” market and the other is called as “merchant/retail” market. The participants in the interbank segment are banks holding Authorised Dealer (AD) licenses under the Foreign Exchange Management Act (FEMA), 1999. Transactions in this segment are conducted through trading platforms provide by Clearing Corporation of India Limited (CCIL), Refinitiv (formerly Thomson Reuters) etc. before being settled by CCIL (for Cash, Tom, Spot and Forward USD-INR transactions) through a process of multilateral netting. Interbank FX market has a network of banks and institutions who trade in currencies among themselves. These transactions are generally of very high volume and make up for the bulk of the global forex market volume. The currency desks of different trading banks transact continuously, which keeps the currency exchange rate uniform. The retail forex market, on the other hand, has a large number of traders. The trading volume is, however, less than the interbank market as the value per transaction is low.

The mechanism of quoting price for both buying and selling is called as market making. For example, your close by vegetable vendor will quote prices only for selling and he will not quote prices for buying it. While in a wholesale market, the vegetable wholesaler will quote prices for buying vegetable from farmer and will also quote prices for selling to vegetable retailer. Thus, the wholesaler is a market maker as he is quoting two way prices (for both buying and selling). Similarly, dealers in interbank market quote prices for both buying and selling i.e., offer two way quotes.

Retail Customers in India with a need to buy/sell foreign exchange can have multiple avenues. They can do so over the phone with an AD Bank or through proprietary electronic dealing platforms of individual banks and Multi-Bank Portals (MBPs). In one-to-one negotiated dealing over the phone, customers with large order size command more negotiating power compared to the ones having smaller forex requirement. Banks also follow the practice of fixing “card rates” for the various forex pairs at the beginning of the day at which purchases and sales from/to retail customers would be made regardless of the intraday movement of the currency. To provide transparent and fair pricing in the retail forex market RBI in 2019, has introduced an electronic trading platform for buying/selling foreign exchange by retail customers of banks. The platform, FX-Retail, is rollout by the Clearing Corporation of India Limited (CCIL) in August 2019.

Forex trading in India typically takes place over-the-counter (including Electronic trading platform) for spot, forward and swaps (major trading venues for interbank spot market are Refinitiv D2 and FX Clear while forex swaps are largely transacted outside platform on a bilateral basis), futures are traded on exchanges, i.e., National Stock Exchange (NSE), Bombay Stock Exchange (BSE) and Metropolitan Stock Exchange of India Ltd. (MSEI). Options are traded both OTC as well as on Exchanges.

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.

1.3.4 Two way quotes

In interbank market, currency prices are quoted with two way price. 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. Please note that these prices are always from the perspective of the market maker and not from the perspective of the price taker. Let us understand it with an example. Suppose a bank quotes USDINR spot price as 75.0550/75.0600 to a merchant. In this quote, 75.0550 is the *bid* price and 75.0600 is the offer *price* or *ask* price. This quotes means that the bank is willing to buy one unit of USD for a price of INR 75.0550 and is willing to sell one unit of USD for INR 75.0600. Thus a merchant interested to buy one unit of USD will get it for a price of INR 75.06 i.e. the price at which bank is willing to sell and merchant interested to sell one unit of USD will receive Rs. 75.05 i.e. the price at which bank is willing to buy. The difference between bid and offer price is called as "spread". Please note that the price quoted by a market maker is valid for certain quantity of the currency pair and it may vary if the amount for which quote is sought is higher. Spread is an important parameter to note while assessing market liquidity, efficiency of market maker and market direction. Clearly, a narrow spread indicates a higher liquidity and higher efficiency of the market maker. In USDINR spot market, the spreads are wide at the time of opening and gradually start narrowing as the market discovers the price. Similarly, for a USD 100 mn transaction the spread is likely to be higher when compared to the spread for USD 1 mn transaction.

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.

Let us look at market norm for quoting two way prices for popular currency pairs:

Currency pair	Actual Bid-Offer Price	Abbreviated Bid-Offer Price	Comments[2]
USDINR	75.0525/75.0575	75.0525/75	Price generally quoted upto 4 decimal
EURUSD	1.1225/1.1230	1.1225/30	Price generally quoted upto 4 decimal
GBPUSD	1.3365/1.3370	1.3365/70	Price generally quoted upto 4 decimal
USDJPY	115.55/115.57	115.55/57	Price generally quoted upto 2 decimal

[2] Certain currency pairs like EURUSD, GBPUSD also quoted upto 5 decimal.

1.3.5 Appreciation/ Depreciation

Exchange rates are constantly changing, which means that the value of one currency in terms of the other is constantly change. Changes in rates are expressed as strengthening or weakening of one currency vis-à-vis 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 strengthened / appreciated, and the quotation currency has weakened / depreciated. For example, if USDINR has moved from 75.00 to 75.25, the USD has appreciated against INR and the INR has depreciated against USD. Similarly, to say that USD looks strong over next few months would mean that USDINR pair may move towards 76.00 from the current levels of 75.25.

Hence, when you buy a currency pair, clearly it implies that you expect the value of the pair to go up. Consider this example – USD INR = 75, one would buy the pair, hoping for the price of the pair to hit 76.50. Now if the price of the pair is expected to increase, then it implies that going forward 1 unit of base currency can buy more units of quotation currency i.e. 1 USD to buy more INR. In other words, if the value of the pair goes up then the power of the base currency goes up while at the same time the quotation currency weakens. This translates to you being bullish on the base currency and bearish on the quotation currency at the same time. Similarly, if you sell the USD INR pair, it implies that you anticipate the base currency to buy lesser amount of quotation currency. This translates to you being bearish on base currency and bullish on the quotation currency.

Given this, "appreciation/depreciation of a currency" refers to the following situations–

a. Base currency appreciate when it can buy more units of quotation currency. For example, USD INR moves from 75 to 76 it means the base currency (USD) strengths and the quotation currency (INR) weakens.

b. Quotation currency strengths when the base currency buys lesser units of quotation currency. For example, USD INR moves from 76 to 75 it means the base currency (USD) weakens and the quotation currency (INR) strengthens.

Please note that appreciation and depreciation of one currency is always in terms of other currency. Hence, it is possible that USD can appreciate against INR, however at the same time USD may depreciate against EUR.

1.3.6 Market Timing

In India, for OTC market FEDAI (Foreign Exchange Dealers' Association of India) has stipulated market timings for inter-bank INR forex transactions. The normal market hours for FCY/INR transactions in Inter-bank forex market as well as client transactions in India is from 9.00 a.m. to 5.00 p.m. IST on all working days.

A. Authorised dealers may undertake customer (persons resident in India and persons resident outside India) and inter-bank transactions on all working days beyond normal market hours.

B. Transactions with persons resident outside India, through their foreign branches and subsidiaries may also be undertaken on all working days beyond normal market hours.

C. However, value Cash transactions may be undertaken only upto 5.00 pm IST, except in case of individual person (including joint account or proprietary firm).

D. Transactions, including value cash transactions, for individual persons (including joint account or proprietary firm) can be undertaken even on Saturdays, Sundays and holidays as per banks internal policy.

E. Any transaction undertaken beyond the market hours prescribed above, bank must ensure that: NOOP (Net Overnight Open Position) Limit is maintained all the time [including transactions executed from EOD to 9.00 am IST (market opening time) next working day].

F. Spot date Roll over for FCY/INR transactions will take place at 12.00 midnight IST.

G. For the purpose of Foreign Exchange business, Saturday will not be treated as a working day except for transactions as stated in (D) above.

H. NOOP Limit is maintained all the time [including transactions executed from EOD to 9.00 am IST (market opening time) next working day].

Central bank has prescribed certain net overnight open position limit for various banks. The Foreign Exchange Exposure Limits of Authorised Dealers would be dual in nature.

- Net Overnight Open Position Limit (NOOPL) for calculation of capital charge on forex risk.
- Limit for positions involving Rupee as one of the currencies (NOP-INR) for exchange rate management.

For banks incorporated in India, the exposure limits fixed by the Board should be the aggregate for all branches including their overseas branches and Off-shore Banking Units. For foreign banks, the limits will cover only their branches in India. NOOP limit may be fixed by the boards of the respective banks and communicated to the Reserve Bank immediately. However, such limits should not exceed 25 percent of the total capital (Tier I and Tier II capital) of the bank, or any other condition specified by RBI from time to time.

1.3.7 Forex Rates

Base rate is the rate derived from ongoing market rate, based on which buying / selling rates are quoted for merchant transactions. The interbank rates are normally for spot deliveries are considered as base rate. Hence, for quoting rates for merchant transaction on cash basis (i.e. value Today), the base rate will be adjusted to the extent of cash/spot differences. The member banks are free to determine their own charges for various types of forex transactions, keeping in view the advice of RBI that such charges are not to be out of line with the average cost of providing services. Banks should take care to ensure that customers with low volume of activities are not penalised.

Banks also follow the practice of fixing "card rates" for the various forex pairs at the beginning of the day at which purchases and sales from/to retail customers would be made regardless of the intraday movement of the currency. However, on the days of high volatility, banks revise the card rate multiple times during the day. The difference between IBR and card rate is high to cover the risk of price fluctuation. Card rate could vary significantly from bank to bank.

1.3.8 Price discovery

Forex market in India is predominantly a wholesale market, dominated by banks, forex brokers and corporate clients. Customers are priced off-market by banks. Trading in forex and related derivatives takes place OTC as well as on exchanges. Major trading venues for interbank spot market are Refinitiv D2 and FX Clear, while forex swaps are largely transacted outside platform on a bilateral basis. The interbank price discovery is happened on these platforms. These platforms offer order matching as well as negotiated mode. Spot trading market is well distributed through the day, while in case of forex forwards, volumes typically increase gradually during the day, with the last two hours having relatively higher volumes.

The current market hours for USD/INR spot/ forward/ options, starts at 9 am and closes at 5 pm. These current timings overlap with the trading hours of Asian markets (including their closing) as well as first half of a European trading day. This allows Indian markets to have a reasonably good price discovery based on news in global markets during these hours. There are, however, some market hours, especially the US market opening (after India closes) and Asia opening (before India opens), during which the Indian markets are shut, which have a bearing on the prices in Indian markets. Domestic markets are closed during important currency trading sessions such as New York time and Tokyo time. Hence, any major domestic or international event or data release during hours when the Indian markets are closed, are not priced in by the residents and this may impact the opening rates of the Rupee. In extreme cases, it may manifest in a gap-up or gap-down at market opening, on the next day. Non-Delivery Forward (NDF)[3] volumes especially for USDINR pair have increased in the recent period, they have begun to play an important role in both price discovery and driving volatility, particularly during heightened uncertainty period.

RBI has introduced an electronic trading platform for buying/selling foreign exchange by retail customers of banks. The platform, FX-Retail, is rolled out by the Clearing Corporation of India Limited (CCIL) on August 05, 2019, to provide transparency while enhancing competition and lead to better pricing for retail customers.

1.3.9 FBIL Reference Rate

The reference rates for USD/INR and other major currencies are computed and disseminated by the Financial Benchmarks India Private Limited (FBIL). FBIL is recognised by Reserve bank of India as an independent Benchmark administrator and has assumed

[3] A non-deliverable forward (NDF) is a cash-settled, and usually short-term, currency forward contract. The notional amount is never exchanged, hence the name "non-deliverable."

the responsibility of computation and dissemination of reference rate for USD/INR and exchange rate of other major currencies with effect from July 10, 2018.

The FBIL reference rate is calculated for USD/INR, GBP/INR, EUR/INR and JPY /INR. FBIL computes and publishes since July 10, 2018, the USD/INR, EUR/INR, GBP/INR and JPY/INR reference rates on a daily basis on all Mumbai business days at around 13.30 hours. FBIL computes and publishes the USD/INR reference rate using the transaction level data available on the electronic trading platforms between 11.30 and 12.30 hours. A 15-minute random window is selected within the 11.30 and 12.30 hours for the computation of USD/INR reference rate. Normally, the data are sourced from the electronic platforms of Refinitiv and CCIL. Cross currency reference rates for INR/ 1 EUR, INR/ 1 GBP, INR/100 JPY are calculated using the EUR/USD, GBP/USD and USD/JPY quotes in the selected 15-minute window.

Computation methodology

The USD/INR Reference Rate (USD/INR) will be computed based on the data in respect of the actual spot US dollar/Indian rupee transactions taking place on electronic platforms during the one-hour time window from 11.30 Hours to 12.30 Hours on each business day in Mumbai. Normally, the data will be sourced from Refinitiv (formerly Thomson Reuters) and CCIL platforms. If the transaction data is not available on one of the two platforms due to network failure or for any other reason, the rate will be calculated on the basis of transactions data obtained from the other platform. The transactions data for a 15 minutes' time-period within the one-hour time window from 11.30 Hours to 12.30 Hours and selected randomly will be used for computation of the USD/INR reference rate. The threshold criteria of ten transactions with aggregate amount of USD 25 million will be required to be met for calculating the reference rate.

A +/- 3 Standard Deviation (SD) rule will be applied to the transaction data, as above, to remove the outliers. The Reference Rate will be set equal to the volume-weighted average of the surviving transactions, after the removal of the outliers. If the first randomly selected time-period of 15 minutes does not contain adequate number of transactions satisfying the threshold criteria, a second random time-period of 15 minutes will be generated. This process will be repeated up to a maximum of 5 times to obtain adequate number of transactions that satisfy the threshold criterion. If all the 5 randomly selected time-periods fail to produce sufficient number of transactions that satisfy the threshold criterion, the transactions data pertaining to the whole one-hour window from 11.30 Hours to 12.30 Hours will be taken into account for calculating the Reference Rate, provided they meet the threshold criterion.

In case of systems/network failures, if adequate transactions data is still not available, the reference rate will be computed using the polled submissions as under: I. A panel of Category -I authorised dealer banks selected on the basis of their USD/INR inter-bank market turnover will be maintained for the purpose of polled submission. The submission can be made over a 15-minute time window around 13.00 Hours. The quotes will be collected from the empaneled AD Banks over the designated e-mail id. The banks in the panel, as above, will submit the bid and offer quotes for spot USD/INR rate up to four

decimal places. A minimum of five quotes will be required for calculation of the reference rate. The USD/INR reference rate will be published upto 4 decimal places.

For calculation of EUR/INR, GBP/INR and JPY/INR reference rates, the ruling spot cross currency rates for EUR/USD, GBP/USD and USD/JPY will be obtained from any electronic platform. All the cross-currency rates will be taken from the same randomly selected time-period of 15 minutes between 11.30 Hours to 12.30 Hours that will be used for the calculation of USD/INR reference rate. This will be done by obtaining from any electronic platform the closing prices of each cross-currency pair as depicted in the one-minute charts over the 15- minute time-period. The mean of the closing prices, so obtained, will be crossed with the USD/INR reference rate to calculate the EUR/INR, GBP/INR and JPY/INR reference rates. In case of non-availability of cross currency quotes in the above-mentioned window, for each currency pair, the average of the last 15 minutes' quotes from the 1-minute chart of the previous day New York close (16.46 -17.00 New York Time) may be considered

The reference rates in respect of EURO and GBP will be published for 1 unit of Euro and GBP and the reference rate in respect of JPY will be for 100 units of JPY. EUR/INR and GBP/INR Reference rates will be published up to 4 decimal places and JPY/INR reference rate will be published up to 2 decimal places.

The FBIL reference rates will be published at around 13.30 Hours on all business days, i.e., excluding Saturday, Sunday and bank holidays in Mumbai

Forward Premia Curve

FBIL announces the benchmark rates for US Dollar - Indian Rupee Forward Premia for Overnight and from 1 month to 12 months tenor on a daily basis except Saturdays, Sundays and public holidays. The benchmark rates are determined based on the USD/INR transactions data reported upto 3 PM on the CCIL platform. For calculation of Overnight rate, the Cash-Tom transactions upto 12 noon are used. The Rolling Forward Premia in rupees and percentage term are calculated from the month-end forward transactions and the rolling forward transactions.

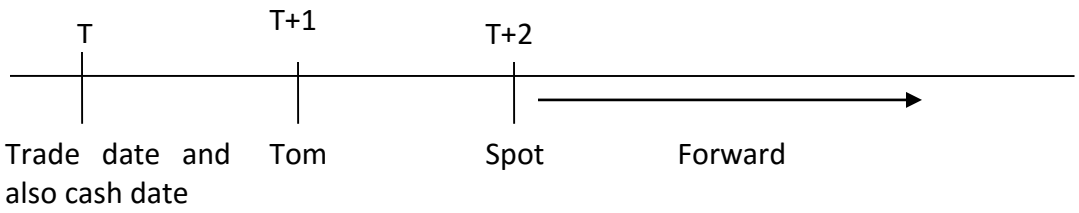
1.3.10 Settlement date and Value date

Forex rates can be quoted as spot or, forward contracts. When buyers and sellers agree to trade at the current exchange rate for immediate delivery, it is known as spot transaction or cash transaction. The word "immediate" has different meaning in this case. It can "at that instance" can go upto maximum of two days. In forex market parlance, the trade date is the day on which both parties agree to buy and sell. The settlement date/value date is the day on which currencies are actually transferred between the buyer and seller. On settlement/value date, the buying or selling actions will be realized by settlement of payment and receipt. Depending upon the gap between trade and value date, spot forex trading can either be categorized as cash, tom or spot transaction.

Ready or cash The transaction to be settled on the same day. Tom The delivery of foreign exchange to be made on the business day next to the date of transaction. The most important value date is the "spot" value date, which is settlement after two business days. In practice, it can be after "two business days" because the settlement takes place in two different centers that may have different holidays. The correct definition of spot value date is settlement on second business day, subject to both centers being open on that day. If one of them is closed, then the settlement will be on the next business day (which could be third or fourth, etc., after the trade date) on which both centers are simultaneously open.

It is also possible to settle the transaction before spot date. The price at which settlement takes before spot date is a derived price from spot price and is not a traded price. For a currency pair for which spot date is at T+2 and if settlement happens on the trade date, the settlement price is called as "cash" rate and if happens one day after trade date, the price is called as "tom" rate.

The picture below represents cash, tom, spot and forward value dates on a time line:



Please note the use of word *business* days in the definition of spot value date. It is important to understand how to calculate the exact spot date when there are holidays after trade date.

Any settlement date after spot value date is called "forward" value dates, which are standardized into 1-month, 2-month, etc. after spot value date. In a forward contract both parties enter into a contract on a given day and lock in a fixed rate on specific future date. In such types of contract, the terms of the purchase (buy or sell) are agreed up front (trade execution date), but actual exchange take place on a date in the future (maturity date). On the maturity date, both parties exchange the pre negotiated rate. For example, an Indian company which is likely to earn foreign currency i.e., Euro on account of an export order after one month, may enter into a contract today (trade execution date) to sell Euro and receive Indian Rupees after 1 month (maturity date). The rate is fixed on the trade date and the rate is known as forward- 1 month rate. Suppose on trade date, the Indian exporter agrees to sell EUR 1000 and receive INR 84000 after one month. Thus on the maturity date i.e. after one month, he delivers EUR 1000 and receives INR 84000. Such types of forward contracts are known as outright forward contracts (OFTs).

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 settlement is mainly physical settlement

i.e. with exchange of actual currencies. This is unlike currency futures market, where prices are available for month end maturity contract and the settlement is always on net settlement basis.

1.4 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. In this section, we will explain the method and rationale of crossing the prices. Although there are methods like chain rule, Left Hand-Right hand etc. prescribed in various books, we would explain the derivation of cross rate using simple commercial logic. We will take example of EURINR, GBPINR and JPYINR.

1.4.1 EURINR

The underlying currency pairs for deriving prices of EURINR are EURUSD and USDINR. Let us assume following prices:

EURUSD: 1.1125 / 1.1150; USDINR: 75.64 / 75.65

Please recollect, the prices in currency pair is quoted in terms of value of one unit of base currency. While calculating cross rates, it is important to keep in mind which is the base currency and that the price is being calculated for one unit of base currency in terms of quotation currency (also called as term currency). Therefore, for EURINR currency pair, we have to calculate the price of 1 EUR in terms of INR.

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. Now we need to use appropriate prices (bid price versus offer price) of underlying currency pairs.

To buy 1 unit of USD, the applicable price is 75.65 INR (offer side) i.e., you need INR 75.65 to buy 1 unit of USD. Now you need to sell certain units of USD (received by selling INR) to buy 1 unit of EUR. The price for buying 1 unit of EUR is 1.1150 USD (offer side). Therefore, how many INR you need to spend to buy 1.1150 USD? The answer to this question would be the price of buying 1 unit of EUR in terms of INR. We identified the price of buying 1 unit of USD as 75.65. Therefore, price of buying 1.1150 units of USD would be 1.1150 x 75.65 INR i.e. 84.3498 INR. Therefore, the price of buying 1 unit of EUR in terms of INR is 84.3498 INR.

Similarly, you could use the logic for selling 1unit of EUR and derive its price in terms of INR. The price comes to 84.1495 (1.1125 x 75.64).

Therefore, the cross rate for EURINR would be 84.1495 / 84.3498.

1.4.2 GBPINR

The underlying currency pairs are GBPUSD and USDINR. Assume GBPUSD price as 1.3300 / 1.3325 and USDINR as 75.64 / 75.65, the price for GBPINR works out to be 100.6012 / 100.8036. You should identify the FX conversion path and appropriate price levels to arrive at the above cross rate.

1.4.3 JPYINR

For JPYINR, the market convention is to quote price of 100 JPY in terms of INR. In all other pairs mentioned above, the convention is price of 1 unit of base currency in terms of quotation currency. The computation of JPYINR from USDJPY and USDINR is slightly different from the computation of GBPINR or EURINR. In case of GBPINR and USDINR computation, USD is base currency for one currency pair and quote currency for other currency pair. However in case of JPYINR, USD is base currency for both the currency pairs. We will describe below the computation of JPYINR from USDJPY and USDINR. Assume USDJPY price as 115.08 / 115.09 and USDINR as 75.64 / 75.65.

Let us start the computation of cross rate, using the buy side argument i.e. price of buying 100 JPY in terms of INR. As understood from underlying currency pairs, the price of JPY is directly available only in terms of USD. Therefore, you need to sell INR to buy USD; and further sell the USD to buy JPY. It is important to identify this FX conversion path of selling one currency and buying another to calculate the cross rate. Now we need to use appropriate prices (bid price versus offer price) of underlying currency pairs.

To buy 1 unit of USD, the applicable price is 75.65 INR (offer side) i.e., you need INR 75.65 to buy 1 unit of USD. Now you need to sell one unit of USD (received by selling INR) and buy JPY. The price for selling one unit of USD is 115.08 (bid side). Therefore, you get 115.08 JPY by spending 75.65 INR. Thus price of buying 1 JPY is 75.65/115.08 i.e. 0.6574 INR or in other words price of buying 100 JPY is 65.74 INR. Similarly, price of selling 1 JPY is 75.64/115.09 i.e. 0.6572 or in other words price of selling 100 JPY is 65.72 INR.

Thus price of JPYINR (for 100 JPY) would be 65.72 / 65.74 INR.

In the above examples, we have elaborated computing cross rates using underlying rates. Similarly, you could use one underlying rate and cross rate to calculate the other underlying rate. For example, using EURINR and USDINR rate, EURUSD rate could be calculated.

1.5 Impact of Economic Factors on Currency Prices

Just like how the equity prices are linked to fundamental strength of the company, similarly in very long term, price of one currency versus other is linked to relative economic strength of the country. In short term, factors like demand supply mismatch, global risk appetite, important political events etc. may determine currency price. 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.

All the factors are at work all the time and therefore some factors may act towards strengthening of currency and others may act towards weakening. It becomes important to identify the dominating factors at any point of time as those factors would decide the direction of currency movement. For example, economic factors in India might be very good indicating continued inflow of foreign capital and hence appreciation of INR. However, in global markets USD is strengthening against other currency pairs (on account of multiple factors). In this situation local factors are acting towards strengthening and global factors towards weakening of INR. One needs to assess which factors are more dominating at a point of time and accordingly take decision on likelihood of appreciation or depreciation of INR.

In the very short term, demand supply mismatch would also have bearing on the direction of currency's movement. The extent of impact of demand supply mismatch is very high on days when market is illiquid or on currency pairs with thin trading volumes. For USDINR, demand supply factors have considerable impact on the currency movement. For example, on some day INR may appreciate on account of large USD inflow (ECB conversion/ large FDI/ central bank intervention or any other reason) despite the trend of weakness driven by economic factors. Once the USD inflow is absorbed by the market, INR may again depreciate. Therefore, it is important to keep track of such demand supply related news.

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.

The interpretation of changing values of economic indicators on currency value could be difficult. It cannot be said with certainty that an indicator showing robust economic health of the country would mean strengthening of the currency of that country. The exact impact would be a function of relative health of other economies, global risk appetite among investors and market expectation. For example, during global financial crisis of 2008 and 2009, USD strengthened against all major currencies like EUR, GBP and JPY. This was despite US running record high fiscal deficit and its economy not doing well.

Some of the important economic factors that have direct impact on currency markets are inflation, balance of payment position of the country, trade deficit, fiscal deficit, GDP growth, policies pertaining to capital flows and interest rate scenario.

1.6 Economic Indicators

Given below are key economic indicators and their impact on currency price/currency market.

1.6.1 Gross Domestic Product (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.

1.6.2 Industrial Production

The Index of Industrial Production (IIP) shows the changes in the production in the industrial sector of an economy in a given period of time, in comparison with a fixed reference point in the past. In India, the fixed reference point is 2011-12 and the IIP numbers are reported using 2011-12 as the base year for comparison. A healthy IIP number indicates industrial growth, and which could result in relative strengthening of the currency of that country.

1.6.3 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. A rising CPI means a rising prices for goods and services and is an early indicator of inflation. Assessing the impact of CPI on value of currency is difficult. If rising CPI means likely increase in interest rate by the central bank, the currency may strengthen in the short term but may start weakening in the long run as rising inflation and rising interest may start hurting the growth of the economy.

In India, Reserve Bank of India has started using CPI as the main indicator for measuring inflation and designing its policies to manage it.

1.6.4 The Real Interest Rate in the Economy

The understanding of the real rate of interest in the economy is an extension of the inflation concept. For example, if the 10-year G-Sec has a yield of 6.5% and if the inflation is at an average of 2% then the real interest rate is 4.5%. Normally, there is a positive relationship between the real interest rates and the INR value. That is why it is seen that whenever the RBI hikes rates, the INR actually sees an appreciation in value because the higher rates of interest would have increased the real rates of interest proportionately. There is also another portfolio angle to this. When real interest rates are high, we see more flows into debt from Foreign Portfolio Investors (FPIs). As more dollars flow in, the additional supply of dollars in the market tends to make the INR stronger.

1.6.5 Current Account and Trade Deficit

The excess of imports over exports i.e. trade deficit, is a key factor to track as it influences the direction in which the currency trades. In general, narrowing the trade deficit is a

positive for the domestic currency. 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. However, during periods of risk appetite, market tends to ignore small changes in current account deficit.

1.6.6 Non-farm payrolls (NFP)

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. For US, the data is released monthly by the Bureau of Labor Statistics, and it is one of the most important indicators analyzed by market participants. A rising and positive number means that the economy is adding jobs and is good for the currency.

1.6.7 Retail Sales

It is a coincident indicator and shows how strong is consumer spending. For US market, the report is published around 13^{th} or 14^{th} of each month by United States Census Bureau. A retail sales number higher than expected may mean relative strengthening of the currency of that country. The report is amongst the top economic indicators tracked by FX dealers to assess direction for USD.

1.6.8 Central Bank Actions

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. Intervention in foreign exchange markets is a tool on which EME central banks have extensively relied on this instrument over the past two decades, as reflected in a significant increase in their FX reserves. FX intervention helps address the challenges from exchange rate swings.

It is noticed that not all indicators are important at a particular point in time. It is important to find out which indicators are getting most of the attention of market any given point in time. For example, sometimes market will give lot of importance to crude price and commodity prices while at other times may not give too much importance to it and rather focus on employment numbers and interest rate situation.

Chapter 2: Foreign Exchange Derivatives

LEARNING OBJECTIVES:

After studying this chapter, you should know about:

- Meaning of derivatives
- Types of derivatives products and its functions
- Difference between exchange traded and OTC derivatives

2.1 Derivatives - Definition

Derivative is something that is *derived* from another called the underlying. The underlying is independent, and the derivative is dependent on and derived from the underlying. The derivative cannot exist without the underlying. This is the general definition of derivative. For example, wheat farmers may wish to sell their harvest at a future date to eliminate the risk of a change in prices by that date. Such a transaction is an example of a derivative. The price of this derivative is driven by the spot price of wheat which is the "underlying".

However, accounting standards like FAS 133 (in the US), IAS 39 (in the EU) and AS 30 (in India) impose more qualifications for derivatives. For example, IAS 39 and AS 30 require the following three criteria to be satisfied for financial derivatives.

1. Value of derivative is linked to the value of underlying
2. Trade settled on a “future” date
3. On trade date, there should be no full cash outlay

FAS 133 requires an additional qualification:

4. Trade must settle (or capable of being settled) on *net* basis and not on gross basis.

The first requirement implies that the price of derivatives is determined by the price of underlying, and not by the demand-supply for derivative. The underlying is the raw material and derivative is the finished product. If the underlying price goes up (or down), the derivative price will go up (or down) regardless of demand-supply for derivative.

The “future” date in the second requirement means that the settlement of the derivative must be later than that for underlying. For example, if the underlying settles on two business days after trade date (T+2), the derivative on that underlying must settle later than T+2; if the underlying settles in T+5, the derivative on that underlying must settle later than T+5; and so on.

The third requirement provides “leverage”: ability to buy the underlying without fully paying for it immediately or sell it without delivering it immediately.

Derivatives are classified into five asset classes: interest rate, credit, equity, forex and commodity. In each asset class, there are four generic products: *forward, futures, swap* and *option*.

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 recent years, the market for financial derivatives has grown tremendously in terms of variety of instruments available, their complexity and also turnover.

Derivatives are tools to manage price risk. How you manage risk depends on your approach to risk. If you want to take risk , you will trade in derivatives which is called speculation. When you want to avoid risk, you manage it one of the three ways: elimination (called hedging); insurance and minimization (called diversification). The following table summarizes the approaches to market risk management.

The following table summarizes the approaches to risk management.

Approach	Explanation
Speculation	Taking risk (more formally called "trading") It results in the possibility of positive return (i.e. profit) or negative return (i.e. loss) in future
Hedging	You are already exposed to risk and hedging eliminates that risk and locks in the future return at a known level.
Insurance	You are already exposed to risk and insurance selectively eliminates the negative return but retains the positive return. It has an explicit upfront cost, unlike speculation and hedging, which do not have any cost. It requires a particular derivative called option to implement it.
Diversification	It reduces both return and risk but in such a way that risk is reduced more than return so that risk is minimized per unit return (or, alternately, return is maximized per unit risk).

2.2 Key Economic Functions of Derivatives

Though the economic role of derivatives is Risk Management. Like other segments of financial market, derivatives market serves following functions:

- Hedging risk exposure: Since the value of the derivatives is linked to the value of the underlying asset, the contracts are primarily used for hedging risks. For example, an investor may purchase a derivative contract whose value moves in the opposite direction to the value of an asset the investor owns. In this way, profits in the derivative contract may offset losses in the underlying asset.
- Price discovery: Derivative market serves as an important source of information about prices. Prices of derivative instruments such as futures and forwards can be used to determine what the market expects future spot prices to be. In most cases, the information is accurate and reliable. Thus, the futures and forwards markets are especially helpful in price discovery mechanism.

- Market efficiency: It is considered that derivatives increase the efficiency of financial markets. By using derivative contracts, one can replicate the payoff of the assets. Therefore, the prices of the underlying asset and the associated derivative tend to be in equilibrium to avoid arbitrage opportunities.
- Access to unavailable assets or markets: Derivatives can help organizations get access to otherwise unavailable assets or markets. By employing interest rate swaps, a company may obtain a more favorable interest rate relative to interest rates available from direct borrowing.
- Price Stability: It has been seen that many countries central banks uses derivatives for stabilising the currency prices. In India RBI also intervene in forex market through derivatives for INR stability.
- Derivatives, due to their inherent nature, are linked to the underlying cash markets. With the introduction of derivatives, the underlying market witnesses higher trading volumes because of participation by more players who would not otherwise participate for lack of an arrangement to transfer risk.
- Speculation: This is not the only use, and probably not the most important use, of financial derivatives. Financial derivatives are considered to be risky. If not used properly, these can lead to financial destruction in an organisation. However, these instruments function as a powerful instrument for knowledgeable traders to expose themselves to calculated and well understood risks in search of a reward, that is, profit.
- Derivatives market helps shift of speculative trades from unorganized market to organized market. Risk management mechanism and surveillance of activities of various participants in organized space provide stability to the financial system.

Market Participants must understand that derivatives, being leveraged instruments, have risks like counterparty risk (default by counterparty), price risk (loss on position because of price move), leverage risk (magnifying the gain and losses), liquidity risk (inability to exit from a position), legal or regulatory risk (enforceability of contracts), operational risk (fraud, inadequate documentation, improper execution, etc.) and may not be an appropriate avenue for someone of limited resources, trading experience and low risk tolerance. A market participant should therefore carefully consider whether such trading is suitable for him/her based on these parameters. Market participants who trade in derivatives are advised to carefully read the Risk Disclosure Document, given by the broker to his clients at the time of signing agreement.

2.3 Derivative Products

As specified earlier, derivatives can be classified into five asset classes: interest rate, credit, equity, forex(currency) and commodity. In each asset class, there are four generic products: *forward, futures, swap* and *option*. We will examine this product with currency as asset class. A foreign exchange derivative (currency derivative) is a financial derivative whose payoff depends on the foreign exchange rates of two (or more) currencies. In

Indian context "Foreign exchange derivative contract"[4] means a financial contract which derives its value from the change in the exchange rate of two currencies at least one of which is not Indian Rupee, or which derives its value from the change in the interest rate of a foreign currency and which is for settlement at a future date, i.e. any date later than the spot settlement date, provided that contracts involving currencies of Nepal and Bhutan shall not qualify under this definition.
"Exchange traded currency derivatives'" means a standardised foreign exchange derivative contract traded on a recognised stock exchange to buy or sell one currency against another on a specified future date, at a price specified on the date of contract

2.3.1 Forwards

It is a contractual agreement between two parties to buy/sell an underlying asset at a certain future date for a particular price that is pre-decided on the date of contract. Both the contracting parties are committed and are obliged to honour the transaction irrespective of price of the underlying asset at the time of delivery. Since forwards are negotiated between two parties, the terms and conditions of contracts are customized.
These are Over-the-counter (OTC) contracts. Contracts are mainly settled in delivery. However, in certain cases, they are settled in cash on expiration date. Generally, no margin or mark to market is collected for such contracts.

Foreign exchange forward' means an OTC derivative involving the exchange of two currencies on a specified date in the future (more than two business days later) at a rate agreed on the date of the contract.

For e.g.: "XYZ" has exported cashews to the US and the total value of the shipment is $5,000,000 (Dollar 5 million) which is due after 3 months. The current rate (spot rate) for exchange is 1 USD = INR 75.10. "XYZ" enters into forward agreement with the bank to realize the proceeds after 3 months at the rate of INR 75.80 per dollar. Agreed rate of 1USD=INR 75.80 shall be the forward rate for the particular transaction.
How does this type of forward cover benefit XYZ?

- Assurance that company will realise inflow of Rs. 37.90 Crs. (5,000,000*75.80)
- If the rupee appreciates to Rs.74.50/USD or remain same at Rs 75.10/USD, does not have much to worry because they have already locked in the exchange forward rate of Rs.75.80/USD
- Businesses generally have payables against their receivable. Company confident that the inflow will take care of the payable with minimum risk of cash flow uncertainty
- Notional loss in case rupee weakens beyond Rs. 75.80/USD.

2.3.2 Futures

[4] Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000

A futures contract is similar to a forward, except that the deal is made through an organized and regulated exchange rather than being negotiated directly between two parties. Indeed, we may say futures are standardize exchange traded forward contracts. The futures contracts are standardized in terms of lot size, underlying, expiry date etc. Contracts are mainly settled in cash; however in certain cases they are settle in physically on expiration date. Margins and mark to market are applicable for such contracts. Settlement guarantee is provided by the clearing corporation of the Exchanges.

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.

2.3.3 Options

An Option is a contract that gives the right, but not an obligation, to buy or sell the underlying on or before a stated date and at a stated price. While buyer of option pays the premium and buys the right, writer/seller of option receives the premium with obligation to sell/ buy the underlying asset, if the buyer exercises his right. Call Option gives buyer of an option the right to buy the asset and put option gives buyer of an option the right to sell the asset. In case of futures/forwards it is an obligation on both buyer as well as seller to settle the contract, however in option the buyer of an option has right but not the obligation to buy/sell the underlying asset.

'Foreign exchange option (Currency Option)' is an option that gives the buyer the right, but not the obligation, to buy or sell an agreed amount of a certain currency with another currency at a specified exchange rate on or before a specified date in the future.

In subsequent chapters we will learn in detail about Exchange traded currency futures and options.

2.3.4 Swaps

A swap is an agreement made between two parties, to exchange cash flows in the future, according to a prearranged formula. Swaps are, broadly speaking, series of forward contracts. Swaps help market participants manage risk associated with volatile interest rates, currency exchange rates and commodity prices etc. Most swaps involve cash flows based on a notional principal amount such as a loan or bond, although the instrument can be almost anything. One cash flow is generally fixed (can be floating), while the other is variable and based on a benchmark interest rate, floating currency exchange rate, or index price etc.

Interest rate swap is a derivative contract that involves exchange of a stream of agreed interest payments on a `notional principal' amount during a specified period. Such contracts generally involve exchange of a `fixed to floating' or `floating to floating' rates of interest. On each payment date that occurs during the swap period cash payments based on fixed/ floating and floating rates, are made by the parties to one another.

In forex market there are two kind of swaps namely Foreign Exchange swap and Currency swap. The two are basically the same but there are slight differences.

- 'Foreign exchange swap' means an OTC derivative involving the actual exchange of two currencies (principal amount only) on a specified date (the short leg) and a reverse exchange of the same two currencies at a date further in the future (the long leg), at rates agreed at the time of the contract.

A Pays $ Notional A Receives INR Notional	→ $ 1000000 ← INR 73000000	B Receives $ Notional B Pays INR Notional	Initial Notional Exchange @ Spot Rate
A Receives $ Notional A Pays INR Notional	← $ 1000000 → INR 73500000	B Pays $ Notional B Receives INR Notional	Final Notional Exchange @ Forward Rate

- 'Currency swap' (also known as cross currency swap) means an OTC derivative which commits two counterparties to exchange streams of interest payments and/or principal amounts in different currencies on specified dates over the duration of the swap at a pre-agreed exchange rate. The rate is based on a prevailing spot or predetermined forward rate (for forward start swaps) and agreed upon at the time of the transaction. For example, a customer in India with a long-term USD borrowing is typically exposed to exchange rate risk between the USD and the INR as well as USD interest rate risk. The company can eliminate the risk by entering into a USD/ INR currency swap with a bank. The customer receives from the bank USD floating interest rate payments and USD principal amortisations. Simultaneously, the customer pays the bank fixed interest rate in INR and the equivalent INR principal amortisations at an exchange rate based on a spot rate (or forward rate) prevailing at the time of the transaction and locked in for the entire tenure of the swap. At the start, initial principal is exchanged, though not obligatory.

No Initial Exchange of Principal Amount			
Corporate Receives $ Corporate Pays INR	← 6-month LIBOR+100 on $ 50 mn → 6% on INR 370 Crs	Bank Pays $ Bank Receives INR	Continuing Interest Payment during SWAP period
Corporate Receives $ Notional Corporate Pays INR Notional	← $ 50 mn → INR 370 Crs / INR 400 Crs	Bank Pays $ Notional Bank Receives INR Notional	Final Notional Exchange @ Initial Spot Rate / Forward Rate

The following table summarizes the key feature of four generic types of derivatives.

Generic derivative	Key feature	Market
Forward	To buy or sell the underlying asset with cash for settlement on a future date. Customized contract.	OTC
Futures	To buy or sell the underlying asset with cash for settlement on a future date. Standardized contract.	Exchange
Swap	To buy or sell returns from the underlying asset with returns from other underlying asset / cash over a period	Mainly OTC
Option	A right to buy or sell on underlying with cash for settlement on a future date	OTC and Exchange

Different kind of derivatives based on underlying

Under lying	Derivatives			
	Forward	Futures	Swap	Option
Interest Rate & Interest Rate Instrument	Forward Rate Agreement and Bond forward	Interest rate & Bond futures	Interest rate swap	Interest rate and Bond option
Equity & Equity Indices	Equity forward	Equity futures	Equity swap	Equity option
Currency Pairs	FX forward / Currency forward	FX futures / Currency futures	FX swap and Currency swap	FX option / Currency option
Commodity	Commodity forward	Commodity futures	Commodity swap	Commodity option

Additionally, “Credit” risk as underlying, Credit Default Swaps (CDS) are also very popular in the financial market. One counterparty in the CDS contract (the “buyer of protection”) makes a regular periodic payment to the other counterparty (the “seller of protection”); in exchange the protection seller agrees to pay the protection buyer any loss in value on the specified reference obligation if a “credit event” (e.g., default) were to occur during the life of the CDS contract.

2.4 Growth Drivers of Derivatives

Over the last three decades, the derivatives market has seen a phenomenal growth. A large variety of derivative contracts have been launched at exchanges across the world. Some of the factors driving the growth of financial derivatives are:

1. Increased volatility in asset prices in financial markets,
2. Increased integration of national financial markets with the international financial markets,
3. A significant growth of derivative instruments has been driven by technological breakthrough. Advances in this area include the development of high-speed processors, network systems and enhanced method of data entry.,
4. Development of more sophisticated risk management tools, providing a wider choice of risk management strategies, and
5. Innovations in the derivatives markets, which optimally combine the risks and returns over a large number of financial assets, leading to higher returns, reduced risk and lower transactions costs as compared to individual financial assets.

Currency derivatives are one of the most important among all derivatives, as shown in the following tables of notional outstanding amount:

Notional Amount Outstanding (USD Billion) in OTC Derivative Products as of June 2021

Foreign exchange contracts	102471
Interest rate contracts	488099
Equity-linked contracts	7506
Commodity contracts	2453
Credit derivatives (including Credit default swaps)	9121
Other derivatives	346
Total	**609996**

Source: Bank for International Settlement

Notional Amount Outstanding (USD Billion) in Exchange Traded Derivatives as of December 2021 and Daily Average Turnover (Notional principal USD Billion) for December 2021

	Open Interest		**Daily Average Turnover**	
Exchange Traded Products	**Futures**	**Options**	**Futures**	**Options**
Interest rate	33,816	45,826	4878	1268
Currency	313	135	138	16

Source: Bank for International Settlement

Average Daily Turnover of Exchange Traded Currency Derivatives in India for financial year 2020-21

	Futures (Rs. Crs)	Options (Notional Rs. Crs)
FY 2020-21	32253	38473

Source: SEBI Bulletin

2.5 Market Participants in Currency Derivatives Market

There are broadly three types of participants in the currency derivatives market - hedgers, traders (also called speculators) and Arbitragers. Market participants may play different roles in different market circumstances. Currency derivatives are most often used to hedge against currency risk, or else to speculate on the direction of future currency moves or to take arbitrage due to price difference in currency in various markets and currency pairs.

Hedgers

They face risk associated with the prices of underlying assets and use derivatives to reduce their risk. With context of forex market, in India, "Hedging" means the activity of undertaking a foreign exchange derivative transaction to manage currency risk and "Currency risk" means the potential for loss on account of movement in exchange rates of Rupee against a foreign currency or on account of movement in exchange rates of one foreign currency against another or on account of movement of interest rate applicable to a foreign currency. Currency risk can be from movement on both the sides; hence hedging may require for both sides movement. For e.g. An importer in India, there is a risk of rupee weakening against other currencies, so importer want to hedge risk against weakening of INR. On the other hand, for an exporter who expected to receive money in foreign currency, there is a risk of rupee strengthen against other currencies, so exporter will hedge against strengthening of INR.

Speculators/Traders

They try to predict the future movements in prices of underlying assets and based on the view, take positions in derivative contracts. Derivatives are preferred over underlying asset for trading purpose, as they offer leverage, are less expensive (cost of transaction is lower than that of the underlying) and are faster to execute in size (high volumes market). In case of currency derivatives, if participants expect that the base currency is appreciating (i.e. quote currency is depreciating), then he will take long position. On the other hand, if participant expected that base currency is depreciating (i.e. quote currency is appreciating) he will take short position.

Arbitragers

Arbitrage is a deal that produces profit by exploiting a price difference in a product in two different markets. Arbitrage originates when a trader purchases an asset cheaply in one location and simultaneously arranges to sell it at a higher price in another location. Such opportunities are unlikely to persist for very long, since Arbitragers would rush in to these transactions, thus closing the price gap at different locations. Similarly, in Currency Derivatives arbitrage may be available between underlying and derivatives market and/or within derivatives market between OTC and Exchange traded Derivatives market and/or between futures and option market and/or between various currency pairs.

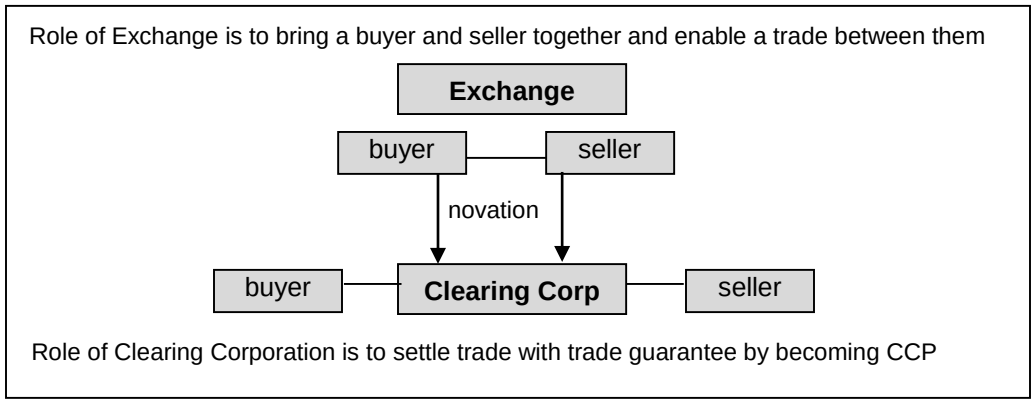
In India, a person, whether resident in India or resident outside India, may enter into a foreign exchange derivative contract or exchange traded currency derivative contract in

accordance with provisions contained in Foreign Exchange Management Act (FEMA), 1999, Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000 and any other guideline/regulations etc. provided by financial sector regulators like Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), Insurance Regulatory and Development Authority of India (IRDAI), Pension Fund Regulatory and Development Authority (PFRDA) or any other statutory authority empowered to regulate a financial institution under the Indian laws.

2.6 Exchange-Traded Derivatives vs. OTC Derivatives

Based on the style in which a transaction is negotiated and settled, the market can be classified into two segments: over-the-counter (OTC) and Exchange.

OTC derivatives (OTCD) are privately negotiated and settled contracts between two parties whereas Exchange-traded derivatives (ETD) are screen-based order matching platform and settled contracts with the aid of Exchange (which provides platform for trade execution) and Clearing Corporation (which conducts the settlement). This makes ETD more transparent as compared to OTCD. There are other differences, too. OTCDs can be customized to the specific requirements of the parties where are ETDs are "standardized" in the sense that the trade amount (called "market lot" or "Contract Amount") and the settlement date (called "expiry date") are pre-determined by the Exchange. Another difference is that OTCDs have counterparty credit risk (which is the risk of failure of the counterparty before settlement date) and settlement risk (which is the risk of default by the counterparty on settlement date), but both risks do not arise in ETDs because of "trade guarantee" by Clearing Corporation. The trade guarantee is provided by Clearing Corporation becoming a common party, called central counterparty (CCP), to the buyer and seller through the process of novation, as shown below. We say that both buyer and seller novated the original trade to Clearing Corporation so that Clearing Corporation becomes the buyer to the seller; and the seller to the buyer.



Clearing Corporation protects itself from the counterparty credit risk and settlement risk from both buyer and seller by implementing two processes called margining and mark-to-mark, which are discussed in chapter 7. The exchange traded market can offer hedging solution to even small size requirements whereas in OTC market, hedging a very small size requirement may not be possible, or the transaction cost may be prohibitive.

Though ETD has advantages in terms of transparency, elimination of counter party risk, access to all types of market, low cost of trading, credit agnostic etc. there are certain limitation like standardization improves liquidity, may lead to imperfect hedge as amount and settlement dates cannot be customized, cash settlement in ETD may not be helpful to actual hedgers, daily MTM and margin may create operational issues to market participants.

Due to increased competition between OTC and Exchange markets, the differences between them are slowly fading. For example, today many derivatives Exchanges abroad offers customized contracts through the facilities of request-for-quote (RFQ) and Exchange-for-Physical (EFP); and OTC market offers both standardized (called "vanilla" products) and customized (called "exotic" products). There are electronic communication networks called "e-trading" platforms in OTC market that does the functions of an Exchange for price discovery and trade execution. Master Direction – Reserve Bank of India (Market-makers in OTC Derivatives) Directions, 2021 define 'Over-the-counter (OTC) derivative' as a derivative (deliverable and non-deliverable) other than those which are traded on exchanges and shall include those traded on electronic trading platforms (ETPs). Many OTC markets are going through central counterparty (CCP) clearing for multilateral settlements, like in Exchange markets. In India, Clearing Corporation of India Ltd (CCIL) is offering CCP services for settlement with trade guarantee for USDINR forward contracts and USDINR swap contracts. The margining and mark-to-market processes of Exchange markets have proved so useful that OTC market implements them today.

In India, a person, whether resident in India or resident outside India, may enter into an OTC foreign exchange derivative contract with an authorized dealer. While offering a foreign exchange derivative contract involving INR, other than NDDCs[5] (Non-deliverable derivative contract) to a user, and during the life of such contracts, Authorised Dealers shall ensure that the contract is for the purpose of hedging. All OTC foreign exchange derivatives contracts are settled through delivery except Non-deliverable derivative contract (NDDC).

The clearing, settlement and risk management part of OTC contracts, if not managed well could lead to unsustainable counter party credit risk exposure leading to rapid unwinding of positions during periods of sharp volatility and movement is asset prices. A default by

[5] Banks in India having an Authorised Dealer Category-1 license under FEMA, 1999, and operating International Financial Services Centre (IFSC) Banking Units (IBUs), shall be eligible to offer non-deliverable derivative contracts involving the Rupee, or otherwise, to persons not resident in India. Banks can undertake such transactions through their IBUs or through their branches in India or through their foreign branches.

one or two large counterparties may leads to domino effect of default by other counterparties also and thereby making financial market unstable. We had observed this phenomenon during financial crisis of 2008. World over regulators and governments are now trying to move more and more derivative contracts to be exchange traded with centralized clearing and settlement.

2.7 Rationale for Introducing Exchange Traded Currency Derivatives in India

The rationale for introducing currency futures in the Indian context has been outlined in the Report of the Internal Working Group on Currency Futures (Reserve Bank of India, April 2008) as follows:

"The rationale for establishing the currency futures market is manifold. Both residents and non-residents purchase domestic currency assets. If the exchange rate remains unchanged from the time of purchase of the asset to its sale, no gains and losses are made out of currency exposures. But if domestic currency depreciates (appreciates) against the foreign currency, the exposure will result in gain (loss) for residents purchasing foreign assets and loss (gain) for non-residents purchasing domestic assets. In this backdrop, unpredicted movements in exchange rates expose investors to currency risks. Currency futures enable them to hedge these risks. Nominal exchange rates are often random walks with or without drift, while real exchange rates over long run are mean reverting. As such, it is possible that over a long – run, the incentive to hedge currency risk may not be large. However, financial planning horizon is much smaller than the long-run, which is typically inter-generational in the context of exchange rates. Per se, there is a strong need to hedge currency risk and this need has grown manifold with fast growth in cross-border trade and investments flows. The argument for hedging currency risks appear to be natural in case of assets, and applies equally to trade in goods and services, which results in income flows with leads and lags and get converted into different currencies at the market rates. Empirically, changes in exchange rate are found to have very low correlations with foreign equity and bond returns. This in theory should lower portfolio risk. Therefore, sometimes argument is advanced against the need for hedging currency risks. But there is strong empirical evidence to suggest that hedging reduces the volatility of returns and indeed considering the episodic nature of currency returns, there are strong arguments to use instruments to hedge currency risks.

Currency risks could be hedged mainly through forwards, futures, swaps and options. Each of these instruments has its role in managing the currency risk. The main advantage of currency futures over its closest substitute product, viz. forwards which are traded over the counter lies in price transparency, elimination of counterparty credit risk and greater reach in terms of easy accessibility to all. Currency futures are expected to bring about better price discovery and also possibly lower transaction costs. Apart from pure hedgers, currency futures also invite arbitragers, speculators and those traders who may take a bet on exchange rate movements without an underlying or an economic exposure as a motivation for trading.

From an economy-wide perspective, currency futures contribute to hedging of risks and help traders and investors in undertaking their economic activity. There is a large body of empirical evidence which suggests that exchange rate volatility has an adverse impact on foreign trade. Since there are first order gains from trade which contribute to output growth and consumer welfare, currency futures can potentially have an important impact on real economy. Gains from international risk sharing through trade in assets could be of relatively smaller magnitude than gains from trade. However, in a dynamic setting these investments could still significantly impact capital formation in an economy and as such currency futures could be seen as a facilitator in promoting investment and aggregate demand in the economy, thus promoting growth".

In order to expand the exchange traded hedging tools, recognized stock exchanges permitted to introduce currency options. Further, with a view to enabling direct hedging of exposures in foreign currencies and to permit execution of cross-currency strategies by market participants, exchange traded currency futures and options will be introduced in three cross-currency pairs viz., EUR-USD, GBP-USD and USD-JPY.

Chapter 3: Exchange Traded Currency Futures

LEARNING OBJECTIVES:

After studying this chapter, you should know about:

- Meaning of currency futures and the terminology used in futures market
- Rationale behind introducing currency futures in India
- Difference between futures and forward contracts
- Concept of interest rate parity and pricing of currency futures

3.1 Currency Futures - Definition

Futures contract

Futures markets were innovated to overcome the limitations of forwards. A futures contract is an agreement made through an organized exchange to buy or sell a fixed amount of a commodity or a financial asset on a future date at an agreed price. Simply, futures are standardized forward contracts that are traded on an exchange. The clearing corporation associated with the exchange guarantees settlement of these trades. A trader, who buys futures contracts generally takes a long position and the one, who sells futures, takes a short position. The words buy and sell are figurative only because no money or underlying asset changes hand, between buyer and seller, when the deal is executed.

Features of futures contract

In futures market, exchange decides all the contract terms of the contract other than price. Accordingly, futures contracts have following features:

- Contract between two parties through Exchange
- Centralised trading platform i.e. Exchange
- Price discovery through free interaction of buyers and sellers
- Margins are payable by both the parties
- Expiry date decided today (standardized)
- Quantity decided today (standardized lot size)

Currency Futures means a standardised 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.

Exchanges has launched its currency futures trading platform in August 2008, in separate segment called currency derivative segment. Initially, Currency futures on USD-INR was introduced for trading and from February 2010, the currency futures on EUR-INR, GBP-INR and JPY-INR was introduced. Further in 2018, Cross Currency Futures contracts on EUR-USD, GBP-USD and USD-JPY are also introduced. Exchange traded currency

derivatives context, cross currency derivatives means derivatives on currency pair not involving Indian rupee.

3.1.1 Futures Terminologies

Let us understand various terms in the currency futures market.

Underlying Asset: Currency future is derivatives, and its value is derived from value/price of certain underlying asset. In this case the underlying can be the exchange rate in Indian Rupees for US Dollars, Euro, Pound Sterling, Japanese Yen. Further for cross currency futures the underlying can be the exchange rate in US Dollars for Euro and Pound Sterling and exchange rate in Japanese Yen for US Dollars.

Spot price/rate: The price at which the underlying asset (currency pairs) trades in the spot market

Futures price: The current price of the specified futures contract. The future price can be more or less than price of spot price. However, on expiry date future price of the contract converge with the spot prices.

Quotation: It specifies how the price is quoted for future contract. For e.g. for USDINR future the price quotation is the exchange rate in Indian Rupees for one US Dollars and for JPYINR it is the exchange rate in Indian Rupees for 100 Japanese Yen.

Contract Cycle: It is a period over which a contract trade. The currency futures contracts on the SEBI recognized exchanges can be weekly, monthly and quarterly. In case of monthly contract, contract maturing in immediate month is called near month contract, contract expiring in next month is called mid-month contract and subsequent month contract is called far month contract. These contracts can extend up to one year. There can be different contract cycles based on underlying. For e.g. INR based currency futures have weekly and monthly contracts and cross currency futures may have only monthly contracts.

Expiry date: Also called last trading day or maturity date of contract. It is the day on which trading ceases in the contract. For all monthly currency futures contract expiry date is two working days prior to the last business day of the expiry month at 12:30 PM. On expiry date the trading in contract ceases at 12:30 pm and not on regular trading time of 5:00 pm or 7:30 pm.

Tick Size: It is minimum move allowed in the price quotations. The minimum trading increment or price differential at which traders are able to enter bids and offers is called as tick size. For example, if tick size for USDINR futures is Rs. 0.0025, the price entered by buyer and seller can be 74.9975, 75.0000, 75.0025 in multiple of Rs.0.0025.

Contract size/Lot Size: Futures contracts are traded in lots. Contract size specifies the amount of asset that has to be delivered for a single contract. This is also called as lot size.

Trading is always happened in multiple of lot size. For e.g. lot size for USDINR contract is 1000 USD.

Contract Value: To arrive at contract value, we have to multiply the price with contract multiplier or lot size or contract size.

Trading Hours: Time during which trading is allowed on Exchange trading platform. Exchange currently have different market timings for contract involving Indian rupee and contract not involving Indian rupee. Further, on contract expiry day, the specific currency futures and option contract stop trading earlier than normal trading hours i.e. 12:30 pm.

Base Price: Base price generally act as reference price for trading for start of the day. Generally, on the first day of trading (i.e. on introduction) of contract, it would be the theoretical futures price. The base price of the contracts on subsequent trading days would be the daily settlement price of the futures contracts as computed by Clearing Corporation.

Price Band: The price range (maximum and minimum price) for the day within which contract can be traded for that day. Generally, specify +/-% to base price. In many derivatives contract there is no price band for contracts, in such cases dummy operating range is set to avoid erroneous order entry at non-genuine price.

Mark to Market (MTM): The positions in the futures contracts for each member are marked-to-market to the daily settlement price of the futures contracts at the end of each trade day. The exchange/CC collects these margins (MTM margins) from the loss-making participants and pays to the gainers on day-to-day basis.

Daily Settlement Price (DSP): It is required mainly for MTM settlement. The settlement price is weighted average futures price (VWAP) of the trades generally in the last 30 minute of trading (i.e. close price), if close price is not available then theoretical price.

Final Settlement Price (FSP): All open positions on the last trading day of the currency futures contract shall be marked to the final settlement price for the relevant futures contract and shall be settled on final settlement day. Final settlement price / rate is mainly derived from the underlying/spot market.

Final Settlement: Final settlement can be cash settled or physical settled. In case of cash settlement only the profit and loss resulting from positions shall be paid / received from the participants. In case of physical settlement, participants have to physically give/take delivery of stocks/underlying asset to settle the open transactions instead of settling them with cash. Currently, all exchange traded currency futures and option contracts are cash settled in Indian rupee.

Open Interest: An open interest is the total number of contracts outstanding (yet to be settled) for an underlying asset. It is important to understand that number of long futures

as well as number of short futures is equal to the Open Interest. This is because total number of long futures will always be equal to total number of short futures. Only one side of contracts is considered while calculating/mentioning open interest. The level of open interest indicates depth in the market.

Positions in derivatives market

As a market participant, you will always deal with certain terms like long, short and open positions in the market. Let us understand the meanings of commonly used terms:

Long position

Outstanding/ unsettled buy position in a contract is called "Long Position". For instance, if Mr. X buys 5 contracts on USDINR futures then he would be long on 5 contracts on USDINR futures. If Mr. Y buys 4 contracts on EURUSD futures, then he would be long on 4 contracts on EURUSD.

Short Position

Outstanding/ unsettled sell position in a contract is called "Short Position". For instance, if Mr. X sells 5 contracts on USDINR futures then he would be short on 5 contracts on USDINR futures. If Mr. Y sells 4 contracts on EURUSD futures, then he would be short on 4 contracts on EURUSD.

Open position

Outstanding/ unsettled either long (buy) or short (sell) position in various derivative contracts is called "Open Position." For instance, if Mr. X shorts say 5 contracts on USDINR futures and buys say 3 contracts on EURUSD futures, he is said to be having open position, which is equal to short on 5 contracts of USDINR and long on 3 contracts of EURUSD futures. If next day, he sells 2 contracts EURUSD futures contracts of same maturity, his open position would be short on 5 contracts of USDINR futures contracts and long on 1 contract of EURUSD futures contract.

Opening a position

Opening a position means either buying or selling a contract, which increases client's open position (long or short).

Closing a position

Closing a position means either buying or selling a contract, which essentially results in reduction of client's open position (long or short). A client is said to be closed a position if he sells a contract which he had bought before or he buys a contract which he had sold earlier.

3.2 Pay Off Charts of Futures Contract

Pay off Charts

Pay off on a position is the profit/ loss that would accrue to a market participant with change in the price of the underlying asset at expiry. The pay-off diagram is graphical representation showing the price of the underlying asset on the X-axis and profits / losses on the Y-axis.

Pay off charts for futures

In case of futures contracts, long as well as short position has unlimited profit or loss potential. This results into linear pay offs for futures contracts. Futures pay offs are explained in detail below:

Payoff for buyer of futures: Long futures

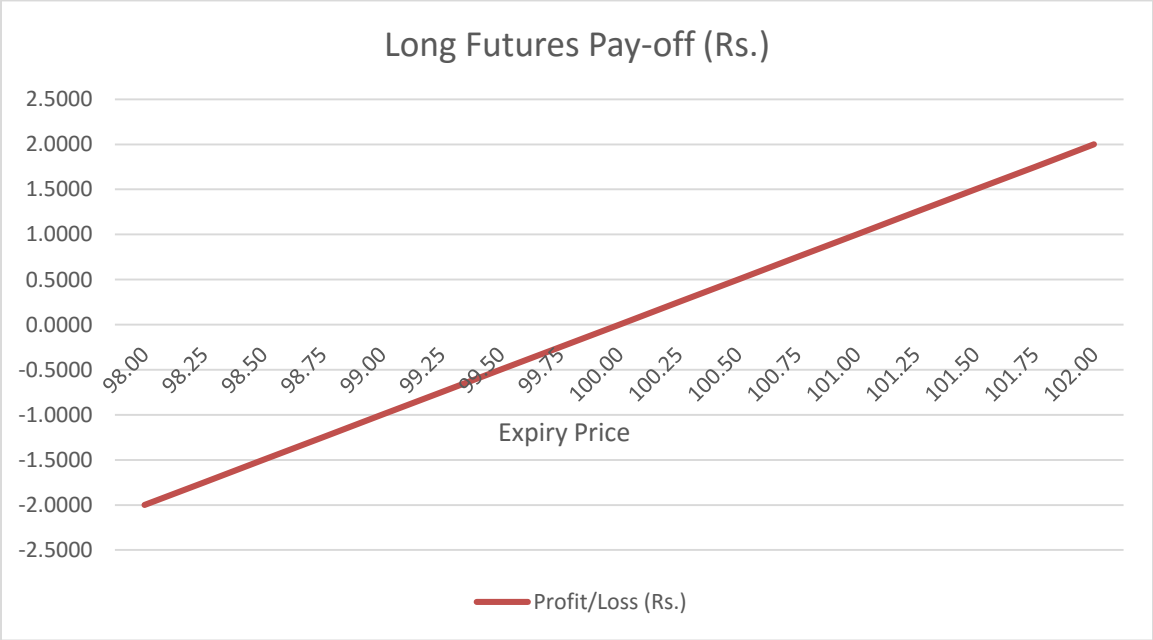
Let us say a person goes long in a futures contract at Rs.100. This means that he has agreed to buy the underlying at Rs. 100 on expiry. Now, if on expiry, the price of the underlying is Rs. 101, then this person will buy at Rs. 100, as per the futures contract and will immediately be able to sell the underlying in the cash market at Rs.101, thereby making a profit of Rs. 1. Similarly, if the price of the underlying falls to Rs. 99 at expiry, he would have to buy at Rs. 100, as per the futures contract, and if he sells the same in the cash market, he will receive only Rs. 99, translating into a loss of Rs. 1. If it is cash settled futures contract then participant will either receive / pay only profit/loss amount i.e. Rs. 1 in the above example.

This potential profit/loss at expiry, when expressed graphically, is known as a payoff chart. The X axis has the market price of the underlying at expiry. It increases on the Right-Hand Side (RHS). We do not draw the X axis on the Left-Hand Profit Side (LHS), as prices cannot go below zero. The Y axis shows profit & loss. In the upward direction, we have profits and in the downward direction, we show losses in the chart. So we can see that long futures position makes profits when prices rise.

The below table and pay off chart show long futures pay offs:

Long Future at Rs. 100	
Market Price at Expiry	Long Futures Pay-off
98.0000	-2.0000
98.2500	-1.7500
98.5000	-1.5000
98.7500	-1.2500
99.0000	-1.0000
99.2500	-0.7500
99.5000	-0.5000
99.7500	-0.2500
100.0000	0.0000
100.2500	0.2500

100.5000	0.5000
100.7500	0.7500
101.0000	1.0000
101.2500	1.2500
101.5000	1.5000
101.7500	1.7500
102.0000	2.0000



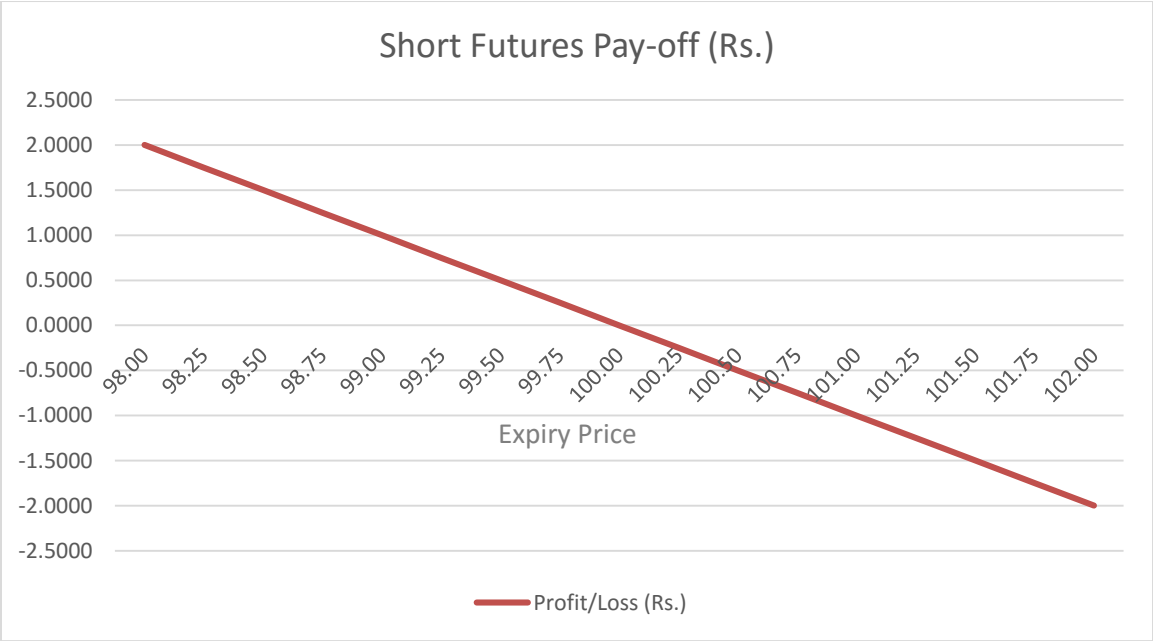
Pay-off for seller of futures: Short futures

Let us say a person goes short in a futures contract at Rs.100. This means that he has agreed to sell the underlying at Rs. 100 on expiry. Now, if on expiry, the price of the underlying is Rs. 99, then the person will buy from underlying in cash market at Rs. 99 and will sell at Rs. 100, as per the futures contract thereby making a profit of Rs. 1. Similarly, if the price of the underlying increase to Rs. 101 at expiry, he would have to buy at Rs. 101, in underlying cash market and sell at Rs. 100 in future market, translating into a loss of Rs. 1. If it is cash settled futures contract then participant will either receive / pay only profit/loss amount i.e. Rs. 1 in the above example. So we can see that a short futures position would make profits when prices fall.

The below table and pay off chart show long futures pay offs:

Short Future at Rs. 100	
Market Price at Expiry	Short Futures Pay-off
98.00	2.0000
98.25	1.7500
98.50	1.5000
98.75	1.2500
99.00	1.0000

99.25	0.7500
99.50	0.5000
99.75	0.2500
100.00	0.0000
100.25	-0.2500
100.50	-0.5000
100.75	-0.7500
101.00	-1.0000
101.25	-1.2500
101.50	-1.5000
101.75	-1.7500
102.00	-2.0000



The payoff graph for futures displays a linear or symmetrical style.

3.3 Contract Specification of Exchange Traded Currency Futures Contracts

Based on RBI and SEBI guideline, various kinds of currency futures (also include cross currency futures) have been launched by Exchanges. Currently Exchange traded currency futures are part of currency derivatives segment. Exchange traded currency futures are regulated by SEBI as well as RBI. We will see the regulatory framework of the Currency Derivatives in subsequent chapter. Details of the currency futures contracts which are currently active on Exchanges are provided below.

Currency Futures Contracts (Contracts involving Indian Rupee)

Parameters	**Contract Details**

Underlying	US Dollar-Indian Rupee **(USDINR)**	Euro – Indian Rupee **(EURINR)**	Pound Sterling – Indian Rupee **(GBPINR)**	Japanese Yen-Indian Rupee **(JPYINR)**
Unit of Trading	1 contract denotes 1000 US Dollars	1 contract denotes 1000 Euro	1 contract denotes 1000 Pound Sterling	1 contract denotes 100000 Japanese Yen
Price Quotation	The exchange rate in Indian Rupees for 1 US Dollars. The outstanding position in USD	The exchange rate in Indian Rupees for 1 Euro. The outstanding position in EUR.	The exchange rate in Indian Rupees for 1 Pound Sterling. The outstanding position in GBP.	The exchange rate in Indian Rupees for 100 Japanese Yen. The outstanding position in JPY.
Contract Value	Trade Price * 1000			
Tick Size	Rs. 0.0025 (0.25 paise)			
Base Price	Theoretical on the 1st day of contract, on all other day's daily settlement price of contract.			
Price Band	There shall be no daily price bands applicable for contracts. However in order to prevent erroneous order entry by members, operating ranges will be kept at +/-3% of the base price for contracts with tenure upto 6 months and +/- 5% of the base price for contracts with tenure greater than 6 months. The dynamic price bands shall be relaxed in increments of 1% as and when a market-wide trend is observed.			
Trading Hours	Monday to Friday: 9:00 a.m. to 5:00 p.m. On contract expiry, the expired contract will be available for trading up to 12:30 pm.			
Contract Trading Cycle	11 serial weekly cycle (excluding expiry week wherein monthly contracts expires on a Friday) and 12 serial monthly trading cycle. New serial weekly/monthly futures contracts shall be introduced after expiry of the respective week's/month contract.			
Expiry Day	For weekly contract: Every Friday at 12:30 pm. If the Friday of the expiring week is a trading holiday, then the expiry day is the previous trading day. For monthly contract: Two working days prior to the last business day of the expiry month at 12:30 PM. For e.g. If last business day of the month is Thursday & there is no holiday, then expiry will be on Tuesday.			
Mode of Settlement	Cash Settled in Indian Rupee			

Daily Settlement Price	Volume Weighted Average Futures Price of last half an hour across exchanges or theoretical future price
Final Settlement Price	FBIL reference rate on last trading day
Daily MTM and Final Settlement	Daily Settlement : T+1 Final Settlement : T+2

Cross Currency Futures Contracts (Contracts involving other than Indian Rupee)

Parameters	**Contract Details**		
Underlying	Euro- US Dollar **(EURUSD)**	Pound Sterling - US Dollar **(GBPUSD)**	US Dollar - Japanese Yen **(USDJPY)**
Unit of Trading	1 contract denotes 1000 Euro	1 contract denotes 1000 Pound Sterling	1 contract denotes 1000 US Dollars
Price Quotation	The exchange rate in US Dollars for 1 Euro. The outstanding position in EUR.	The exchange rate in US Dollars for 1 Pound Sterling. The outstanding position in GBP.	The exchange rate in Japanese Yen for 1 US Dollar. The outstanding position in USD.
Contract Value	Trade Price * 1000 (in quote currency)		
Tick Size	USD 0.0001	USD 0.0001	JPY 0.01
Base Price	Theoretical on the 1st day of contract, on all other day's daily settlement price of contract.		
Price Band	There shall be no daily price bands applicable for Currency Futures contracts. However, in order to prevent erroneous order entry by members, operating ranges will be kept at +/-3% of the base price for contracts with tenure upto 6 months and +/- 5% of the base price for contracts with tenure greater than 6 months. The dynamic price bands shall be relaxed in increments of 1% as and when a market-wide trend is observed.		
Trading Hours	Monday to Friday: 9:00 a.m. to 7:30 p.m. On contract expiry, the expired contract will be available for trading up to 12:30 pm.		
Contract Trading Cycle	11 serial weekly cycle (excluding expiry week wherein monthly contracts expires on a Friday) and 12 serial monthly trading cycle.		

	New serial weekly/monthly futures contracts shall be introduced after expiry of the respective week's/month contract.
Expiry Day	For weekly contract: Every Friday at 12:30 pm. If the Friday of the expiring week is a trading holiday, then the expiry day is the previous trading day. For monthly contract: Two working days prior to the last business day of the expiry month at 12:30 PM.
Mode of Settlement	Cash Settled in Indian Rupee
Daily Settlement Price	Volume Weighted Average Futures Price of last half an hour across exchanges or theoretical future price
Final Settlement Price	The final settlement price for cross-currency futures contracts shall be computed using the FBIL reference rate for USD-INR and the corresponding exchange rate published by FBIL for EUR-INR, GBP-INR and JPY-INR, as applicable, on the last trading day of the contract.
Daily MTM and Final Settlement	Daily Settlement : T+1 Final Settlement : T+2

3.4 Contract Value

In case of currency futures trading is done in lot. Market lot / lot size is the minimum and multiple of trade size. In case of currency futures, for different underlying different lot sizes are applicable. Let's study in detail about lot size, contract value and minimum change in the contract value.

Contracts involving Indian Rupee

Currency pair	**USDINR**	**EURINR**	**GBPINR**	**JPYINR**
Contract Size	1000 USD	1000 EUR	1000 GBP	100000 JPY
Price Quotation	The exchange rate in Indian Rupees for 1 US Dollars	The exchange rate in Indian Rupees for 1 Euro	The exchange rate in Indian Rupees for 1 Pound Sterling	The exchange rate in Indian Rupees for 100 Japanese Yen
Contract Value per lot	Trade price *1000			Trade price * 1000 (trade price*100000/100)
Trade Price	INR 75.0000	INR 84.0000	INR 101.4000	INR 66.05
Number of lot	5	10	15	20

Total Contract Value	INR 375000 (75*5*1000)	INR 840000 (84*10*1000)	INR 1521000 (101.40*15*1000)	INR 1321000 (66.05*20*1000)
Tick Size	INR 0.0025	INR 0.0025	INR 0.0025	INR 0.0025
Price movement	74.9975 75.0000 75.0025	83.9975 84.0000 84.0025	101.3975 101.4000 101.4025	66.0475 66.0500 66.0525
Change in contract value for each tick size change	INR = 2.50 (1*1000*0.0025)			

Contracts involving other than Indian Rupee

Currency pair	**EURUSD**	**GBPUSD**	**USDJPY**
Contract Size	1000 EUR	1000 GBP	1000 USD
Price Quotation	The exchange rate in US Dollar for 1 Euro	The exchange rate in US Dollar for 1 Pound Sterling	The exchange rate in Japanese Yen for 1 US Dollar
Contract Value per lot	Trade price *1000 (in quote currency)		
Trade Price	1.10 USD	1.33 USD	115.37 JPY
Number of lot	5	10	15
Total Contract Value	**USD** 5500 (1.10*5*1000)	**USD** 13300 (1.33*10*1000)	**JPY** 1730550 (115.37*15*1000)
Total Contract Value (**in INR**)**	USD 5500 * 74.75 = INR 411125	USD 13300 * 74.75 = INR 994175	JPY 1730550*65.80/100 = INR 1138701.90***
** To arrive at the value of cross currency positions in INR for EUR-USD and GBP-USD contracts, the latest available FBIL reference rate for USD-INR shall be used. For USD-JPY contracts, the value in INR shall be arrived at using the latest available exchange rate published by FBIL for JPY-INR. *** Reference Rate in respect of JPYINR will be for 100 units of JPY			
Tick Size	USD 0.0001	USD 0.0001	JPY 0.01
Price movement	1.0999 1.1000 1.1001	1.3299 1.3300 1.3301	115.36 115.37 115.38

Change in contract value for each tick size change	USD 0.10 (1*0.0001*1000)	USD 0.10 (1*0.0001*1000)	JPY 10 (1*0.01*1000)

Contract value is important for determining margin amount, transaction charges, regulatory charges etc.

3.5 Advantages and Limitations of Future Contracts in Comparison to Forward

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. However, it should be noted that forwards enjoy the benefit of being customized to meet specific client requirements.

'Foreign exchange forward' / currency forward means an OTC derivative involving the exchange of two currencies on a specified date in the future (more than two business days later) at a rate agreed on the date of the contract. In India, a person, whether resident in India or resident outside India, may enter into an OTC foreign exchange forward contract with an authorized dealer. While offering a foreign exchange forward contract involving INR, other than NDDCs (Non-deliverable derivative contract) to a user, and during the life of such contracts, Authorised Dealers shall ensure that the contract is for the purpose of hedging. All OTC foreign exchange derivatives contracts are settled through delivery except Non-deliverable derivative contract (NDDC).

Currency Futures means a standardised 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.

Comparison of Foreign Exchange Forward and Currency Futures[6]

Parameters	Foreign Exchange Forward	Currency Futures
Operational mechanism	Mainly bilateral over-the-counter (OTC) transactions. Can be traded on electronic trading platform.	Contract between two parties through centralized trading platform of Exchanges
Terms of Contracts	Non- Standardized. Each Contract is custom designed and hence unique in terms of contract size, expiration date, asset quality, asset type etc.	Standardized Contract in forms of underlying asset, contract size, expiry date etc.

[6] The comparison mainly based on Indian Foreign Exchange Market.

Price Discovery	Mainly through negotiation.	Price discovery through free interaction of buyers and sellers on centralized trading platform
Liquidation Profile	Low, as contracts are tailor made catering to the needs of the parties involved. Further, contracts are not easily accessible to other market participants	High, as contracts are standardised exchange-traded contracts.
Settlement	Mainly bilateral settlement by parties. Mainly delivery based settlement. Generally gross settlement basis i.e. without netting. Globally Non-Deliverable Forward contracts i.e. settlement without delivery, are very popular.	Clearing and Settlement through clearing corporation with guaranteed settlement. Currently cash settled in INR. Mainly net settlement basis.
Quality of information and dissemination	Very less. Mainly post trade	Futures are traded nationwide. Information is available online on trading platform and websites.
Advantages	• Since customized product can provide perfect hedge. • Delivery based settlement more helpful to importer and exporter • Less operation issues related to margin and mark to market settlement.	• Price transparency • Elimination of Counterparty credit risk as settlement guarantee by clearing corporation of Exchanges • Access to all types of market participants • Credit Agnostic • Lower liquidity risk compared to OTC • Generally lower impact cost • Easy entry and exit
Limitations	• Liquidity risk • Counter party risk • Limited market participants • Cancellation and rebooking is based on certain condition.	• May lead to imperfect hedge as amount and settlement dates are standardized. • Since, it is cash settled, user need to access cash/spot market for actual delivery of currency.

		• Operational issues related to mark-to-mark settlement and margin.

3.6 Interest Rate Parity and Pricing of Currency Futures

Concept of interest rate parity

Let us assume that risk free interest rate for one year deposit in India is 7% and in USA it is 3%. You as smart trader/ investor will raise money from USA and deploy it in India and try to capture the arbitrage of 4%. You could continue to do so and make this transaction as a non-ending money making machine. Life is not that simple! And such arbitrages do not exist for very long.

We will carry out the above transaction through an example to explain the concept of interest rate parity and derivation of future/forward prices which ensure that arbitrage does not exist.

Assumptions:

1. Spot exchange rate of USDINR is 75 (S)
2. One year future rate for USDINR is "F"
3. Risk free interest rate for one year in USA is 3% (R_{USD})
4. Risk free interest rate for one year in India is 7% (R_{INR})
5. Money can be transferred easily from one country into another without any restriction of amount, without any taxes etc.

You decide to borrow one USD from USA for one year, bring it to India, convert it in INR and deposit for one year in India. After one year, you return the money back to USA.

On start of this transaction, you borrow 1 USD in US at the rate of 3% and agree to return 1.03 USD after one year (including interest of 3 cents or 0.03 USD). This 1 USD is converted into INR at the prevailing spot rate of 75. You deposit the resulting INR 75 for one year at interest rate of 7%. At the end of one year, you receive INR 5.25 (7% of 75) as interest on your deposit and also get back your principal of INR 75 i.e., you receive a total of INR 80.25. You need to use these proceeds to repay the loan taken in USA.

Two important things to think before we proceed:

- The loan taken in USA was in USD and currently you have INR. Therefore, you need to convert INR into USD
- What exchange rate do you use to convert INR into USD?

At the beginning of the transaction, you would lock the conversion rate of INR into USD using one year future price of USDINR. To ensure that the transaction does not result into any risk free profit, the money which you receive in India after one year should be equal

to the loan amount that you have to pay in USA. We will convert the above argument into a formula:

$S(1+R_{INR}) = F(1+R_{USD})$

Or $F/ S = (1+R_{INR}) / (1+R_{USD})$

Another way to illustrate the concept is to think that the INR 80.25 received after one year in India should be equal to USD 1.03 when converted using one year future exchange rate.

Therefore,

F/ 75 = (1+0.07) / (1+0.03)

F= 77.9126

Approximately, F is equal to the interest rate difference between two currencies i.e.,

$F = S + (R_{INR}- R_{USD})*S$

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.

A more accurate formula for calculating the arbitrage-free forward price is as follows.

$F = S \times (1 + R_{QC} \times \text{Period}) / (1 + R_{BC} \times \text{Period})$

Where
F = forward price
S = spot price
R_{BC} = interest rate on base currency
R_{QC} = interest rate on quoting currency
Period = forward period in years
For a quick estimate of forward premium, following formula mentioned above for USDINR currency pair could be used. The formula is generalized for other currency pair and is given below:
$F = S + (S \times (R_{QC} – R_{BC}) \times \text{Period})$

In above example, if USD interest rate were to go up and INR interest rate were to remain at 7%, the one year future price of USDINR would decline as the interest rate difference between the two currencies has narrowed and vice versa.

Traders use expectation on change in interest rate to initiate long/ short positions in currency futures. Everything else remaining the same, if USD interest rate is expected to go up (say from 3.0% to 4.0%) and INR interest rate are expected to remain constant say at 7%; a trader would initiate a short position in USDINR futures market.

Illustration:

Suppose 6 month interest rate in India is 5% (or 10% per annum) and in USA are 1% (2% per annum). The current USDINR spot rate is 75. What is the likely 6 month USDINR futures price?

As explained above, as per interest rate parity, future rate is equal to the interest rate differential between two currency pairs. Therefore, approximately 6 month future rate would be:

Spot + 6 month interest difference = 75 + 4% of 75

= 75 + 3 = 78.00

The exact rate could be calculated using the formula mentioned above and the answer comes to 77.9703. Hence, the 6 month forward rate for USDINR will be 77.9703.

77.9703 = 75 x (1+0.10*0.5) / (1+0.02*0.5)

Now, everything else remaining the same, trader expect if USD interest rate is to go up (say from 2% to 3%) and INR interest rate are expected to remain constant. What will happen to 6 month forward rate?

The 6 month forward rate for USDINR will be 77.5862.

77.5862 = 75 x (1+0.10*0.5) / (1+0.03*0.5)

You can see that the 6 month forward USDINR rate will fall (from earlier 77.9703 to 77.5862) i.e. USD is depreciated against rupee. Hence, a trader would initiate a short position in USDINR futures market.

Concept of premium and discount

You can observe that the 6 month future price of USDINR pair is 77.9703 when spot price is 75. It means that INR is at discount to USD and USD is at premium to INR. Intuitively to understand why INR is called at discount to USD, think that to buy same 1 USD you had to pay INR 75 now and you have to pay 77.9703 after 6 months i.e., you have to pay more INR to buy same 1 USD. And therefore future value of INR is at discount to USD.

Assume risk free interest rate for one year in JPY is 0.25% and in EUR is 1%. Current EURJPY spot rate is 123.4.
Would future value of EUR be at discount or premium to JPY
What is it likely to be: towards 124 or towards 122?

The 1 year forward rate for EURJPY will be 122.4837.

122.4837 = 123.40 x (1+0.0025*1) / (1+0.01*1)

Key Conclusion:
Future value of a currency with high interest rate is at discount to value of currency with low interest rate or future value of a currency with low interest rate is at a premium to value of currency with high interest rate.

Theoretical Price Computation for Currency Futures

The theoretical price of a currency futures contract shall be computed as per the following formula:

$F = S \times e^{(r-rf)*t}$

where:

- F Theoretical futures price
- S Value of the underlying
- r Correspondence to interest rate for quote currency
- r_f Correspondence to interest rate for base currency
- t Time till expiration
- e 2.71828

Chapter 4: Exchange Traded Currency Options

LEARNING OBJECTIVES:

After studying this chapter, you should know about:

- Understanding of Options and Option Terms
- Understanding of Option Pricing and Option Greeks
- Options Pay-offs
- Contract Specifications of Exchange Traded Currency Options
- Advantages and Limitations of Exchange Traded Currency Options

4.1 Basics of Options

As seen in earlier section, forward/futures contract is a commitment to buy/sell the underlying and has a linear pay off, which indicates unlimited losses and profits. Some market participants desired to ride upside and restrict the losses. Accordingly, options emerged as a financial instrument, which restricted the losses with a provision of unlimited profits on buy or sell of underlying asset. An Option is a contract that gives the option buyer right, but not an obligation, to buy or sell the underlying asset on or before a specified date/day, at a pre-determined price. For acquiring right option buyer pay certain price/premium to option seller.

Let us understand this with an example:
Mr. X is looking to buy 1 acre of land from Mr. Y. The land is valued at Rs.10,00,000. Mr. X has informed that in next 3 months the infrastructure project is expected near the land and value of land bound to increase. However, if the news turns out to be a rumour, then Mr. X would be stuck with a useless piece of land.
What should X do???

- Mr. X pays an upfront fee of Rs. 50,000/- today i.e. August 01, 2021, to Mr. Y. Consider this as a non-refundable
- Against this fees, Mr. Y agrees to sell the land after 3 months to Mr. X
- The price of the land (which is expected 3 months later) is fixed today at Rs.10,00,000/-
- Mr. X has paid an upfront fee and hence only he can call off the deal at the end of 3 months, Mr. Y cannot.
- In the event Mr. X calls off the deal at the end of 3 months, Mr. Y gets to keep the upfront fees

The above arrangement between Mr. X and Mr. Y is called as option contract. We could define option contract as below:

An option is a contract between two parties giving the buyer of an option the right, but not the obligation, to buy or sell an underlying asset at a specific price on or before a certain date.

We will now use the above example, to define certain important terms relating to options.

- The right to buy the asset is called **call option** and the right to sell the asset is called **put option**. In the above example Mr. X has received right to buy the land, hence it is a call option transaction.
- The pre-specified price at which the underlying asset may be purchased or sold by the option holder is called as **strike price.** In above example the same is set as Rs.10,00,000.
- The date at which the option contract will expire / or ceases to exist is called **expiration date**. In this case October 31, 2021 (3 months from trade date) is the contract expiration date.
- The difference between the date of entering into the contract and the expiration date is called **time to maturity** which is 3 months in the above example.
- 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**. In above case Mr. X is option buyer and Mr. Y is option seller.
- The price which option buyer pays to option seller to acquire the right is called as **option price or option premium.** In above case, Rs. 50000/- is the option premium**.**
- The asset which is bought or sold is an underlying or **underlying asset** which is Land in above case.
- In options trading, "**to exercise**" means to put into effect the right to buy or sell the underlying security that is specified in the options contract. If the holder of a call option exercises the contract, they will buy the underlying security at a stated price within a specific timeframe. If the holder of a put option exercises the contract, they will sell the underlying security at a stated price within a specific timeframe. In the above example, of price of land on October 31, 2021, is Rs. 15 lacs, Mr. X will exercise its option as he will pay only Rs. 10 lacs to buy the land.

Let us also take a real-life example of a put option. When you get your car insured, you pay an insurance premium to the insurance company and the insurance company guarantees to compensate you for the damages to your car during the insurance period. In this example, you are buying a put option from the insurance company and paying it an option premium in the form of insurance premium. If your car gets damaged during the insurance period, you can use your policy to claim the compensation and if all goes well and you do not need to claim the compensation, the insurance company keeps the premium in return for taking on the risk. A customer paying additional charges for warranty of certain parts is also an example of put option, where customer is buyer of put option.

4.2 Difference between Futures and Options

Let us first highlight the similarities between two types of derivative contracts – Futures and Options. The similarities are as follows:

- Both the contracts have a buyer and a seller
- Both the contracts have a set price for the underlying asset
- Both the contracts have a set settlement date

Just like futures, options can be used for hedging, or to generate returns by taking a view on the future direction of the market, or for arbitrage.

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. On the other hand, option seller is under obligation to buy or sell (depending on whether put option is sold or a call option is sold, respectively) 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. Similarly, the put option buyer would exercise the option, only if the price of the underlying asset is less than the strike price.

4.3 Style of Options

In options trading, "to exercise" means to put into effect the right to buy or sell the underlying security that is specified in the options contract. Before exercising an option, it is important to consider what type of option you have and whether you can exercise it. Based on when the buyer is allowed to exercise the option, Options are classified into two types:

- **European options**: European options can be exercised by the buyer of the option only on the expiration date. Hence, option buyer enjoys less flexibility in how they handle option trading. However, please note that in case of exchange traded options, participants can sell their option in the secondary market prior to option expiration date to square-off their position.
- **American options**: American options can be exercised by the buyer any time on or before the expiration date. American option offer more flexibility to option buyer as they can be exercised on any trading day prior to their expiration. All other things remain equal (underlying asset, strike price, expiry date etc.) price of American options is always higher than or equal to European options.

4.4 Moneyness of an Option

The buyer of call option would exercise his right to buy the underlying asset only if the spot price of underlying asset is higher than the strike price at the maturity of the contract. Similarly, the buyer of a put option would exercise his right to sell the underlying asset only if the spot price of underlying asset is lower than the strike price at the maturity of the contract. In certain cases, transaction/regulatory charges are applicable at the time

of exercise. If these costs are included, the decision of the option buyer would take into account these costs also. 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. Thus a call option would be in the money, if underlying price is higher than the strike price and similarly a put option would be in the money, if underlying price is lower than the strike price.

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. Thus a call option would be out of the money, if underlying price is lower than the strike price and similarly a put option would be out of the money, if underlying price is higher than the strike price.

At the money (ATM) option: An option is said to be at the money if spot price is equal to the strike price. On exercise of ATM option buyer gets zero cash flows. Any movement in spot price of underlying from this stage would either make the option ITM or OTM.

Strike	Call Option	Put Option
In-the-money	Strike price < Spot price of underlying asset	Strike price > Spot price of underlying asset
At-the-money	Strike price = Spot price of underlying asset	Strike price = Spot price of underlying asset
Out-of-the-money	Strike price > Spot price of underlying asset	Strike price < Spot price of underlying asset

4.5 Basics of Option Pricing and Options Greeks

4.5.1 Option Value:

The option value/option premium can be broken in two parts:-

Intrinsic value: Option premium, defined in earlier section, consists of two components – intrinsic value and time value. For an option, intrinsic value refers to the amount by which option is in the money i.e. the amount an option buyer will realize, before adjusting for premium paid, if he exercises the option instantly. Therefore, only in-the-money options have intrinsic value whereas at-the-money and out-of-the-money options have zero intrinsic value. The intrinsic value of an option can never be negative. Thus, for call option which is in-the-money, intrinsic value is the excess of spot price (S) over the exercise price (X). Thus, intrinsic value of call option can be calculated as S-X, with minimum value

possible as zero because no one would like to exercise his right under no advantage condition.

Similarly, for put option which is in-the-money, intrinsic value is the excess of exercise price (X) over the spot price (S). Thus, intrinsic value of put option can be calculated as: X-S, with minimum value possible as zero because no one would like to exercise his right under non advantage conditions.

Time value: The difference between option premium and intrinsic value is the time value of that Option. ATM and OTM option will have only time value because the intrinsic value of such option is zero. 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. Therefore, everything else remaining the same, call option for two months maturity would be priced higher than the call option at the same strike price for one month maturity.

The time value reflects the probability that the option will gain in intrinsic value or profitable to exercise before its maturity. Therefore, higher time to expiration, higher the probability and higher the time value. Please note that at expiry the option value is its intrinsic value and time value will be zero.

4.5.2 Option Pricing Fundamentals

On what basis did market participants come to these values of the premiums? What are the parameters that affect these values? Are these fixed by the stock exchanges, by RBI or by SEBI? The answer lies in understanding what affects options. Prices are never fixed by stock exchanges or RBI or SEBI or anybody for that matter. In fact, price discovery is a very critical and basic component of markets. Stock exchanges only provide a platform where buyers and sellers meet, and SEBI's role is to ensure smooth functioning of our markets. Any option's value increases or decreases depending upon different variables. Each variable has its impact on an option. The impact can be same or different for a call and put option. As explained in the earlier section, option premium is the sum of intrinsic value and time value. As long as the option is not expired, there will always be some time value. Intrinsic value may or may not be there, depending upon whether the option is ITM, ATM or OTM. Time value of the option in turn depends upon how much time is remaining for the option to expire and how volatile is the underlying.

Thus there are five fundamental parameters on which the option price depends:
1) Spot price of the underlying asset
2) Strike price of the option
3) Volatility of the underlying asset's price
4) Time to expiration
5) Interest rates

These factors affect the premium/ price of options (both American & European) in several ways.

Spot price of the underlying asset

The option premium is affected by the price movements in the underlying instrument. If price of the underlying asset goes up, the value of the call option increases, while the value of the put option decreases. Similarly, if the price of the underlying asset falls, the value of the call option decreases, while the value of the put option increases.

Strike Price

If all the other factors remain constant but the strike price of option increases, intrinsic value of the call option will decrease and hence its value will also decrease. On the other hand, with all the other factors remaining constant, increase in strike price of option increases the intrinsic value of the put option which in turn increases its option value.

Volatility

It is the magnitude of movement in the underlying asset's price, either up or down. It affects both call and put options in the same way. Higher the volatility of the underlying stock, higher the premium because there is a greater possibility that the option will move in-the-money during the life of the contract.

Higher volatility = Higher premium, Lower volatility = Lower premium (for both call and put options).

Time to expiration

The effect of time to expiration on both call and put options is similar to that of volatility on option premiums. Generally, longer the maturity of the option greater is the uncertainty and hence the higher premiums. If all other factors affecting an option's price remain same, the time value portion of an option's premium will decrease with the passage of time. This is also known as time decay. Options are known as 'wasting assets', due to this property where the time value gradually falls to zero.

It is also interesting to note that of the two component of option pricing (time value and intrinsic value), one component is inherently biased towards reducing in value, i.e. time value. So if all things remain constant throughout the contract period, the option price will always fall in price by expiry. Thus option sellers are at a fundamental advantage as compared to option buyers as there is an inherent tendency in the price to go down.

Interest Rates

The "interest rate" referred to in relation to the prices of options is what is known as the "Risk Free Interest Rate". Interest rates are slightly complicated because they affect different options, differently. In simpler way high interest rates will result in an increase in the value of a call option and a decrease in the value of a put option.

The relationship between different factors and value of call/ put option is given in the table below. The arrow depicts the rise or fall in prices of options contracts when one of the parameter changes in value while other parameters remain unchanged.

Factor	Change in Factor	Call Premium	Put Premium
Spot Price	Increase	↑	↓
Spot Price	Decrease	↓	↑
Strike Price	Increase	↓	↑
Strike Price	Decrease	↑	↓
Volatility	Increase	↑	↑
Volatility	Decrease	↓	↓
Time to Expiry	Longer	↑	↑
Time to Expiry	Shorter	↓	↓
Interest Rates	Increase	↑	↓
Interest Rates	Decrease	↓	↑

4.5.3 Option Greeks

Option premiums change with changes in the factors that determine option pricing i.e. factors such as strike price, volatility, term to maturity etc. "Greeks" is a term used in the options market to describe the different dimensions of risk involved in taking an options position. There are five primary Greek risk measures represented by Delta, Gamma, Theta, Vega and Rho.

Delta: The most important of the 'Greeks' is the option's "Delta". This measures the sensitivity of the option value to a given small change in the price of the underlying asset. It may also be seen as the speed with which an option moves with respect to price of the underlying asset.

Delta = Change in option premium/ Unit change in price of the underlying asset.

Delta of a long call option (and/ or short put) is always positive and ranges between 0 and 1 and for a long put (and/or short call) is always negative and ranges between 0 and -1.

Delta for call option
Assume a call option has a delta of 0.3 or 30 per cent – what does this mean?
Well, as we know the delta measures the rate of change of premium for every unit change in the underlying. So a delta of 0.3 indicates that for every 1-point change in the underlying, the premium is likely change by 0.3 units, or for every 100-point change in the underlying the premium is likely to change by 30 points. The following example should help you understand this better:

Price of USDINR @ 9:30 AM is at Rs. 75.80

Option Strike = 75.50 **Call Option**
Premium = Rs. 0.45
Delta of the option = + 0.55

Scenario 1: Price of USDINR @ 3:00 PM is expected to reach Rs. 76.00
What is the likely option premium value at 3:00 PM?
We know the Delta of the option is 0.55, which means for every 1-point change in the underlying the premium is expected to change by 0.55 points. We are expecting the underlying to change by 0.20 paise (76.00 – 75.80), hence the premium is supposed to increase by
= 0.20*0.55
= 0.11
Therefore the new option premium is expected to trade around **0.56** (0.45+0.11)
(Here, we assume that other factors like volatility etc. will remain constant).

Scenario 2: Price of USDINR @ 3:00 PM is expected to reach Rs. 75.60
What is the likely option premium value at 3:00 PM?
We know the Delta of the option is 0.55, which means for every 1-point change in the underlying the premium is expected to change by 0.55 points. We are expecting the underlying to change by -0.20 paise (75.60 – 75.80), hence the premium is supposed to increase by
= -0.20*0.55
= -0.11
Therefore the new option premium is expected to trade around **0.34** (0.45-0.11)

Gamma (γ)
It measures change in delta with respect to change in price of the underlying asset. This is called a second derivative option with regard to price of the underlying asset. It is calculated as the ratio of change in delta for a unit change in market price of the underlying asset.

Gamma = Change in an option delta / Unit change in price of underlying asset

Gamma works as an acceleration of the delta, i.e. it signifies the speed with which an option will go either in-the-money or out-of-the-money due to a change in price of the underlying asset.

For example consider this – The delta and Gamma of an ATM Put option is -0.50 and 0.004 respectively. Remember Put options have a negative Delta. Gamma as you notice is a positive number i.e., +0.004. The underlying moves by 10 points without specifying the direction, so let us figure out what happens in both cases.

Case 1 – Underlying moves up by 10 points
Delta = – 0.5

Gamma = 0.004
Change in underlying = 10 points
Change in Delta = Gamma * Change in underlying = 0.004 * 10 = 0.04
New Delta = -0.5 + 0.04 = **– 0.46**
(The Put option loses delta when underlying increases)

Case 2 – Underlying goes down by 10 points
Delta = – 0.5
Gamma = 0.004
Change in underlying = – 10 points
Change in Delta = Gamma * Change in underlying = 0.004 *(– 10) = – 0.04
New Delta = – 0.5 + (-0.04) = **– 0.54**
(The Put option gains delta when underlying goes down)

Theta (θ)
It is a measure of an option's sensitivity to time decay. Theta is the change in option price given a one-day decrease in time to expiration. It is a measure of time decay. Theta is generally used to gain an idea of how time decay is affecting your option positions.

Theta = Change in an option premium / Change in time to expiry

Other things being equal, options tend to lose time value each day throughout their life. This is due to the fact that the uncertainty element in the price decreases. Theta is expressed in points lost per day when all other conditions remain the same. Time runs in one direction; hence theta is always a positive number, however as it is a loss in options value, it is sometimes written as a negative number. A Theta of -0.5 indicates that the option premium will lose -0.5 points for every day that passes by. For example, if an option is trading at Rs.2.75 with theta of -0.05 then it will trade at Rs.2.70 the following day (provided other things are kept constant). A long option (option buyer) will always have a negative theta meaning all else equal, the option buyer will lose money on a day-by-day basis. A short option (option seller) will have a positive theta. Theta is a friendly Greek to the option seller.

Vega (v)
This is a measure of the sensitivity of an option price to changes in market volatility. It is the change of an option premium for a given change in the underlying volatility.

Vega = Change in an option premium / Change in volatility

Vega is positive for a long call and a long put. An increase in the assumed volatility of the underlying increases the expected pay-out from a long option, whether it is a call or a put.

Since options gain value with increase in volatility, the vega is a positive number, for both calls and puts. For example – if the option has a vega of 0.15, then for each % change in

volatility, the option will gain or lose 0.15 in its theoretical value. The effect of volatility is highest when there are more days left for expiry.

In October USDINR spot is trading at Rs. 76.50 and a November expiry 76.80 call is trading for Rs.0.10. Let's assume that the vega of the option is 0.02 and that the underlying volatility is 10%. If the underlying volatility increased by 1% to 11%, then the price of the option should rise to 0.10 + (1 x 0.02) = 0.12.

However, if the volatility had gone down by 2% to 8% instead, then the option price should drop to 0.10 - (2 x 0.02) = Rs.0.06.

Rho (ρ)

Rho is the change in option price given a one percentage point change in the risk-free interest rate. Rho measures the change in an option's price per unit increase in the cost of funding the underlying.

Rho = Change in an option premium / Change in cost of funding of the underlying

Call options generally rise in price as interest rates increase and put options generally decrease in price as interest rates increase. Thus, call options have positive rho, while put options have negative rho. Assume that put option is priced at Rs. 0.50 and has a rho of -0.05. If interest rates were to decrease from 5 per cent to 4 per cent, then the price of this put option would increase from Rs.0.50 to Rs.0.55. In this same scenario, assuming the call option mentioned above with price 0.25, its price would decrease from Rs 0.25 to Rs. 0.20.

4.5.4 Put-Call Parity

Put-call parity shows the relationship that has to exist between European put and call options that have the same underlying asset, expiration, and strike prices. Put-Call parity holds only for a European option. It shows that value of European call with certain exercise price and exercise date can be deduced from the value of a European put with the same exercise price and exercise date and vice versa.

Put-call parity is stated using this equation-

$C + PV(x) = P + S$

Here-

- C stands for the price of the call option
- PV(x) is the present value of x (the strike price), as subtracted from the value it has on the date of expiration, as considered at a risk-free rate
- P is the price of the put

- S is the spot price (current market value) the underlying asset

4.6 Option Pricing Methodology

There are various option pricing models which traders use to arrive at the right value of the option. Some of the most popular models are briefly discussed below:

4.6.1 The Binomial Pricing Model

The binomial option pricing model was developed by William Sharpe in 1978. It has proved over time to be the most flexible, intuitive and popular approach to option pricing. It can be used for pricing European as well as American option. The binomial model represents the price evolution of the option's underlying asset as the binomial tree of all possible prices at equally-spaced time steps from today under the assumption that at each step, the price can only move up and down at fixed rates and with respective simulated probabilities. This is a very accurate model as it is iterative, but also very lengthy and time consuming.

4.6.2 The Black & Scholes Model

The Black & Scholes model was published in 1973 by Fisher Black and Myron Scholes. It is one of the most popular, relatively simple and fast modes of calculation. Unlike the binomial model, it does not rely on calculation by iteration. This model is used to calculate a theoretical call price (ignoring the dividends paid during the life of the option) using the five key determinants of an option's price: stock price, strike price, volatility, time to expiration, and short-term (risk free) interest rate.

Call and Put option price can be calculated as:

$C = SN(d_1) - Xe^{-rt}N(d_2)$

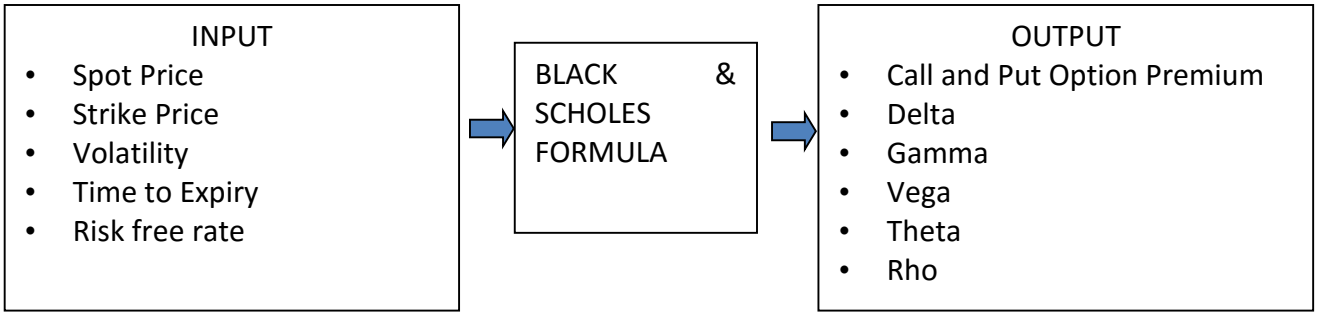
$P = Xe^{-rt}N(-d_2) - SN(-d_1)$

Where, $d1 = [\ln(S/X)+(r+v^2/2)*t]/(v*\sqrt{t})$

$d2 = d1 - v*\sqrt{t}$

And the variables are:

- S = stock price
- X = strike price
- t = time remaining until expiration, expressed in years
- r = current continuously compounded risk-free interest rate
- v = annual volatility of stock price (the standard deviation of the short-term returns over one year)
- In = natural logarithm
- N(x) = standard normal cumulative distribution function
- e = the exponential function



The Black-Scholes model was designed to value options that can be exercised only at maturity and whose underlying assets do not pay dividends. In addition, options are valued based on certain assumption like markets are random, zero transaction cost etc. In practice, assets do pay dividends, options sometimes get exercised early, and exercising an option can affect the value of the underlying asset. Trader may modify the formula to adjust for the effect of dividend etc.

Dividends: The payment of a dividend reduces the stock price; note that on the ex-dividend day, the stock price generally declines. Consequently, call options become less valuable and put options more valuable, as expected dividend payments increase. There are two ways of dealing with dividends in the Black & Scholes model:

1. Short-term options: One approach to dealing with dividends is to estimate the present value of expected dividends that will be paid by the underlying asset during the option life and subtract it from the current value of the asset to use as S in the model. Modified stock price = Current stock price – Present value of expected dividends during the life of the option.

2. Long-term options: Since it becomes less practical to estimate the present value of dividends for longer maturity options, an alternate approach can be used. If the dividend yield (y = Dividends/Current value of the asset) on the underlying asset is expected to remain unchanged during the life of the option, the Black-Scholes model can be modified to take dividends into account.

In India, for computation of theoretical price of exchange traded currency option Black-Scholes options pricing model is used.

4.6.3 Black (1976) Model

The original Black–Scholes model has undergone several theoretical developments. One such development for the valuation of futures options is introduced by Black (1976). Black proposed a formula for options under the assumption that investors generate risk less hedges between options and the futures or forward contracts. The problem of negative cost of carry was addressed by using 'forward prices' in the option pricing model instead of 'spot prices'. Black observed that actual forward prices not only incorporate cost of carry but also takes into account other irregularities in the market. In his proposed model,

he substituted spot price (S) by the discounted value of future price ($F*e^{-rt}$) in the original Black-Scholes model. Black's model found application in valuing options on physical commodities where future price is a better alternative input for valuing options. Its primary applications are for pricing options on future contracts, bond options, interest rate cap and floors, and swaptions.

The Call options prices as per Black's formula can be observed solving following equation:

$C = Fe^{-rt}*N(d_1) – Xe^{-rt}*N(d_2)$

$= e^{-rt} [F*N(d_1)-X*N(-d_2)]$

The corresponding Put price,

$P=e^{-rt} [X*N(-d_2)-F*N(-d_1)]$

Where $d1= \frac{\ln (F/X) + (\sigma^2/2)t}{\sigma*\sqrt{t}}$

$d2= \frac{\ln (F/X) - (\sigma^2/2)t}{\sigma*\sqrt{t}} = d1 - \sigma*\sqrt{t}$

And the variables are

- F = future price
- X = strike price
- t = time remaining until expiration, expressed in years
- r = current continuously compounded risk-free interest rate
- σ = volatility
- In = natural logarithm
- N(x) = standard normal cumulative distribution function
- e = the exponential function

The important difference between Black's and Black-Scholes is that Black uses forward/future prices and Black-Scholes uses spot prices. In India, for computation of theoretical price, of exchange traded interest rate option (underlying is government securities) Black 1976 options pricing model is used.

4.7 Implied Volatility (IV)

Different types of volatility that exist – Historical Volatility, Forecasted Volatility, and Implied Volatility.

Historical Volatility, in the financial market world, we take the past closing prices of the stock/index/bonds/currency rate and calculate the historical volatility. Historical volatility is very easy to calculate and helps us with most of the day-to-day requirements – for

instance historical volatility can 'somewhat' be used in the options calculator to get option price.

Forecasted Volatility refers to the act of predicting the volatility over the desired time frame. There are a few good statistical models are available to forecast volatility.

Implied Volatility (IV) represents the market participant's expectation on volatility. Implied volatility can be thought of as consensus volatility arrived amongst all the market participants with respect to the expected amount of underlying price fluctuation over the remaining life of an option. Implied volatility is reflected in the price of the premium. IV is a metric used by investors to estimate future fluctuations (volatility) of a security's price based on certain predictive factors. Implied volatility is denoted by the symbol σ (sigma). It can often be thought to be a proxy of market risk. It is commonly expressed using percentages and standard deviations over a specified time horizon. IV doesn't predict the direction in which the price change will proceed. For example, high volatility means a large price swing, but the price could swing upward (very high), downward (very low), or fluctuate between the two directions. Low volatility means that the price likely won't make broad, unpredictable changes. When applied to the financial market, implied volatility generally increases in bearish markets, when investors believe equity prices will decline over time. IV decreases when the market is bullish. This is when investors believe prices will rise over time. Bearish markets are considered to be undesirable and riskier to the majority of equity investors.

Implied volatility can thus be derived from the cost of the option. In fact, if there were no options traded on a given underlying, there would be no way to calculate implied volatility. It is the only factor in the model that isn't directly observable in the market. Instead, the mathematical option pricing model uses other factors to determine implied volatility and the option's premium. Implied volatility is a dynamic figure that changes based on activity in the options marketplace. Usually, when implied volatility increases, the price of options will increase as well, assuming all other things remain constant. So when implied volatility increases after a trade has been placed, it's good for the option owner and bad for the option seller. Conversely, if implied volatility decrease after you enter the trade, the price of options usually decreases. That's good if you are an option seller and bad if you are an option owner (i.e., for long option position).

4.8 Pay off Diagrams for Options

Having gone through the basic terminology used in the options market, let us get to the pay-off profile of various option positions.

Long on Option

Buyer of an option is said to be “long on option”. As described above, he/she would have a right and no obligation with regard to buying / selling the underlying asset in the contract. When you are long on option contract:

- You have the right to exercise that option.
- Your potential loss is limited to the premium amount you paid for buying the option.
- Profit would depend on the level of underlying asset price at the time of exercise/expiry of the contract.

Short on Option

Seller of an option is said to be “short on option”. As described above, he/she would have obligation but no right with regard to selling/buying the underlying asset in the contract. When you are short (i.e., the writer of) an option contract:

- Your maximum profit is the premium received.
- You can be assigned an exercised. All option writers should be aware that assignment is a distinct possibility.
- Your potential loss is theoretically unlimited.

Now, let us understand each of these positions in detail:

4.8.1 Long Call

On October 1, 2021, USDINR is trading at Rs. 74.40. You buy a call option with strike price of 74.50 at a premium of Rs. 0.20 with expiry date October 27, 2021. A Call option gives the buyer the right, but not the obligation to buy the underlying at the strike price. So in this example, you have the right to buy USD at Rs. 74.50. You may buy or you may not buy, there is no compulsion. If USDINR rate is above Rs. 74.50 at expiry, you will exercise the option, else you will let it expire. What will be your maximum profits/ losses under different conditions at expiry, we will try to find out using pay off charts.

If on expiry USDINR rate is Rs. 74.25, you will not exercise the right to buy the underlying (which you have got by buying the call option) as USD is available in the market at a price lower than your strike price. Why will you buy something at Rs.74.50 when you can have the same thing at Rs. 74.25? So, you will forego the right. In such a situation, your loss will be equal to the premium paid, which in this case is Rs. 0.20.

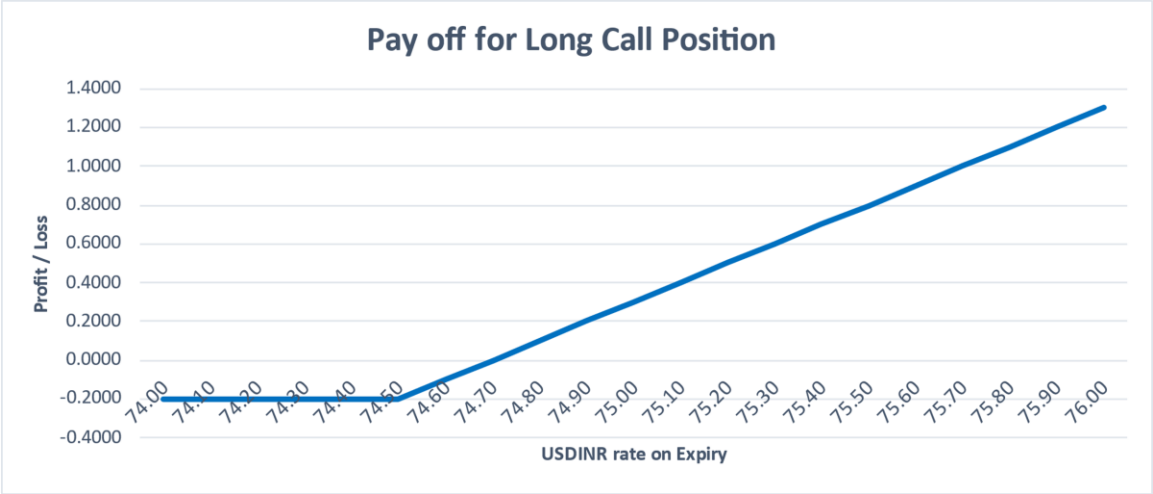
If on expiry if USDINR rate was at Rs. 74.70, you will exercise the option and buy USD at Rs.74.50 and make profit by selling it at Rs. 74.70. In this transaction you will make a profit of Rs. 0.20, but you have already paid this much money to the option seller right at the beginning, when you bought the option. So, Rs.74.70 is the Break-Even Point (BEP) for this option contract. A general formula for calculating BEP for call options is strike price plus premium (X + P).

If USDINR rate were to close at Rs. 74.90, you will exercise the option and buy USD at Rs.74.50 and sell it in the market at Rs.74.90, thereby making a profit of Rs. 0.40. But since

you have already paid Rs. 0.20 as option premium, your net profit would be 0.40 – 0.20 =Rs.0.20. Similar to futures, options can be settled through physical delivery, or it can be cash settled. In case of cash settled option contract, on exercise option buyer will receive only the profit amount i.e. Rs.0.40.

For profits/losses for other values, a table is given below. This table is used to draw the pay off diagram:

Strike Price	Rs. 74.50		
Premium	Rs. 0.20		
USDINR rate @ Expiry	Premium Paid	Profit on Exercise	Pay-off for Long Call Position
	(A)	(B)	(C) = (A) + (B)
74.00	-0.2000	0.0000	-0.2000
74.10	-0.2000	0.0000	-0.2000
74.20	-0.2000	0.0000	-0.2000
74.30	-0.2000	0.0000	-0.2000
74.40	-0.2000	0.0000	-0.2000
74.50	-0.2000	0.0000	-0.2000
74.60	-0.2000	0.1000	-0.1000
74.70	-0.2000	0.2000	0.0000
74.80	-0.2000	0.3000	0.1000
74.90	-0.2000	0.4000	0.2000
75.00	-0.2000	0.5000	0.3000
75.10	-0.2000	0.6000	0.4000
75.20	-0.2000	0.7000	0.5000
75.30	-0.2000	0.8000	0.6000
75.40	-0.2000	0.9000	0.7000
75.50	-0.2000	1.0000	0.8000
75.60	-0.2000	1.1000	0.9000
75.70	-0.2000	1.2000	1.0000
75.80	-0.2000	1.3000	1.1000
75.90	-0.2000	1.4000	1.2000
76.00	-0.2000	1.5000	1.3000



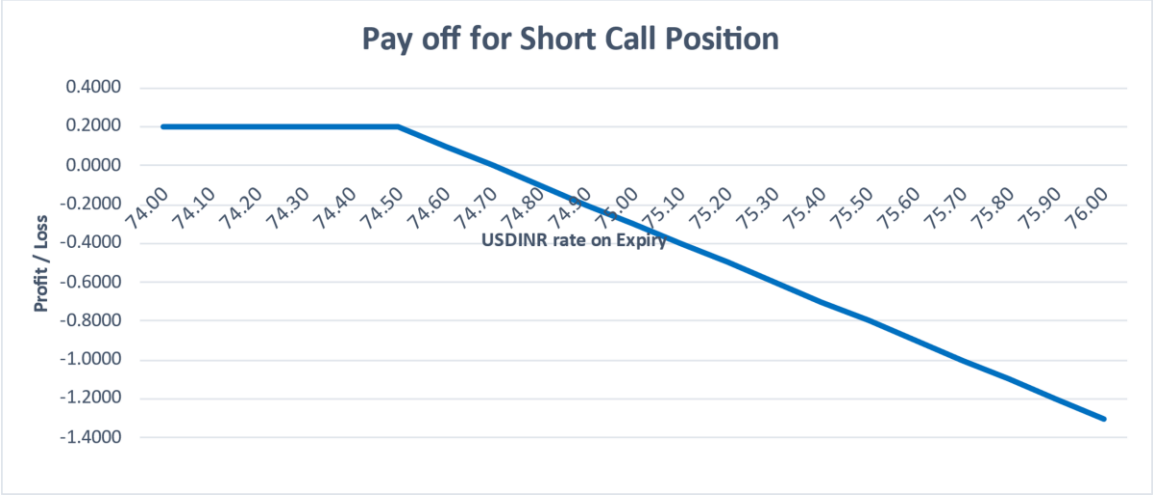
You can see from the diagram that maximum loss for such option buyer will be Rs. 0.20. The lot size of Exchange traded currency option is 1000 USD, so the maximum loss per lot will be Rs. 200 (=1000*0.20).

4.8.2 Short Call

Whenever someone buys a call option, there has to be a counterparty, who has sold that call option. If the maximum loss for a long call position is equal to the premium paid, it automatically means that the maximum gain for the short call position will be equal to the premium received. Similarly, if maximum gain for long call position is unlimited, then even maximum loss for the short call position has to be unlimited. Lastly, whenever, the long call position is making losses, the short call position will make profits and vice versa. Hence, if we have understood long call pay off, short call pay off chart will be just the water image of the long call pay off.

Strike Price	Rs. 74.50		
Premium	Rs. 0.20		
USDINR rate @ Expiry	Premium Received	Loss on Exercise	Pay-off for Short Call Position
	(A)	(B)	(C) = (A) + (B)
74.00	0.2000	0.0000	0.2000
74.10	0.2000	0.0000	0.2000
74.20	0.2000	0.0000	0.2000
74.30	0.2000	0.0000	0.2000
74.40	0.2000	0.0000	0.2000
74.50	0.2000	0.0000	0.2000
74.60	0.2000	-0.1000	0.1000
74.70	0.2000	-0.2000	0.0000
74.80	0.2000	-0.3000	-0.1000
74.90	0.2000	-0.4000	-0.2000

75.00	0.2000	-0.5000	-0.3000
75.10	0.2000	-0.6000	-0.4000
75.20	0.2000	-0.7000	-0.5000
75.30	0.2000	-0.8000	-0.6000
75.40	0.2000	-0.9000	-0.7000
75.50	0.2000	-1.0000	-0.8000
75.60	0.2000	-1.1000	-0.9000
75.70	0.2000	-1.2000	-1.0000
75.80	0.2000	-1.3000	-1.1000
75.90	0.2000	-1.4000	-1.2000
76.00	0.2000	-1.5000	-1.3000



The pay-off chart for a short call position is shown above. Maximum gain for an option seller, as explained earlier, will be equal to the premium received, whereas maximum loss can be unlimited (when price starts moving above BEP). BEP for a short call position will also be equal to X + P. BEP is independent of position (long or short), it is instrument specific (call option).

4.8.3 Long Put

On October 1, 2021, USDINR is trading at Rs. 74.40. You buy a put option with strike price of 74.50 at a premium of Rs. 0.30 with expiry date October 27, 2021. A Put option gives the buyer the right, but not the obligation to sell the underlying at the strike price. So in this example, you have the right to sell USD at Rs. 74.50. You may sell or you may not sell, there is no compulsion. If USDINR rate is below Rs. 74.50 at expiry, you will exercise the option; else you will let it expire. What will be your maximum profits/ losses under different conditions at expiry, we will try to find out using pay off diagrams.

If on expiry USDINR rate is Rs. 74.75, you will not exercise the right to sell the underlying (which you have got by buying the put option) as USDINR can be sold in the market at a

price higher than your strike price. Why will you sell something at Rs.74.50 when you can sell the same thing at Rs. 74.75? So you will forego the right. In such a situation, your loss will be equal to the premium paid, which in this case is Rs. 0.30.

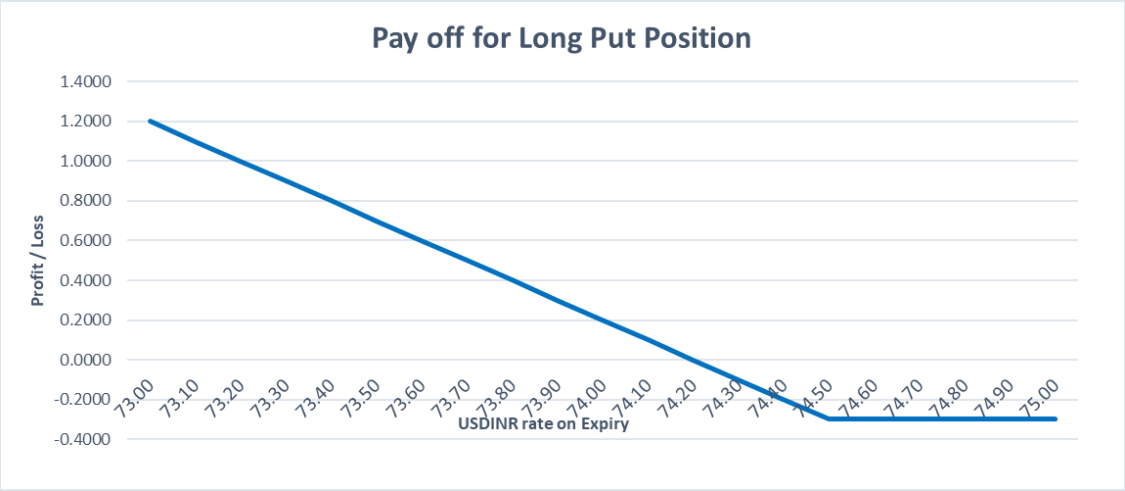
If on expiry if USDINR rate were at Rs. 74.20, you will exercise the option and sell USD at Rs.74.50 and make profit by buying it at Rs. 74.20. In this transaction you will make a profit of Rs. 0.30, but you have already paid this much money to the option seller right at the beginning, when you bought the option. So Rs.74.20 is the Break-Even Point (BEP) for this option contract. A general formula for calculating BEP for put options is strike price minus premium (X - P).

If USDINR were to close at Rs. 74.00, you will exercise the option and sell USD at Rs.74.50 and buy it in the market at Rs.74.00, thereby making a profit of Rs. 0.50. But since you have already paid Rs. 0.30 as option premium, your actual profit would be 0.50 – 0.30 = Rs.0.20. In case of cash settled option contract, on exercise option buyer will receive only the profit amount i.e. Rs.0.50.

For profits/losses for other values, a table is given below. This table is used to draw the pay off diagram:

Strike Price	Rs. 74.50		
Premium	Rs. 0.30		
USDINR rate @ Expiry	Premium Paid	Profit on Exercise	Pay-off for Long Put Position
	(A)	(B)	(C) = (A) + (B)
73.00	-0.3000	1.5000	1.2000
73.10	-0.3000	1.4000	1.1000
73.20	-0.3000	1.3000	1.0000
73.30	-0.3000	1.2000	0.9000
73.40	-0.3000	1.1000	0.8000
73.50	-0.3000	1.0000	0.7000
73.60	-0.3000	0.9000	0.6000
73.70	-0.3000	0.8000	0.5000
73.80	-0.3000	0.7000	0.4000
73.90	-0.3000	0.6000	0.3000
74.00	-0.3000	0.5000	0.2000
74.10	-0.3000	0.4000	0.1000
74.20	-0.3000	0.3000	0.0000
74.30	-0.3000	0.2000	-0.1000
74.40	-0.3000	0.1000	-0.2000
74.50	-0.3000	0.0000	-0.3000
74.60	-0.3000	0.0000	-0.3000

74.70	-0.3000	0.0000	-0.3000
74.80	-0.3000	0.0000	-0.3000
74.90	-0.3000	0.0000	-0.3000
75.00	-0.3000	0.0000	-0.3000



You can see from the diagram that maximum loss for such option buyer will be Rs. 0.30. The lot size of Exchange traded currency option is 1000 units, so the maximum loss per lot will be Rs. 300 (=1000*0.30)

4.8.4 Short Put

What will be the position of a put option seller/writer? Just the opposite of that of the put option buyer. When long put makes profit, short put will make loss. If maximum loss for long put is the premium paid, then maximum profit for the short put has to be equal to the premium received. If maximum profit for long put is when price of underlying falls to zero at expiry, then that also will be the time when short put position makes maximum loss. Whenever, the long-put position is making losses, the short put position will make profits and vice versa. Hence, if we have understood long put pay off, short put pay off chart will be just the water image of the long put pay off.

Strike Price	Rs. 74.50		
Premium	Rs. 0.30		
USDINR rate @ Expiry	Premium Received	Loss on Exercise	Payoff for Short Put Position
	(A)	(B)	(C) = (A) + (B)
73.00	0.3000	-1.5000	-1.2000
73.10	0.3000	-1.4000	-1.1000
73.20	0.3000	-1.3000	-1.0000
73.30	0.3000	-1.2000	-0.9000
73.40	0.3000	-1.1000	-0.8000

73.50	0.3000	-1.0000	-0.7000
73.60	0.3000	-0.9000	-0.6000
73.70	0.3000	-0.8000	-0.5000
73.80	0.3000	-0.7000	-0.4000
73.90	0.3000	-0.6000	-0.3000
74.00	0.3000	-0.5000	-0.2000
74.10	0.3000	-0.4000	-0.1000
74.20	0.3000	-0.3000	0.0000
74.30	0.3000	-0.2000	0.1000
74.40	0.3000	-0.1000	0.2000
74.50	0.3000	0.0000	0.3000
74.60	0.3000	0.0000	0.3000
74.70	0.3000	0.0000	0.3000
74.80	0.3000	0.0000	0.3000
74.90	0.3000	0.0000	0.3000
75.00	0.3000	0.0000	0.3000

The pay-off chart for a short put position is shown above. Maximum gain for an option seller, as explained earlier, will be equal to the premium received, whereas maximum loss will be upto underlying price become zero (when price starts moving below BEP). BEP for a short put position will also be equal to (X – P). BEP is independent of position (long or short), it is instrument specific (put option).

As can be seen above, options are products with asymmetric risk exposure i.e., the gains when the underlying asset moves in one direction is significantly different from the losses when the underlying asset moves in the opposite direction. For example, under a call option, when a stock price goes down, the loss incurred by the buyer of this option is limited to the purchase price of the option. But if the stock price goes up, the buyer of the

call gains in proportion to the rise in the stock's value, thereby giving asymmetric pay off. In contrast to this, futures have symmetric risk exposures (symmetric pay off).

4.8.5 Square-off Option positions

Similar to futures, options positions can also be square-off (closing of position) before expiry of contracts. For e.g. An exporter hedges 20000 USD by buying February 2022 USDINR put option at a strike of Rs 75.00 when available price was Rs 0.20/0.21. He received USD in his account of 15th February. The exporter decided to cancel the option on 15th February when available price for the same contract was Rs 0.10/0.11. The net pay-off for exporter will be:
Premium paid: Rs. 4200/- (20000*0.21)
Premium received at the time of square off: Rs. 2000 (20000*0.10)
Net gain / (loss) : (Rs. 2200)

4.9 Contract Specification of Exchange Traded Currency Options

Based on RBI and SEBI guideline, various kinds of Exchange traded currency options (also include cross currency options) have been launched by Exchanges. Currently Exchange traded currency options are part of currency derivatives segment trade along with currency futures and interest rate derivatives. Exchange traded currency options are regulated by SEBI as well as RBI. In 2010, the first exchange traded currency option was launched on USDINR pair and then on EURINR, GBPINR and JPYINR. Subsequently, the Exchange traded currency option were launched on cross currency pairs (Contracts involving other than Indian Rupee) namely EURUSD, GBPUSD and USDJPY. Details of the currency options contracts which are currently active on Exchanges are provided below:

Exchange Traded Currency Option Contracts (Contracts involving Indian Rupee)

Parameters	**Contract Details**			
Underlying	US Dollar-Indian Rupee **(USDINR)**	Euro – Indian Rupee **(EURINR)**	Pound Sterling – Indian Rupee **(GBPINR)**	Japanese Yen-Indian Rupee **(JPYINR)**
Unit of Trading	1 contract denotes 1000 US Dollars.	1 contract denotes 1000 Euro.	1 contract denotes 1000 Pound Sterling.	1 contract denotes 100000 Japanese Yen.
Price Quotation	The premium for options contract shall be quoted in Indian Rupees			
Contract Value	Trade Price * 1000			
Tick Size	Rs. 0.0025 (0.25 paise)			

Price Band	The price bands for options shall be based on the delta of the options contract and calculated using the previous close price of the underlying and volatility. The price band so computed shall be subject to a minimum operating range which would be applicable for all contracts. The bands shall be computed for each options contract on a daily basis and shall be applicable from the next trading day. The operating range may be flexed during the day in case the option traded prices crosses certain percentage of the set range.
Trading Hours	Monday to Friday: 9:00 a.m. to 5:00 p.m. On contract expiry, the expired contract will be available for trading up to 12:30 pm.
Contract Trading Cycle	3 Serial monthly contracts followed by 3 quarterly contracts of the cycle March/June/September/December. For Weekly USDINR Options- 11 serial weekly contracts expiring on Friday, excluding expiry week wherein monthly contracts expires on a Friday. New serial weekly/monthly futures contracts shall be introduced after expiry of the respective week's/month contract.
Option Type	Premium style European Call & Put Options
Strike Price Interval	Rs. 0.25 (For e.g. strike will be available at RS. 74.50, 74.75, 75.00, 75.25, 75.50, etc.)
No. of strikes	Minimum 12 In-the-money, Minimum 12 Out-of-the-money and 1 Near-the-moneys shall be provided for all available contracts.
Expiry Day	For weekly contract: Every Friday at 12:30 pm. If the Friday of the expiring week is a trading holiday, then the expiry day is the previous trading day. For monthly contract: Two working days prior to the last business day of the expiry month at 12:30 PM.
Mode of Settlement	Cash Settled in Indian Rupee
Final Settlement Price	FBIL reference rate on last trading day
Final Settlement	Final Settlement : T+2

Cross Currency Option Contracts (Contracts involving other than Indian Rupee)

Parameters	**Contract Details**		
Underlying	Euro- US Dollar **(EURUSD)**	Pound Sterling - US Dollar **(GBPUSD)**	US Dollar - Japanese Yen **(USDJPY)**
Unit of Trading	1 contract denotes 1000 Euro	1 contract denotes 1000 Pound Sterling	1 contract denotes 1000 US Dollars
Price Quotation	The premium will be quoted in USD	The premium will be quoted in USD	The premium will be quoted in JPY
Contract Value	Trade Price * 1000 (in quote currency)		
Tick Size	USD 0.0001	USD 0.0001	JPY 0.01
Price Band	The price bands for options shall be based on the delta of the options contract and calculated using the previous close price of the underlying and volatility. The price band so computed shall be subject to a minimum operating range which would be applicable for all contracts. The bands shall be computed for each options contract on a daily basis and shall be applicable from the next trading day. The operating range may be flexed during the day in case the option traded prices crosses certain percentage of the set range.		
Trading Hours	Monday to Friday: 9:00 a.m. to 7:30 p.m. On contract expiry, the expired contract will be available for trading up to 12:30 pm.		
Contract Trading Cycle	3 serial monthly contracts, followed by 3 quarterly contracts of the cycle March/June/September/December. For Weekly USDINR Options- 11 serial weekly contracts expiring on Friday, excluding expiry week wherein monthly contracts expires on a Friday. New serial weekly/monthly futures contracts shall be introduced after expiry of the respective week's/month contract.		
Option Type	Premium style European Call & Put Options		
Strike Price Interval	USD 0.005	USD 0.005	JPY 0.5
No. of strikes	Minimum 12 In-the-money, Minimum 12 Out-of-the-money and 1 Near-the-moneys shall be provided for all available contracts.		

Expiry Day	For weekly contract: Every Friday at 12:30 pm. If the Friday of the expiring week is a trading holiday, then the expiry day is the previous trading day. For monthly contract: Two working days prior to the last business day of the expiry month at 12:30 PM.
Mode of Settlement	Cash Settled in Indian Rupee
Final Settlement Price	The final settlement price for cross-currency futures contracts shall be computed using the FBIL reference rate for USD-INR and the corresponding exchange rate published by FBIL for EUR-INR, GBP-INR and JPY-INR, as applicable, on the last trading day of the contract.
Final Settlement	Final Settlement : T+2

4.10 Comparison of Exchange Traded Currency Option and OTC Currency Option

The difference between Exchange Traded Currency Options contract with OTC Option contract is almost similar to futures and forward contracts. In India, currently only European Options i.e. right to exercise option on specific date only, are allowed in OTC as well as in ETCD. Exchange traded currency options have some distinct advantages over OTC currency options as they eliminate counterparty risk and offer more liquidity and price transparency. However, it should be noted that OTC products enjoy the benefit of being customized to meet specific client requirements. Table below mentions a few differences between Exchange Traded currency option and OTC currency option[7]

Comparison of OTC Currency Option and Exchange Traded Currency Option

Parameters	OTC Currency Option	Exchange Traded Currency Option
Operational mechanism	Mainly bilateral over-the-counter (OTC) transactions. Can be traded on electronic trading platform.	Contract between two parties through centralized trading platform of Exchanges
Terms of Contracts	Non- Standardized. Each Contract is custom designed and hence unique in terms of contract size, expiration date, asset quality, asset type etc.	Standardized Contract in terms of underlying asset, lot size, expiry date etc.

[7] The comparison mainly based on Indian Foreign Exchange Market

Price Discovery	Mainly through negotiation. Price can be differed from bank to bank who act as market maker in OTC option. Further, price can differ within bank for one customer to another customer.	Price discovery through free interaction of buyers and sellers on centralized trading platform
Liquidation Profile	Low, as contracts are tailor made catering to the needs of the parties involved. Further, contracts are not easily accessible to other market participants	High, as contracts are standardized exchange-traded contracts.
Settlement	Mainly bilateral settlement by parties. Mainly delivery based settlement. Mainly gross settlement basis i.e. without netting.	Clearing and Settlement through clearing corporation with guaranteed settlement. Currently cash settled in INR with multilateral netting.
Quality of information and dissemination	Very less. Mainly post trade	Traded nationwide. Information is available online on trading platform and websites.
Advantages	• Since customized, product can provide perfect hedge. • Delivery based settlement more helpful to importer and exporter • Less operation issues related to margin.	• Price transparency • Elimination of Counterparty credit risk as settlement guarantee by clearing corporation of Exchanges • Access to all types of market participants • Credit Agnostic • Lower liquidity risk compared to OTC • Generally lower impact cost • Easy entry and exit • Flexibility in using various option strategies
Limitations	• Liquidity risk • Counter party risk • Limited market participants • Certain restriction on use of various option strategies	• May lead to imperfect hedge as amount and settlement dates are standardized. • Since, it is cash settled, user need to access cash/spot market for actual delivery of currency.

		• Operational issues related to margin.

Chapter 5: Strategies Using Exchange Traded Currency Derivatives

LEARNING OBJECTIVES:

After studying this chapter, you should know about following:

- Role of Hedgers, Speculators and Arbitragers
- Hedging, Speculative and Arbitrage Transaction using ETCD
- Option Strategies with Pay-off
- Spread Trading using ETCD
- Limitation of Exchange Traded Currency Derivatives for Hedgers

5.1 Market Participants

The uses of Exchange Traded Currency Derivatives (ETCD) market could be better understood by first understanding different type of market participants and their objectives. There could be three different types of market participants. The description of these participants and their objective is given below:

Hedgers

Hedgers are traders who wish to protect themselves from the risk involved in price movements of underlying i.e. foreign currency. 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 foreign currency risk using Exchange Traded Currency Derivatives. The exposure could be because of imports/ exports of goods/services, foreign investments or foreign expenditure on account of travel, studies or any other type of need resulting in FX exposure. In other words, anyone having a mismatch in foreign exchange earnings and expenses would have an actual exposure to foreign exchange.

The objective of hedgers is to reduce the volatility in future cash flows by locking in the future currency rates. For example, a shoe exporter from India buys all its raw material domestically and sells all its goods to Europe. For him, the expenditure is in INR while revenue is in EUR. Assume he has shipped an order of EUR 1 million for which payment will be received after 3 months. During the 3 month credit period, shoe exporter is carrying the risk of EURINR price movement. He is interested to hedge the currency price risk in case of EUR depreciate against INR. Hence, shoe exporter will go short on EURINR futures contracts or buy EURINR put option. In this example, the shoe exporter is a hedger.

Speculators

This set of market participants does not have a real exposure to foreign currency risk. These participants assume FX risk by taking a view on the market direction and hope to

make returns by taking the price risk. 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. In other words, hedgers often depend on speculators to take the other side of their trades (i.e. act as counter party) and to add depth and liquidity to the markets that are vital for the functioning of a derivatives market.

Let's understand the same with an example:
For instance, assume, a farmer expects the price of wheat to fall in near future. He wants to hedge his price risk on wheat produce for next 3 months till the time he has actual produce in his hands and so would like to lock at the forward/ futures price now. Accordingly, farmer can sell futures contracts on the expected quantity of produce. In order to sell this futures contract, he needs a buyer. This buyer may be someone who needs wheat after three months, may be a flour mill or a bakery. However, most of the times, there is a demand supply mismatch in the market and the trader fills the gap between demand and supply. Here trader, counterparty to the farmer, is thinking in contrary i.e. this buyer will buy only if he thinks that actual price of wheat is going to be higher than the contract price for futures three months down the line. Further, the profit of trader would depend upon actual wheat price being more than the contracted futures price at the maturity of futures contract. If it is so, trader would make money otherwise he would lose money.

In example of shoe exporter as hedger, he will be required someone who wants to take long position in EURINR futures. The trader say "AD Category-I Bank"[8] is thinking contrary i.e. this buyer will buy EURINR only if he thinks that EUR will appreciate against INR three month down the line. Further, the profit of trader would depend upon actual EURINR price being more than the contracted futures price at the maturity of futures contract. If it is so, trader would make money otherwise he would lose money.

Arbitragers

In addition to hedgers and traders, to establish a link between various markets like spot and derivatives, we need a third type of participants called arbitragers. These arbitragers continuously hunt for the profit opportunities across the markets and products and seize those by executing trades in different markets and products simultaneously. Importantly, arbitragers generally lock in their profits unlike traders who trade naked contracts. 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. Arbitragers lock in a profit by simultaneously entering opposite side transactions in two or more markets. For

[8] AD Category-I Bank means a bank (Scheduled Commercial, State or Urban Cooperative) which is authorized under Section 10(1) of FEMA to undertake all current and capital account transactions according to the directions issued by the RBI from time to time

example, if the relation between forward prices and futures prices differs, it gives rise to arbitrage opportunities. Difference in the equilibrium prices determined by the demand and supply at two different markets also gives opportunities to arbitrage. As more and more market players will realize this opportunity, they may also implement the arbitrage strategy and in the process will enable market to come to a level of equilibrium and the arbitrage opportunity may cease to exist.

For example, at the end of day (1st March 2022):
Market price of underlying asset (in Rs.) 100
March futures 110
Lot size 50
Here an arbitrageur will buy in the cash market at Rs. 100 and sell in the Futures market at Rs. 110, thereby locking Rs. 10 as his profit on each unit. On the expiration date, suppose price (in Rs.) of the underlying asset is 108.

Cash Market	Futures
Buy 100	Sell 110
Sell 108	Buy 108
+8	+2

Total profit would therefore be 10 (8+2)*50 = Rs. 500.

Suppose price (in Rs.) of the underlying asset is 95 on the expiration date.

Cash Market	Futures
Buy 100	Sell 110
Sell 95	Buy 95
-5	+15

Total profit is 10 (-5+15)*50 = Rs. 500.

In the entire activity, the transaction cost, impact cost, carry cost/opportunity cost/borrowing cost, etc. have not been considered. In real life, all these costs have to be considered.

Here, it may be interesting to look at the risks these arbitragers carry. As seen before, arbitragers are executing positions in two or more markets/products simultaneously. Even if the systems are seamless and electronic and both the legs of transaction are liquid, there is a possibility of some gap between the executions of both the orders. If either leg of the transaction is illiquid then the risk on the arbitrage deal is huge as only one leg may get executed and another may not, which would open the arbitrager to the naked exposure of a position. Similarly, if contracts are not cash settled in both or one of the markets, it would need reversal of trades in the respective markets, which would result in additional risk on unwinding position with regard to simultaneous execution of the trades. These profit focused traders and arbitragers fetch enormous liquidity to the products traded on the exchanges. This liquidity in turn results in better price discovery, lesser cost of transaction and lesser manipulation in the market.

5.2 Hedging Through Exchange Traded Currency Derivatives

For hedging we must decide three parameters: (1) Underlying; (2) Market Side; and (3) Contract Month.

Underlying will depend on the currency pair we want to trade or foreign currency in which we are going to trade. For e.g. Exporter who will receive money in EUR and want to convert in INR will trade in EURINR derivatives contract and Importer will want to convert INR into USD for making payment will trade USDINR contract.

Market side (i.e. buy or sell futures contract / buy put or call option) will depend on whether the participant has to receive (for e.g. exporter) or pay (for e.g. importer) foreign currency. In case participant is expected to receive EUR, carry the risk of depreciating value of EUR against INR. Hence, participant will either sell EURINR future or buy EURINR "Put" option. Similarly, participant who has to make payment in USD, carry the risk of appreciation of USD against INR. Hence, participant will either buy USDINR futures or buy USDINR "Call" option.

Contract Month will depend on the timing of expected receipt or payment of foreign currency. If participant expected to receive EUR after three month, he will choose a contract that expires in three month; if participant expected to pay USD after one month, he would choose a contract that expires in one month; and so on. The following summarizes the selection of these parameters.

Parameter	**Selection**
Underlying	Linked to Currency Pair For EUR, use EURINR futures/option. For USD, use USDINR futures/option
Market side	Linked to receipt or payment of foreign currency For receipt of EUR against INR, either sell EURINR futures or buy EURINR Put option For payment of USD against INR, either buy USDINR futures or buy USDINR Call option
Contract Month	Linked to when we expect the receive foreign currency or have to pay foreign currency The timing of expected receipt or payment of foreign currency should be the same as contract month of futures

Similarly, for trading we must decide three parameters 1) Underlying; (2) Market Side; and (3) Contract Month.

For e.g. trader expect that USD will appreciate against INR in next 2 months, trader will buy USDINR futures or buy USDINR call option contract maturing after 2 month. If trader expect rupee will appreciate against EUR (i.e. EUR will depreciate against INR) in next three months, trader will sell EURINR futures or buy EURINR put option contract maturing after 3 month.

5.2.1 Combined position of futures and underlying export trade remittance

An exporter of garments from India has contracted to export 10,000 pieces of shirt to a large retailer in US. The agreed price was USD 100 per shirt and the payment would be made three months after the shipment. The exporter would take one month to manufacture the shirt. The exporter had used the prevailing spot price of 75 as the budgeted price while signing the export contract. To avoid the FX risk, the exporter sells four month futures at the price of 76 which is expiring on March 29, 2022. The exporter receives USD on March 15, 2022, well on time and he converts USD to INR in the OTC market at the then prevailing price of 77 and also cancels the futures contract at the same time at the price of 77.20. How much was the effective currency price for the exporter?

The effective price would be summation of effect of change in USDINR price on the underlying trade transaction and the effect of change in future price on the currency futures contract.

- Underlying trade transaction: Against the budget of 75, the exporter realizes the price of 77 and therefore there is a net positive change of Rs 2
- Futures contract: Against the contracted price of 76, the exporter had to settle the contract at 77.20 and therefore resulting in a net negative change of Rs 1.20
- Combined effect: The combined effect of change in USDINR spot price and change in future price i.e. (Rs 2) + (- Rs 1.20) = + Rs 0.80
- Effective price: Therefore, the effective price was 75 (budgeted price) + 0.80 (effect of hedging and underlying trade transaction) i.e. Rs 75.80. (In other way: the effective price is Rs.77.00-Rs.1.20)

In the same example, assume that INR appreciated against USD at time of converting USD to INR the spot was 74 and futures contract's cancellation rate was 74.20, the effective currency price for the exporter would still be 75.80. This is because there would be a negative change of Rs 1 on underlying trade transaction and a positive change of Rs 1.80 on futures contract. Therefore, the net effect will be summation of –1 and +1.80 i.e. Rs 0.80.

Please notice that because of the futures contract exporter gets a price of 75.80 irrespective of depreciation or appreciation of INR. However, not using currency futures would have resulted in effective rate of 77 (in the first case when INR depreciated from 75 to 77) and effective rate of 74 (in the second case when INR appreciated from 75 to 74). Thus using currency futures, exporter is able to mitigate the risk of currency movement.

5.2.2 Combined position of futures and underlying import trade remittance

Let us take an example where an importer hedges only partial amount of total exposure. This example will also demonstrate the method of computing payoff when hedging is done for partial exposure.

An importer of pulses buys 1000 tons of chickpea at the price of USD1600 per ton. On the day of finalizing the contract, USDINR spot price was 75. The importer was not sure about the INR movement in future, but he was more biased towards INR appreciation. He decides to hedge half of the total exposure using currency futures and contracted a rate of 75.50 using two months futures contract. In the next two months, INR depreciated to 76.50 at the time of making import payment. On the day of making import payment, the futures contract price was at 76.70. What was the effective USDINR for the importer and what would it have been had he hedged the full exposure?

The effective price would be summation of final price at which import remittance was made and payoff from the futures contract.

- Futures contract: Against the contracted price of 75.50, the importer settled the contract at 76.70, thereby resulting in a net positive change of Rs 1.20. Since importer hedged only half of the total exposure, the net inflow from hedging would be available for half of total exposure.
- Effective price computation: Therefore the effective price would be 76.50 (final remittance price) for the unhedged part and 75.30 (= 76.50 – 1.20) for the balance half which was hedged. The figure of 75.30 is computed by deducting 1.20 (inflow from hedged position) from the spot price of 75.50. Therefore, final effective price would be:
  (76.50 x 0.5) + (75.30 x 0.5) = 75.90

Please note that since it is import payment and a lower USDINR exchange rate would be positive for the importer, therefore a positive inflow from future contract is reduced from the remittance price to compute effective price for the hedged part. As against the effective price of 75.90, the price would have been 75.30 had the importer decided to hedge the total exposure. Also note that without hedging, the effective price would have been 76.50 i.e., the price at which importer made the import remittance.

Some of the common purposes/ transactions, in addition to import/export, which could use currency futures for the purpose of hedging, are as follows:

- Payment in foreign currency for travel abroad, for education, for medical treatment, payment for employees based abroad, 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

5.2.3 Investment in Gold

Many investors in India is keen to invest in gold with a view of rising gold prices against USD. Investor 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. The investor is contemplating ways to remove the USDINR risk in ETF contract such that the investor is left only with gold related risk and related return without worrying about USDINR fluctuations. How can he use currency derivatives contract?

The investor could short USDINR currency futures/buy USDINR put option 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. If INR appreciates against USD, it will negatively impact gold ETF while it would positively impact the currency futures/ put option contract.

Please note that price of currency futures is a function of spot price and also premium/discount between the currency pair. Therefore, in the above example use of currency futures may not completely remove USDINR spot risk as the price of currency futures would also depend on change in USDINR premium over the contracted period.

5.2.4 Investment in assets outside India and repatriation of profit and capital

Currency derivatives could also be effectively used to hedge the currency risk when investing abroad. Let us take an example to explain it. 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 72 as against 75 which was the price at which he had converted INR to USD at the time of investing abroad.

Let us answer few questions using this example:

A. What is investor's return on capital in USD and INR? What would be his return in INR if it had depreciated to 78 at the time of converting USD to INR?
B. What could have investor done to de-risk his portfolio from currency risk?

A. Computing return in USD and INR:

The value of investment increased from USD 100,000 to USD 115,000 in one year. Therefore, the return in USD would be:

(115,000 - 100,000)/100,000 = 0.15 and in percentage terms it would be 15%.

In INR terms, the value of investment at the beginning was 7,500,000 and at maturity it is 8,280,000 (72 x 115,000). Therefore, the return in INR is:

(8,280,000 – 7,500,000)/(7,500,000) = 0.1040 and in percentage terms it would be 10.40%

Thus the return decreased from 15% to 10.40% due to INR appreciation from 75 to 72. However, if INR had depreciated from 75 to 78 the return would have increased to 19.60%.

((115,000 x 78) – 7,500,000)/ 7,500,000 = 0.1960. In percentage terms, it would be 19.60%

You would notice that return in INR is impacted by USDINR price movement. An investor whose objective is to execute a view on US equities and not on USDINR movement would want to de-risk the portfolio from currency risk.

B. De-risking the US equity portfolio from USDINR currency risk

The investor may short USDINR currency futures or buy USDINR put option for one year. This would allow him to sell USD to INR at a contracted price via derivatives contact and thus remove currency risk from the portfolio.

5.2.5 Trade remittance from multiple transactions

An international trading company has export revenue in USD, and it uses part of it to make import payments in EUR and balance is converted in INR. The company is concerned about EURUSD risk for its import payments. The company can go long on EURUSD futures contract for hedging the risk. In case EURUSD contract is illiquid and there is no price advantage, the company can short USDINR futures and long EURINR futures to hedge EURUSD.

A company in India has both imports and exports in USD. In such case the company can hedge only the residual currency risk provided there is not significant gap between remittance receivable and payable. In case of import is more than the export, the company can hedge the residual USDINR risk by going long on USDINR futures and vice versa.

5.2.6 Payment in foreign currency for education in abroad

A person required to pay education fee for his son in USD after 6 months. The current USDINR is trading at 67 and premium for 6 months is 2%. The person invested Rs. 200000 in Indian fixed income securities for 6 months @ rate of 6% p.a. The person hedge currency risk using USDINR 6 month futures. At the end of 6 months, how many USD can this person remit to his son for education fee.

Fixed Income investment = Rs. 200000
Interest on Fixed Income investment = 200000*6%*6/12= Rs. 6000

Total amount available after 6 months= Rs. 206000
6 month USDINR Future rate = 67 + 67*2% = 68.34
USD available after 6 months = 206000 / 68.34 = USD 3014

5.3 Option Trading Strategies

Having understood the risk / return profiles for vanilla call / put options in earlier chapter, now we turn to using these products to our advantage – called option strategies. The only limiting factor for strategies is the thought of the trader / strategy designer. As long as the trader can think of innovative combinations of various options, newer strategies will keep coming to the market. Exotic products (or 'exotics') are nothing but a combination of different derivative products. In this section, we will see some of the most commonly used strategies.

5.3.1 Option Spreads

Spreads involve combining options on the same underlying and of same type (call/ put) but with different strikes and maturities. These are limited profit and limited loss positions. They are primarily categorized into three sections as:

- Vertical Spreads
- Horizontal Spreads
- Diagonal Spreads

Vertical Spreads

Vertical spreads are created by using options having same expiry but different strike prices. Further, these can be created either using calls as combination or puts as combination. These can be further classified as:

- Bullish Vertical Spread
  - Using Calls
  - Using Puts
- Bearish Vertical Spread
  - Using Calls
  - Using Puts

5.3.1.1 Bullish Vertical Spread using Calls

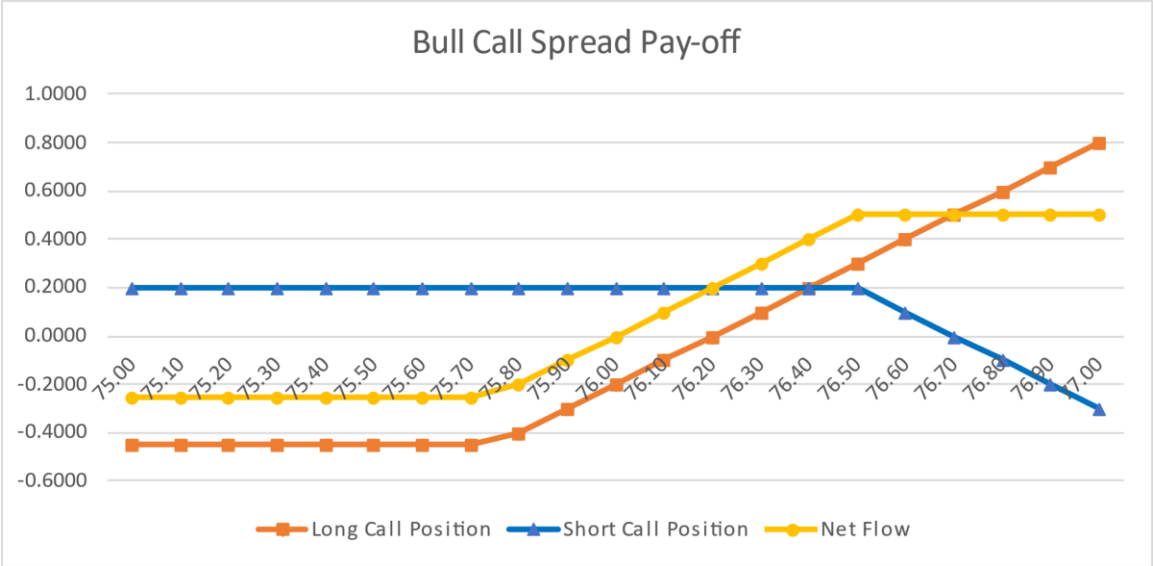
A bull spread is created when the underlying view on the market is positive, but the trader would also like to reduce his cost on position. So he takes one long call position with lower strike and sells a call option with higher strike. As lower strike call will cost more than the premium earned by selling a higher strike call, although the cost of position reduces, the position is still a net cash outflow position to begin with. Secondly, as higher strike call is shorted, all gains on long call beyond the strike price of short call would get negated by losses of the short call. To take more profits from his long call, trader can short as high

strike call as possible, but this will result in his cost coming down only marginally, as higher strike call will fetch lesser and lesser premium.

Say, for example, a trader is bullish on USDINR (assumes USD will appreciate against INR), so he decides to go long on 75.75 strike call option by paying a premium of 0.45 and he expects market to not go above 76.50, so he shorts a 76.50 call option and receives a premium of 0.20. His pay off for various price moves will be as follows:

Option Type	Call	Call
Long/Short	Long	Short
Strike Price	75.75	76.50
Premium	0.45	0.20
Spot	76.0000	

USDINR @ Expiry	Long Call Position	Short Call Position	Net Flow
75.00	-0.4500	0.2000	-0.2500
75.10	-0.4500	0.2000	-0.2500
75.20	-0.4500	0.2000	-0.2500
75.30	-0.4500	0.2000	-0.2500
75.40	-0.4500	0.2000	-0.2500
75.50	-0.4500	0.2000	-0.2500
75.60	-0.4500	0.2000	-0.2500
75.70	-0.4500	0.2000	-0.2500
75.80	-0.4000	0.2000	-0.2000
75.90	-0.3000	0.2000	-0.1000
76.00	-0.2000	0.2000	0.0000
76.10	-0.1000	0.2000	0.1000
76.20	0.0000	0.2000	0.2000
76.30	0.1000	0.2000	0.3000
76.40	0.2000	0.2000	0.4000
76.50	0.3000	0.2000	0.5000
76.60	0.4000	0.1000	0.5000
76.70	0.5000	0.0000	0.5000
76.80	0.6000	-0.1000	0.5000
76.90	0.7000	-0.2000	0.5000
77.00	0.8000	-0.3000	0.5000



As can be seen from the above pay off chart, it is a limited profit and limited loss position. Maximum profit in this position is Rs.0.50 (76.50-75.75-0.25), which will be when both option will get exercised i.e. on and above Rs. 76.50 and maximum loss is Rs.0.25 (0.45-0.20) when both option unexercised i.e. on or below Rs. 75.75 and BEP for this is Rs. 76.00 (75.75+0.45-0.20).

5.3.1.2 Bullish Vertical Spread Using Puts

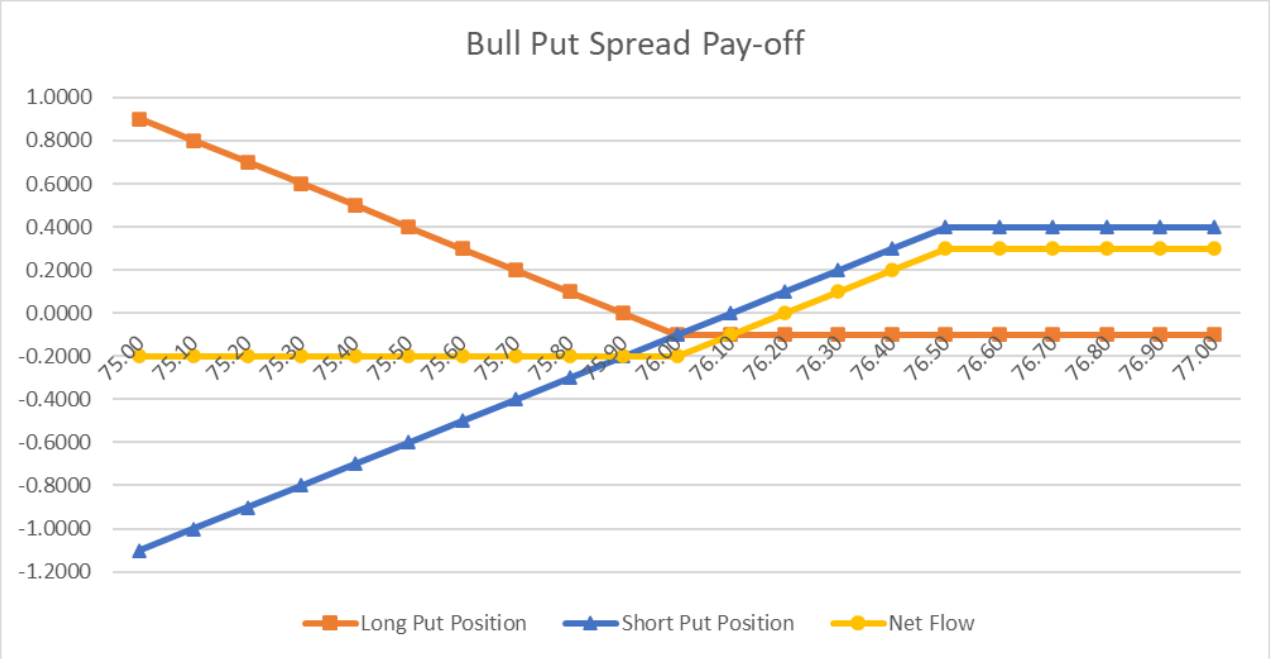
Here again, trader is bullish on USD against INR, hence, the trader would like to short a put option of USDINR. If prices go up, trader will end up with the premium on sold puts. However, in case prices go down, the trader would be facing risk of unlimited losses. In order to protect to his downside, he may buy a put option with a lower strike. While this would reduce his overall upfront premium, benefit would be the embedded insurance against unlimited potential loss on short put. This is a net premium receipt strategy.

Let us see this with the help of an example, where the trader goes short in a put option of strike 76.50 and receives a premium of 0.40 and goes long in a put option of strike 76.00 and pays a premium of 0.10:

Option Type	Put	Put
Long / Short	Long	Short
Strike Price	76	76.50
Premium	0.10	0.40
Spot	76.50	

USDINR @ Expiry	Long Put Position	Short Put Position	Net Flow
75.00	0.9000	-1.1000	-0.2000

75.10	0.8000	-1.0000	-0.2000
75.20	0.7000	-0.9000	-0.2000
75.30	0.6000	-0.8000	-0.2000
75.40	0.5000	-0.7000	-0.2000
75.50	0.4000	-0.6000	-0.2000
75.60	0.3000	-0.5000	-0.2000
75.70	0.2000	-0.4000	-0.2000
75.80	0.1000	-0.3000	-0.2000
75.90	0.0000	-0.2000	-0.2000
76.00	-0.1000	-0.1000	-0.2000
76.10	-0.1000	0.0000	-0.1000
76.20	-0.1000	0.1000	0.0000
76.30	-0.1000	0.2000	0.1000
76.40	-0.1000	0.3000	0.2000
76.50	-0.1000	0.4000	0.3000
76.60	-0.1000	0.4000	0.3000
76.70	-0.1000	0.4000	0.3000
76.80	-0.1000	0.4000	0.3000
76.90	-0.1000	0.4000	0.3000
77.00	-0.1000	0.4000	0.3000



As can be seen from the above pay off chart, it is a limited profit and limited loss position. Maximum profit in this position is 0.30 (0.40-0.10) and maximum loss is 0.20 (76.50-76.00-0.30) BEP for this spread is 76.20 (76.50-0.30). Maximum profit in this position will be

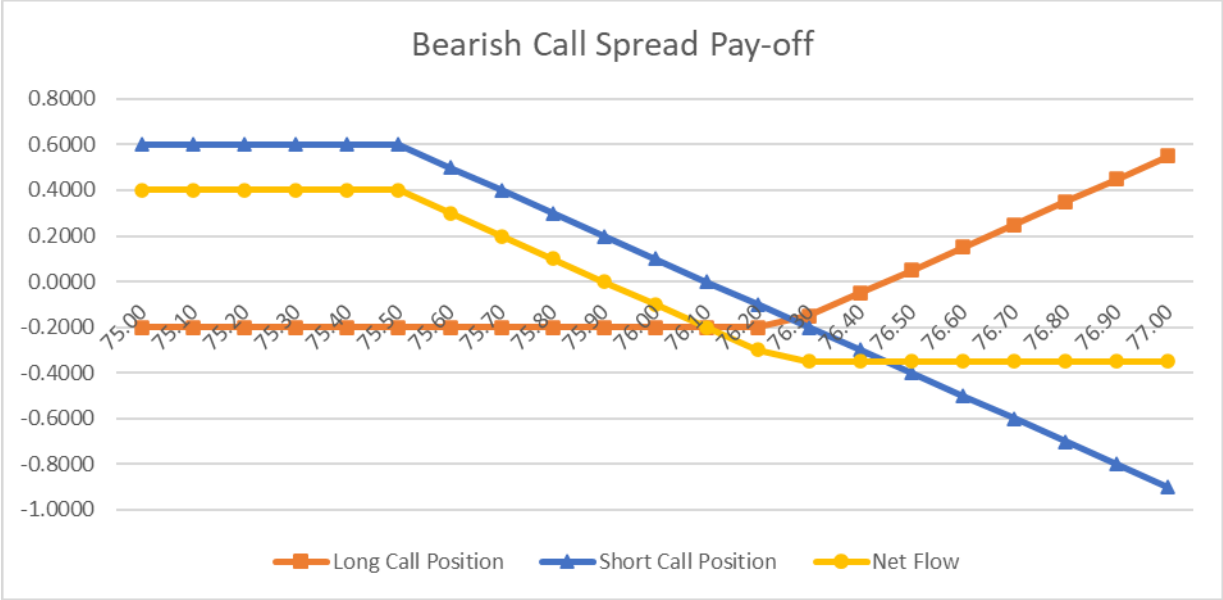
when both the options expire unexercised, and the maximum loss will be when both the options get exercised.

5.3.1.3 Bearish Vertical Spread using Calls

Here, the trader is bearish on the USDINR (i.e. assumes USD will depreciate against INR) and so he shorts a low strike high premium call option. The risk in a naked short call is that if prices rise, losses could be unlimited. So, to prevent his unlimited losses, he longs a high strike call and pays a lesser premium. Thus in this strategy, he starts with a net inflow.

Option Type	Call	Call
Long/Short	Long	Short
Strike Price	76.25	75.50
Premium	0.20	0.60
Spot	76.0000	

USDINR @ Expiry	Long Call Position	Short Call Position	Net Flow
75.00	-0.2000	0.6000	0.4000
75.10	-0.2000	0.6000	0.4000
75.20	-0.2000	0.6000	0.4000
75.30	-0.2000	0.6000	0.4000
75.40	-0.2000	0.6000	0.4000
75.50	-0.2000	0.6000	0.4000
75.60	-0.2000	0.5000	0.3000
75.70	-0.2000	0.4000	0.2000
75.80	-0.2000	0.3000	0.1000
75.90	-0.2000	0.2000	0.0000
76.00	-0.2000	0.1000	-0.1000
76.10	-0.2000	0.0000	-0.2000
76.20	-0.2000	-0.1000	-0.3000
76.30	-0.1500	-0.2000	-0.3500
76.40	-0.0500	-0.3000	-0.3500
76.50	0.0500	-0.4000	-0.3500
76.60	0.1500	-0.5000	-0.3500
76.70	0.2500	-0.6000	-0.3500
76.80	0.3500	-0.7000	-0.3500
76.90	0.4500	-0.8000	-0.3500
77.00	0.5500	-0.9000	-0.3500



As can be seen from the above pay-off chart, it is a limited profit and limited loss position. Maximum profit in this position is Rs. 0.40 (0.60-0.20) and maximum loss is Rs.0.35 (76.25-75.50-0.40). BEP for this position is 75.90 (75.50+0.40). Maximum profit in this position when bond prices will go down and both option will get unexercised and maximum loss when bond prices will go up and both option get exercised.

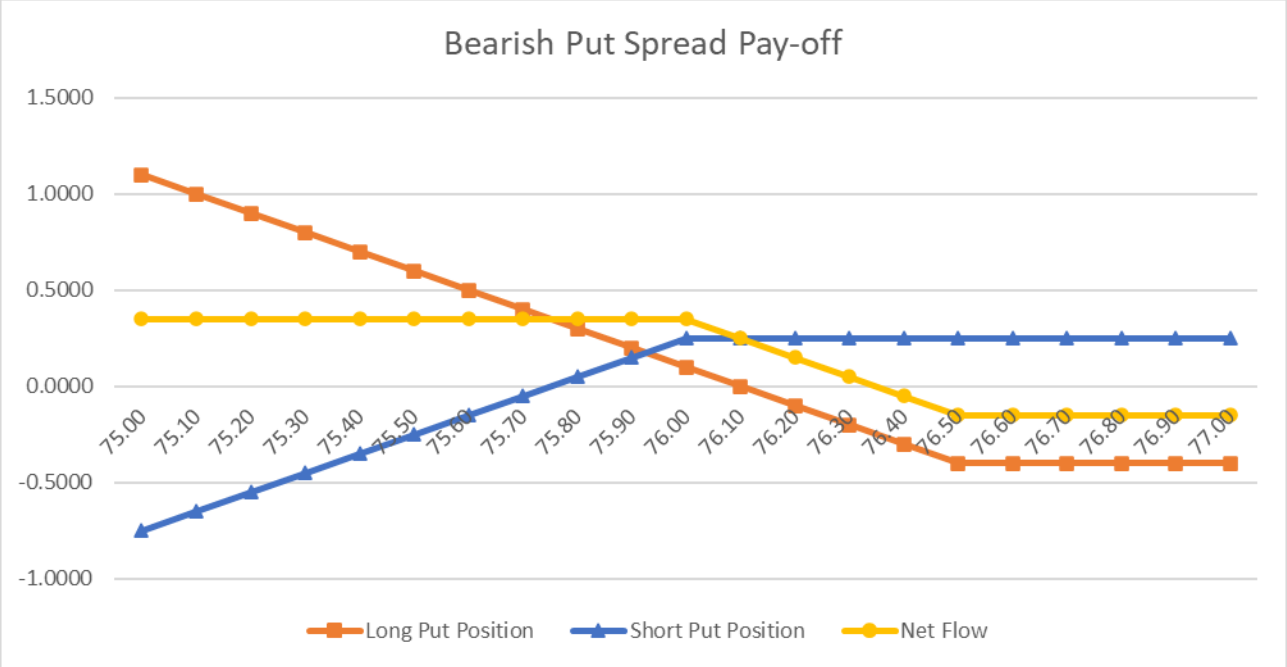
5.3.1.4 Bearish Vertical Spread using Puts

Here, again the trader is bearish on the USDINR (i.e. assumes USD will depreciate against INR) and so goes long in one put option by paying a premium. Further, to reduce his cost, he shorts another low strike put and receives a premium.

Option Type	Put	Put
Long / Short	Long	Short
Strike Price	76.50	76.00
Premium	0.40	0.25
Spot	76.400	

USDINR @ Expiry	Long Put Position	Short Put Position	Net Flow
75.00	1.1000	-0.7500	0.3500
75.10	1.0000	-0.6500	0.3500
75.20	0.9000	-0.5500	0.3500
75.30	0.8000	-0.4500	0.3500
75.40	0.7000	-0.3500	0.3500
75.50	0.6000	-0.2500	0.3500
75.60	0.5000	-0.1500	0.3500

75.70	0.4000	-0.0500	0.3500
75.80	0.3000	0.0500	0.3500
75.90	0.2000	0.1500	0.3500
76.00	0.1000	0.2500	0.3500
76.10	0.0000	0.2500	0.2500
76.20	-0.1000	0.2500	0.1500
76.30	-0.2000	0.2500	0.0500
76.40	-0.3000	0.2500	-0.0500
76.50	-0.4000	0.2500	-0.1500
76.60	-0.4000	0.2500	-0.1500
76.70	-0.4000	0.2500	-0.1500
76.80	-0.4000	0.2500	-0.1500
76.90	-0.4000	0.2500	-0.1500
77.00	-0.4000	0.2500	-0.1500



As can be seen from the above pay-off chart, it is a limited profit and limited loss position. Maximum profit in this position is Rs. 0.35 (76.50-76.00-0.15) and maximum loss is Rs.0.15 (0.40-0.25). BEP for this position is 76.35 (76.50-0.15). Maximum profit in this position when bond prices will go down and both option will get exercised and maximum loss when bond prices will go up and both option get unexercised.

5.3.2 Horizontal Spread

Horizontal spread involves same strike, same type but different expiry options. This is also known as time spread or calendar spread. Here, it is not possible to draw the payoff chart as the expiries underlying the spread are different. Underlying reasoning behind

horizontal spreads is that these two options would have different time values and the trader believes that difference between the time values of these two options would shrink or widen. This is essentially a play on premium difference between two options prices squeezing or widening.

5.3.3 Diagonal spread

Diagonal spread involves combination of options having same underlying but different expiries as well as different strikes. Again, as the two legs in a spread are in different maturities, it is not possible to draw pay offs here as well. These are much more complicated in nature and in execution.

5.3.4 Straddle

This strategy involves two options of same strike prices and same maturity. A long straddle position is created by buying a call and a put option of same strike and same expiry whereas a short straddle is created by shorting a call and a put option of same strike and same expiry.

5.3.4.1 Long Straddle

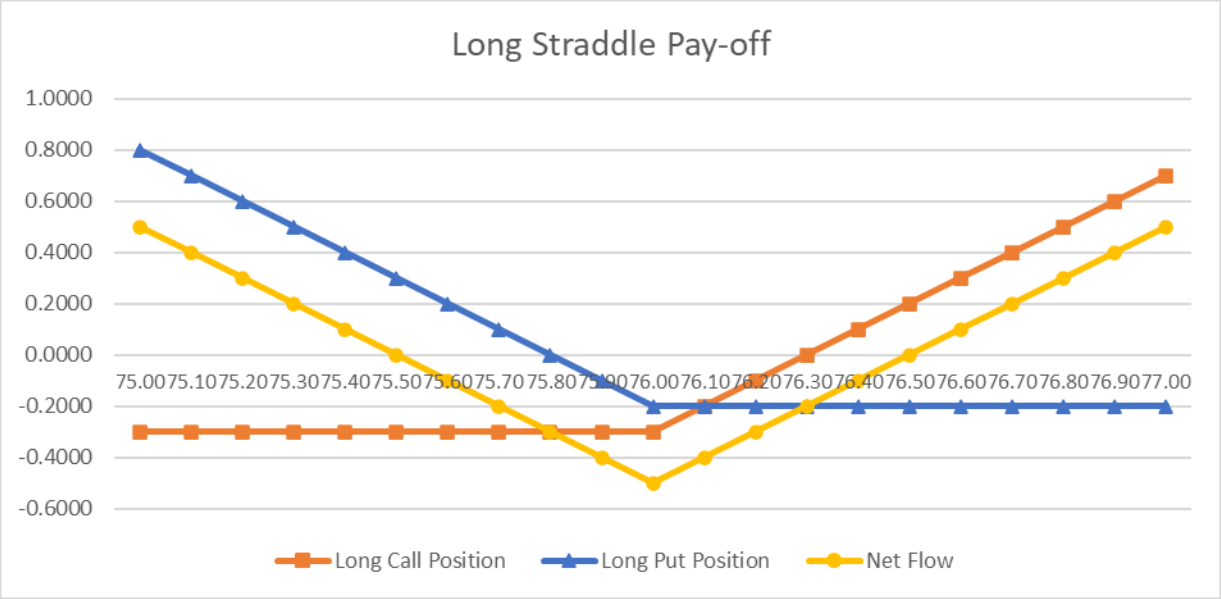
If a person buys both a call and a put at same strike price, then his maximum loss will be equal to the sum of these two premiums paid and, price movement from here (in either direction) would first result in that person recovering his premium and then making profit. This position is undertaken when trader's view on currency price is uncertain, but he thinks that in whatever direction the currency moves, it would move significantly in that direction.

As the currency keeps moving up, loss on long put position is limited to premium paid, whereas profit on long call position keeps increasing. Thus, it can be seen that for huge swings in either direction, the strategy yields profits. However, there would be a band within which the position would result into losses. This position would have two Break even points (BEPs) and they would lie at "Strike – Total Premium" and "Strike + Total Premium". Combined pay-off may be shown as follows:

Option Type	Call	Put
Long/Short	Long	Long
Strike Price	76	76
Premium	0.3	0.2
Spot	76.0000	

USDINR @ Expiry	Long Call Position	Long Put Position	Net Flow
75.00	-0.3000	0.8000	0.5000
75.10	-0.3000	0.7000	0.4000
75.20	-0.3000	0.6000	0.3000

75.30	-0.3000	0.5000	0.2000
75.40	-0.3000	0.4000	0.1000
75.50	-0.3000	0.3000	0.0000
75.60	-0.3000	0.2000	-0.1000
75.70	-0.3000	0.1000	-0.2000
75.80	-0.3000	0.0000	-0.3000
75.90	-0.3000	-0.1000	-0.4000
76.00	-0.3000	-0.2000	-0.5000
76.10	-0.2000	-0.2000	-0.4000
76.20	-0.1000	-0.2000	-0.3000
76.30	0.0000	-0.2000	-0.2000
76.40	0.1000	-0.2000	-0.1000
76.50	0.2000	-0.2000	0.0000
76.60	0.3000	-0.2000	0.1000
76.70	0.4000	-0.2000	0.2000
76.80	0.5000	-0.2000	0.3000
76.90	0.6000	-0.2000	0.4000
77.00	0.7000	-0.2000	0.5000



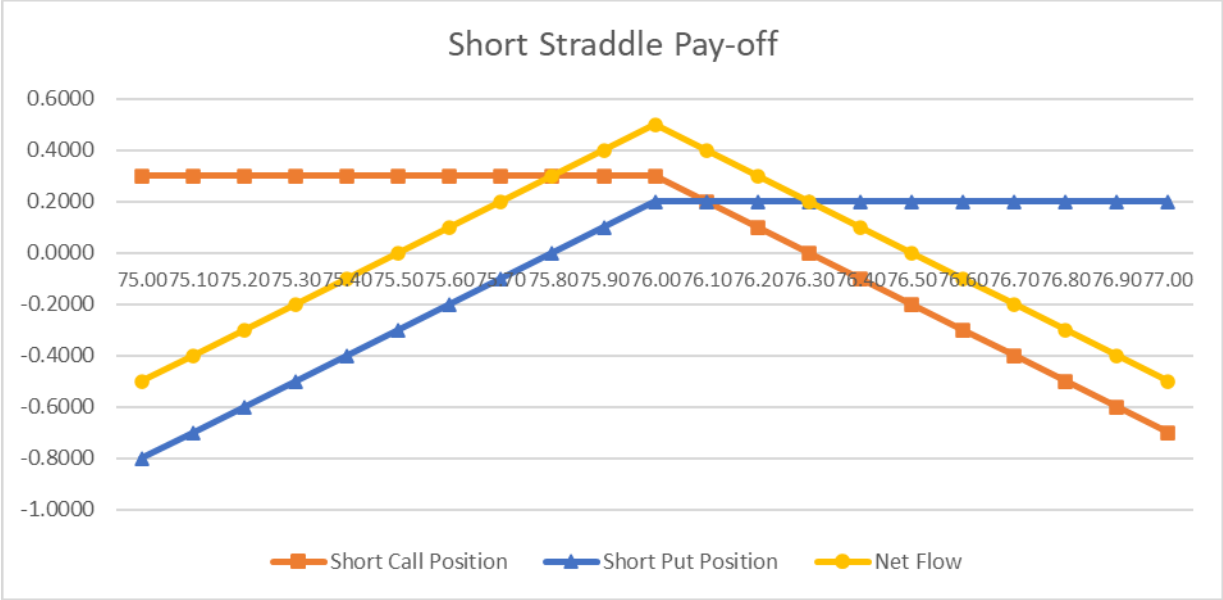
As can be seen from the above pay-off chart, it is limited loss and unlimited profit strategy. It may be noted from the table and picture, that maximum loss of Rs. 0.50 would occur to the trader if underlying expires at strike of option Rs.76.00. Further, as long as underlying expires between Rs.75.50 and Rs.76.50, he would always incur the loss and that would depend on the level of underlying. His profit would start only after recovery of his total premium of Rs.0.50, in either direction, and that is the reason there are two breakeven points in this strategy. Here, trader is bullish on volatility.

5.3.4.2 Short Straddle

This would be the exact opposite of long straddle. Here, trader's view is that the currency prices would not move much or remain stable (i.e. not much movement in currency rate). So, he sells a call and a put so that he can profit from the premiums. As position of short straddle is just opposite of long straddle, the payoff chart would be just inverted, so what was loss for long straddle would become profit for short straddle. Position may be shown as follows:

Option Type	Call	Put
Long/Short	Short	Short
Strike Price	76	76
Premium	0.3	0.2
Spot	76.0000	

USDINR @ Expiry	Short Call Position	Short Put Position	Net Flow
75.00	0.3000	-0.8000	-0.5000
75.10	0.3000	-0.7000	-0.4000
75.20	0.3000	-0.6000	-0.3000
75.30	0.3000	-0.5000	-0.2000
75.40	0.3000	-0.4000	-0.1000
75.50	0.3000	-0.3000	0.0000
75.60	0.3000	-0.2000	0.1000
75.70	0.3000	-0.1000	0.2000
75.80	0.3000	0.0000	0.3000
75.90	0.3000	0.1000	0.4000
76.00	0.3000	0.2000	0.5000
76.10	0.2000	0.2000	0.4000
76.20	0.1000	0.2000	0.3000
76.30	0.0000	0.2000	0.2000
76.40	-0.1000	0.2000	0.1000
76.50	-0.2000	0.2000	0.0000
76.60	-0.3000	0.2000	-0.1000
76.70	-0.4000	0.2000	-0.2000
76.80	-0.5000	0.2000	-0.3000
76.90	-0.6000	0.2000	-0.4000
77.00	-0.7000	0.2000	-0.5000



It should be clear that this strategy is limited profit and unlimited loss strategy and should be undertaken with significant care. Further, it will incur the loss for trader if market moves significantly in either direction – up or down.

5.3.5 Strangle

This strategy is similar to straddle in outlook but different in implementation, aggression and cost.

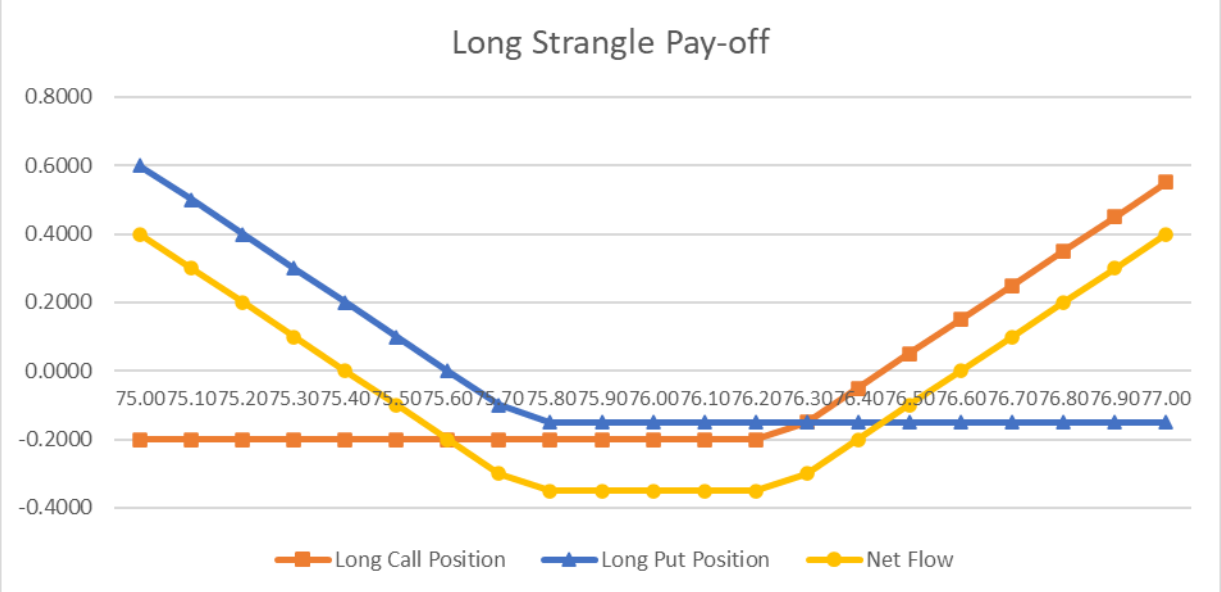
5.3.5.1 Long Strangle

As in case of long strangle, the outlook is that the market will move substantially in either direction, but while in straddle, both options have same strike price, in case of a strangle, the strikes are different. Also, both the options (call and put) in this case are out-of-the-money and hence premium paid is low.

Let us say the USDINR spot is Rs.76. Rs. 76.25 strike call is available at 0.20 and Rs.75.75 put is trading at a premium of 0.15. Both these options are out-of-the-money.
If a trader goes long on both these options, then his maximum cost would be equal to the sum of the premiums of both these options. This would also be his maximum loss in worst case situation. However, if market starts moving in either direction, his loss would remain same for some time and then reduce. And, beyond a point in either direction, he would make money.

Option Type	Call	Put
Long/Short	Long	Long
Strike Price	76.25	75.75
Premium	0.2	0.15
Spot	76.0000	

USDINR @ Expiry	Long Call Position	Long Put Position	Net Flow
75.00	-0.2000	0.6000	0.4000
75.10	-0.2000	0.5000	0.3000
75.20	-0.2000	0.4000	0.2000
75.30	-0.2000	0.3000	0.1000
75.40	-0.2000	0.2000	0.0000
75.50	-0.2000	0.1000	-0.1000
75.60	-0.2000	0.0000	-0.2000
75.70	-0.2000	-0.1000	-0.3000
75.80	-0.2000	-0.1500	-0.3500
75.90	-0.2000	-0.1500	-0.3500
76.00	-0.2000	-0.1500	-0.3500
76.10	-0.2000	-0.1500	-0.3500
76.20	-0.2000	-0.1500	-0.3500
76.30	-0.1500	-0.1500	-0.3000
76.40	-0.0500	-0.1500	-0.2000
76.50	0.0500	-0.1500	-0.1000
76.60	0.1500	-0.1500	0.0000
76.70	0.2500	-0.1500	0.1000
76.80	0.3500	-0.1500	0.2000
76.90	0.4500	-0.1500	0.3000
77.00	0.5500	-0.1500	0.4000



In this position, maximum profit for the trader would be unlimited in both the directions

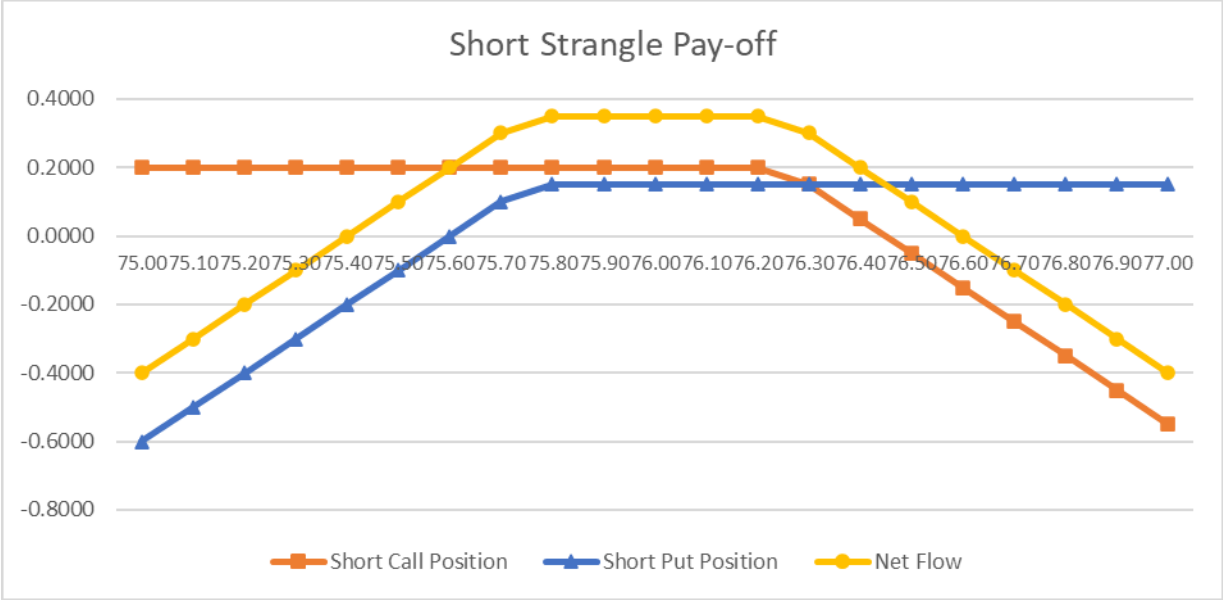
– up or down and maximum loss would be limited to Rs. 0.35, which would occur if underlying expires at any price between 75.75 and 76.25. Position would have two BEPs at 75.40 and 76.60. Until USDINR crosses either of these prices, trader would always incur loss.

5.3.5.2 Short Strangle

This is exactly opposite to the long strangle with two out-of-the-money options (call and put) shorted. Outlook, like short straddle, is that market will remain stable over the life of options. Pay offs for this position will be exactly opposite to that of a long strangle position. As always, the short position will make money, when the long position is in loss and vice versa.

Option Type	Call	Put
Long/Short	Short	Short
Strike Price	76.25	75.75
Premium	0.2	0.15
Spot	76.0000	

USDINR @ Expiry	Short Call Position	Short Put Position	Net Flow
75.00	0.2000	-0.6000	-0.4000
75.10	0.2000	-0.5000	-0.3000
75.20	0.2000	-0.4000	-0.2000
75.30	0.2000	-0.3000	-0.1000
75.40	0.2000	-0.2000	0.0000
75.50	0.2000	-0.1000	0.1000
75.60	0.2000	0.0000	0.2000
75.70	0.2000	0.1000	0.3000
75.80	0.2000	0.1500	0.3500
75.90	0.2000	0.1500	0.3500
76.00	0.2000	0.1500	0.3500
76.10	0.2000	0.1500	0.3500
76.20	0.2000	0.1500	0.3500
76.30	0.1500	0.1500	0.3000
76.40	0.0500	0.1500	0.2000
76.50	-0.0500	0.1500	0.1000
76.60	-0.1500	0.1500	0.0000
76.70	-0.2500	0.1500	-0.1000
76.80	-0.3500	0.1500	-0.2000
76.90	-0.4500	0.1500	-0.3000
77.00	-0.5500	0.1500	-0.4000



In this position, maximum loss for the trader would be unlimited in both the directions – up or down and maximum profit would be limited to Rs. 0.35, which would occur if underlying expires at any price between 75.75 and 76.25. Position would have two BEPs at 75.40 and 76.60. Until underlying crosses either of these prices, trader would always make profit.

5.3.6 Butterfly Spread

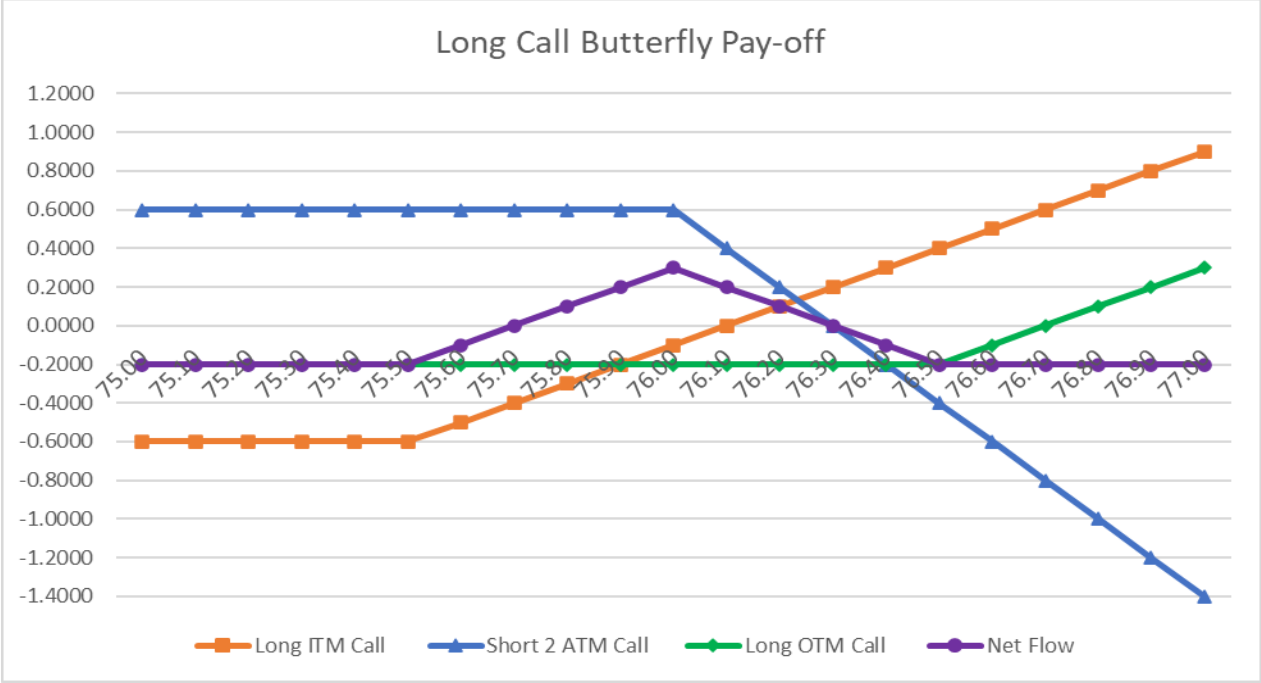
A butterfly spread is an options strategy that combines both bull and bear spreads. These are neutral strategies that come with a fixed risk and capped profits and losses. These spreads use four options and three different strike prices. There are multiple butterfly spread strategies like long call butterfly spreads, Short call butterfly spreads, Long put butterfly spread, Short put butterfly spread, Iron Butterfly Spread etc. We will see in detail "Long Call Butterfly spread" for understanding purpose.

Long Call Butterfly

Long Call Butterfly is a neutral strategy where very low volatility in the price of underlying is expected. The strategy is a combination of Bull Spread and Bear Spread. It involves Buy 1 ITM Call, Sell 2 ATM Calls and Buy 1 OTM Call. The strike prices of all Options should be at equal distance from the current price. The risk limited to net premium paid and profit is limited to difference between adjacent strikes minus net premium debit.

Option Type	Call	Call	Call
Long/Short	Long	Short	Long
Strike Price	75.5	76	76.5
Premium	0.6	0.3	0.2
No. of Lot	1	2	1
Spot	76.0000		

USDINR @ Expiry	Long ITM Call	Short 2 ATM Call	Long OTM Call	Net Flow
75.00	-0.6000	0.6000	-0.2000	-0.2000
75.10	-0.6000	0.6000	-0.2000	-0.2000
75.20	-0.6000	0.6000	-0.2000	-0.2000
75.30	-0.6000	0.6000	-0.2000	-0.2000
75.40	-0.6000	0.6000	-0.2000	-0.2000
75.50	-0.6000	0.6000	-0.2000	-0.2000
75.60	-0.5000	0.6000	-0.2000	-0.1000
75.70	-0.4000	0.6000	-0.2000	0.0000
75.80	-0.3000	0.6000	-0.2000	0.1000
75.90	-0.2000	0.6000	-0.2000	0.2000
76.00	-0.1000	0.6000	-0.2000	0.3000
76.10	0.0000	0.4000	-0.2000	0.2000
76.20	0.1000	0.2000	-0.2000	0.1000
76.30	0.2000	0.0000	-0.2000	0.0000
76.40	0.3000	-0.2000	-0.2000	-0.1000
76.50	0.4000	-0.4000	-0.2000	-0.2000
76.60	0.5000	-0.6000	-0.1000	-0.2000
76.70	0.6000	-0.8000	0.0000	-0.2000
76.80	0.7000	-1.0000	0.1000	-0.2000
76.90	0.8000	-1.2000	0.2000	-0.2000
77.00	0.9000	-1.4000	0.3000	-0.2000



Cost of creating long call butterfly spread = (0.30*2)-0.60-0.20 = -0.20
Lower BEP = 75.50+0.20 = 75.70
Upper BEP= 76.50-0.20=76.30
This position can also be created with the help of only puts or combination of calls and puts.

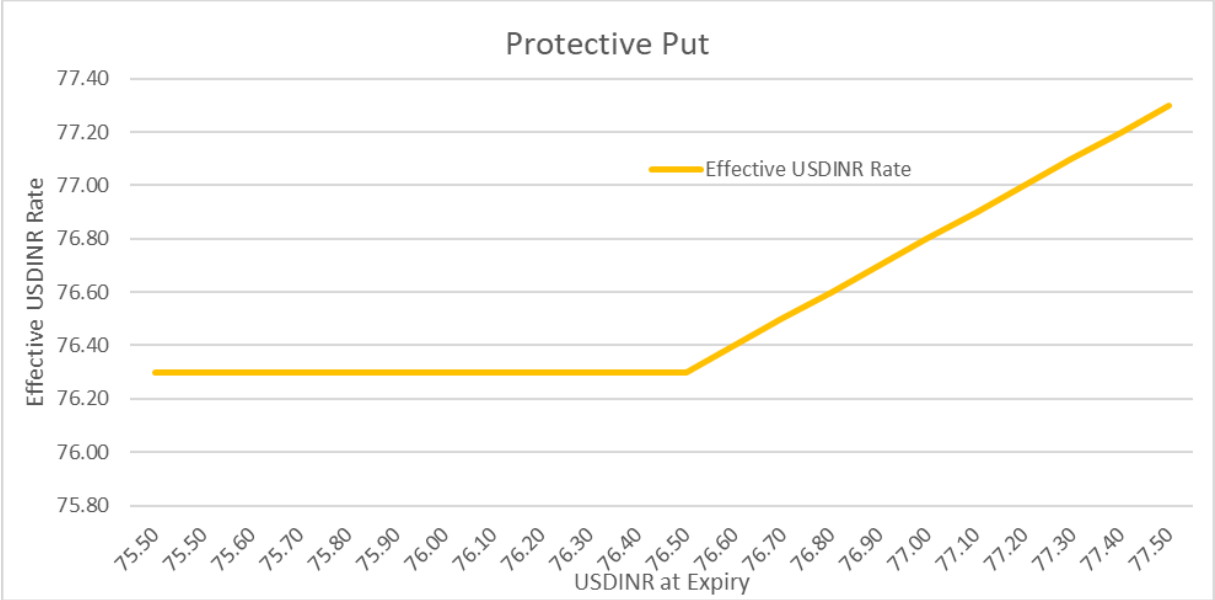
5.3.7 Hedging Strategies with Currency Options

5.3.7.1 Buying Protection with Put

The idea behind the purchase of puts is to compensate loss associated with the potentially declining value of a currency with the rising intrinsic value of the puts. As the market declines, puts will go deeper and deeper in-the-money, permitting the put holder to exercise the options for a profit. Of course, if the market should rally instead, the puts go out-of-the-money. However, having paid the option premium, the put holder's loss is limited thereto and, of course, the favorable underlying price movement should work to the benefit of the hedger.

Let us understand with an example:

Case 1
An export company expecting receipt of 1 million USD after one month. The company runs the risk of a fall in USDINR prices and thereby reduction of its profit. A company can short USDINR futures to hedge his portfolio. In this case, he is out of the market, as far as profits from upside are concerned. What can be done to remain in the market, reduce losses but gain from the upside? By buying put options, the company is effectively taking a bearish view on the USDINR. If company buy put option with a strike price of Rs.76.50 at a premium of Rs.0.20. As USDINR keeps rising, the profits will keep rising as losses in long put will be maximum to the extent of premium paid, but notional profits for USDINR receivable will keep increasing. On the other hand, in case of USDINR depreciate the notional losses in USDINR receivable will offset with long put.



The long put hedge allows one to lock-in a floor return while still retaining a great deal of the upside potential associated with a possibly favorable market swing limited to the extent that you pay the premium associated with the purchase of the put options up front. In above example, the Exporter has lock-in minimum USDINR rate at 76.30 (76.50-0.20) with unlimited upside potential.

Put options will be more suited as hedging tool for contingent cash flow receivable. Let us understand with some example:

Case 2

A company exports mango pulp to Middle East region. It receives confirmed orders 6 month in advance at a fixed price in USD. Sometimes company is not able to fulfill the order quantity as it is not able to buy adequate amount of mango. As a practice, company hedges FX risk by selling USD in futures market. In past company has faced huge losses on account of FX hedging when it could not supply full order and USD strengthened significantly against INR. What is the alternative hedging strategy that company could use to avoid such losses?

Company could hedge part of its exposure using currency options - buy put. It would ensure that company's losses are limited to premium paid and not beyond that even in case they are not able to supply the mango.

Case 3

Another typical contingent cash flow example is bidding process. When a firm bids for a project overseas, which involves foreign exchange risk, it may quote its bidding price and at the same time protect itself from foreign exchange risk by buying put options. If the bidding was successful, the firm will be protected from a depreciation of the foreign currency. However, if the bidding was unsuccessful and the currency appreciated, then

the firm may just let the contract expire. In this case the firm loses the premium paid, which is the maximum loss possible with options. If the bidding was unsuccessful and the currency depreciated, the firm may exercise its right and make some profits from this favourable movement. In the case of hedging with forward or futures, the firm would be automatically placed in a speculative position in the event of an unsuccessful bid, without a limit to its downside losses

Case 4

Assume that there is an exporter of jewellery from India. The export house believes that INR would appreciate from current level of 76 to 75 in three months' time. However, there is possibility that USD will appreciate against other currencies which result in weaking of rupee. Company decides to hedge its USD receivable via options. It is looking for an alternative of cost lower than vanilla option. What strategy could the company consider?

Company could buy an ATM or ITM put option on USDINR and reduce its cost by selling OTM put option. The actual strike would depend on premiums and management objective. Can you recollect what is this option strategy called? This is called a bear put spread. Company could achieve a similar pay off using call options and that strategy is called as bear call spread. Please refer to section on bear call / put spread for explanation.

Case 5

An exporter hedges 20,000 USD by buying USDINR put option at a strike of Rs 75.00 when available price was Rs 0.35/0.37. Since he received USD earlier than the maturity of the contract, he decided to cancel the put option. The available price at time of cancellation was Rs 0.48/0.49 and latest available FBIL USDINR reference rate was Rs 74.50. At the time of converting USD into INR, the exporter's bank quoted him a price of Rs 74.45/75. What was the net price received per USD?

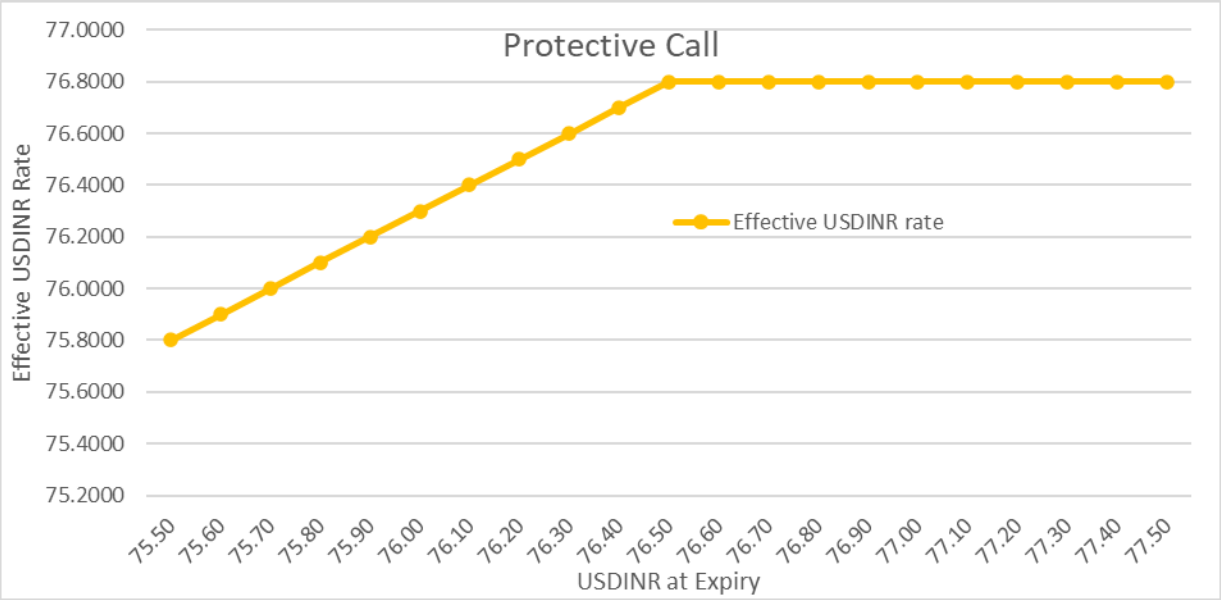
Premium paid at the time of buying put option : Rs. 0.37
Premium received at the time of cancellation of put option: Rs. 0.48
Net gain from transaction : Rs.0.11 (0.48-0.37)
Rate received from Bank: 74.45
Effective net rate/price per USD for exporter: Rs. 74.45 + Rs. 0.11 = Rs. 74.56

5.3.7.2 Buying Protection with Call

Case 1

XYZ Ltd. is an importer. The company has to make payment of USD 100,000 at end of the month. A company can long USDINR futures to hedge his portfolio. In this case, he is out of the market, as far as profits from downside are concerned. What can be done to remain in the market, reduce losses but gain from the downside? By buying call options, the company is effectively taking a bullish view on the USDINR. If company buy call option with a strike price of Rs.76.50 at a premium of Rs.0.30. As USDINR keeps falling, the profits

will keep rising as losses in long call will be maximum to the extent of premium paid, but notional profits in USDINR payable will keep increasing. On the other hand in case of USDINR appreciate the notional losses in USDINR payable will offset with long call.



The long call hedge allows one to lock-in an upper payable amount while still retaining a great deal of the downside potential associated with a possibly favorable market swing limited to the extent that you pay the premium associated with the purchase of the call options up front. In above example, the importer has lock-in maximum USDINR rate at 76.80 (76.50+0.30) with unlimited downside potential.

Case 2

Assume there is an importer of edible oil in the country. The company believes that because of increasing fiscal deficit in the country, reducing portfolio inflows and political uncertainty there is high probability of USD strengthening from current level of 75 to 76 in three months. However, there is possibility if USD weaking against other currencies and resulting in strengthening of INR also (which is same as weakening of USD). Company decides to hedge its USD payable via options. It is looking for an alternative of cost lower than vanilla option.

Company could buy an ATM or ITM call option on USDINR and reduce its cost by selling OTM call option. The actual strike would depend on premiums and management objective. Can you recollect what is this option strategy called?
This is called a bull call spread. Company could achieve a similar pay off using put options and that strategy is called as bull put spread. Please refer to above section on bull call / put spread for explanation.

Case 3

A student going abroad for higher studies gets a loan sanctioned of Rs 15,00,000. He has to make the payment to the University after one month and he is concerned about foreign exchange (FX) rate fluctuation. To hedge the FX risk, he wants to buy call option on Exchange for RS.75.00 strike. How many lots of call option students should buy?

Amount in USD = (1500000/75) = USD 20000
1 lot = 1000 USD
No. of Lots = 20 (20000/1000)

5.4 Use of Currency Derivatives by Speculators

In earlier various examples currency derivatives contract was used for hedging an actual currency exposure. In this section, we will explain its use by speculators.

As explained in earlier section, speculators take a view on the currency with an objective to profit from it. Let us take an example.

Case 1

A trader has a view that given the buoyant economic condition in India and likelihood of drop in inflation, the INR may appreciate against USD (i.e. USD will depreciate against INR) in next six months from current level of 76 to 74. To execute the view, he shorts 6 months contracts of 100 USDINR futures at a price of 77.5. As expected, INR appreciated. At the expiry of the contract, the final settlement price was 74.5. How much profit / loss did the trader make on his transaction?

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. Since he had shorted 100 contracts and each contract is of 1000 USD, the absolute profit made on the transaction was Rs. 300,000 (3 x 100 x 1000).

Please note that had the INR depreciated, the trader would have made a loss. The exact amount would have been a function of the final settlement price of the futures contract.

Case 2

A trader has a view that given the international tension, increase in price of crude oil will depreciate INR against USD (i.e. USD will appreciate against INR) in next three months from current level of 75 to 77. To execute the view, he long 3 months contracts of 500 USDINR futures at a price of 75.80. As expected, INR depreciated against USD. At the expiry of the contract, the final settlement price was 77.30. How much profit / loss did the trader make on his transaction?

Since the settlement price was higher than the contracted price and the trader had long 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 1.50 per USD. Since he had long 500 contracts and each contract is of 1000 USD, the absolute profit made on the transaction was Rs 750,000 (1.50 x 500 x 1000).

Please note that had the INR appreciated, the trader would have made a loss. The exact amount would have been a function of the final settlement price of the futures contract.

Case 3

A currency derivatives trader has a view that USD will depreciate against EUR (EUR will appreciate against USD) in next few months. To execute the view, the trader will buy EURUSD futures or buy EURUSD call option. In case trader also assume that the USDINR rate will remain same in this period, the trader can also execute his view by buying EURINR futures or buying EURINR call option (Cross rate arithmetic; EURINR = EURUSD * USDINR). Similarly, if trader view that JPY will weaken against USD (USD will strengthen against JPY) in next few months. To execute the view, the trader will buy USDJPY futures or buy USDJPY call option. In case trader also assume that the USDINR rate will remain same in this period, the trader can also execute his view by selling JPYINR futures or buying JPYNR put option.

A trader has view that the EUR will depreciate against Dollar in futures. A trader can short EURUSD futures contract. On the other hand trader can buy USDINR and sell EURINR futures contract for an equivalent amount to take the similar view (Cross rate arithmetic; EURUSD = EURINR/USDINR).

Case 4

We have seen in earlier chapter that the currency futures prices traded wither at premium or discount to spot prices due to the interest rate differential. Trader has view that the currency prices will remain same in future period, in such cases base on the currency trading at premium or discount the trader will execute his view. For e.g. USDINR futures trades at premium as USD interest rates are lower than the INR interest rate. Hence, if trader has a view that USDINR prices will remain constant in futures, to execute the view, he will short USDINR futures. In such scenario, if the view of trader is correct and USDINR prices remain constant, the profit of trader will be equal to forward premium.

Case 5

The trader can speculate his view by using Currency option contract also. For e.g. If trader has view that USD will appreciate against Rupee i.e. bullish on USDINR, he will buy USDINR call option. On the other hand if he thinks that USD will depreciate against Rupee, he will buy USDINR put option.

Sometimes, trader has view but does not want to pay the initial premium. In such case, he case sell option. For e.g. If trader has view that USD will appreciate against Rupee, he will sell USDINR put option and vice versa. However, in such cases trader is exposed to unlimited loss with limited profit potential.

5.5 Use of Currency Derivatives by Arbitragers

As mentioned earlier, arbitragers look for mispricing in the market and execute simultaneous buy and sell to capture the mispricing and make profit. They do not take any view on the market direction.

Let us take an example: A trader notices that 6 month USDINR currency futures was trading at 75.9800/75.9900 while 6 month forward in OTC market, for same maturity as that of currency futures contract, was available at 75.8500/75.8600. Let us answer few questions on this scenario.

Is there an opportunity to make money in the scenario given above? If yes, what trade can be executed to make money?

Ideally currency futures and currency forward should be trading at same level if their settlement dates are same. A difference in pricing means mispricing and an opportunity to set an arbitrage trade to capture the mispricing and make money by selling in the market where the price is higher and in buying in the market where the price is lower.

The trader could short currency futures and go long on currency forward to capture the mispricing.

How much profit per USD could the trader make by setting an arbitrage trade if the settlement price of currency futures was 77 and the OTC forward contract was also settled at 77?

The trader would short currency futures at price of 75.98 (bid price) and go long in currency forward at 75.86 (offer price). 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.

Similarly, if the settlement price of currency futures was 75 and the OTC forward contract was also settled at 75. The trader would short currency futures at price of 75.98 and go long in currency forward at 75.86. At the time of settlement, trader profit 0.98 on futures and makes a loss of 0.86 on OTC forward contract. Thus he makes an arbitrage profit of 0.12 per USD.

Please note that arbitrage profit would have been constant at 0.12 irrespective of final settlement price as long as both OTC contract and futures contract were settled at the same price.

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.

Suppose EURUSD is available at 1.10, USDINR at 75 and EURINR at 82.00. An arbitrageur who has 1000 EUR can exchange these for 1100 USD. He can further exchange these 1100 USD for 82500 INR (USD 1100 * 75 INR per USD = INR 82500). In the last leg of the triangular arbitrage, he can exchange 82500 INR for 1006.10 EUR (82500 INR/82 INR per EUR) thereby making an arbitrage profit of 6.10 EUR. Had the EURINR been trading at 82.50 (instead of the 82.00 given in this example), there could be no arbitrage opportunity. But for the given EURUSD and USDINR rates, anything below 82.50 EURINR provides an arbitrage opportunity.

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.

Here, it may be interesting to look at the risks these arbitragers carry. As seen before, arbitragers are executing positions in two or more markets/products simultaneously. Even if the systems are seamless and electronic and both the legs of transaction are liquid, there is a possibility of some gap between the executions of both the orders. If either leg of the transaction is illiquid then the risk on the arbitrage deal is huge as only one leg may get executed and another may not, which would open the arbitrager to the naked exposure of a position. Similarly, difference in settlement in two markets, it may need reversal of trades in the respective markets, which would result in additional risk on unwinding position with regard to simultaneous execution of the trades. For e.g. Currency future market is cash settled and currency forward market has delivery based settlement. Hence, arbitrageur will carry additional risk on settlement date to ensure that both contracts are get settled at same price or he should be able to reverse both transactions at same price. Also, in above examples, the transaction cost and impact cost have not been considered. In real life, the transaction cost like the brokerage, stamp duty, margin cost and impact cost etc. need to be taken into account before entering into any strategies.

5.6 Trading Spread Using ETCD

Spread refers to difference in prices of two futures / option contracts. A good understanding of spread relation in terms of contract spread is essential to earn profit. Considerable knowledge of a particular currency pair, there interest parity is also necessary to enable the trader to use spread trading strategy.

Spread movement is based on following factors:

- Interest Rate Differentials
- Liquidity in Banking System
- Monetary Policy Decisions (Repo, Reverse Repo and CRR)

Calendar Spread: A calendar spread is a contract where a trader buys/sells a particular month contract (Futures or Options) and sells/buys (take an opposite position) of the same contract of a different month. Both have the same underlying but different maturities. In calendar trade position trader does not have risk of underlying security/currency movement but only have basis risk due to change in the spread between two contracts. Hence the margin applicable on this positions are much lower than the normal margin[9].

Example: Trader is of a view that the spread between near month and mid-month may widen. On the basis of this view, he decides to sell March (Near month contract) USDINR futures @76.00 and at the same time buy April (mid-month) futures contract @76.20; the spread between the two contracts is Rs. 0.20. Let's say after 10 days, as per his expectation spread widen and now the March futures contract is trading at 76.10 and April futures contract is trading at 76.40, the spread now stands at Rs. 0.30. He decides to square off his both the positions, making a gain of Rs. 100 per contract {(0.30 – 0.20)* 1000} in whole transaction. The issue with entering a calendar spread in 2 different orders like above is that there is a risk that the price moves between placing both the orders i.e. execution risk. Such risk can be avoided by using spread order[10] facility provided by Exchanges.

A trader has a view that interest rate in India may increase while interest rate in USA may remain flat. This will increase the spread between short term and long term USDINR futures contract. Hence, the trader will buy far month USDINR futures contract and at the same time sell the near month USDINR futures contract.

Participants while trading for the purpose of hedging, speculating, arbitrage or calendar spread trading on Exchange Traded Currency Derivatives (ETCD) ensure that they are trading within the guideline provided by The Foreign Exchange Management Act, 1999

[9] Refer Calendar spread charge section 7.9.1.1.3

[10] Refer spread order book section 6.2.5

(FEMA), RBI guideline on foreign exchange trading, SEBI guidelines and their respective regulatory guidelines.

5.7 Limitation of Exchange Traded Currency Derivatives for Hedgers

Exchange traded currency derivatives contracts are standard contracts which are mainly settled in cash i.e. without delivery of currencies. This may lead to imperfect hedging and have certain basis risk for hedgers. For example, USDINR contract expires on every Friday of week and two working days prior to the last business day of the expiry month. If the exposure to be hedged has maturity of some other day in the week or month, there will be mismatch in the maturity and leads to imperfect hedging.

Further, USDINR contract has standard lot size of 1000 USD. If importer has to make payment of USD 10500 after 3 months, he can hedge for either USD 10000 or USD 11000. Hence, there will be either over hedging or under hedging.

As ETCD are cash settled, for importer and exporter they need to deal with Authorized Dealer for actual underlying settlement. There might be a mismatch in the time/price of cancellation of contract in ETCD and the time/price of actual underlying settlement. This mismatch may result in small loss of value.

Many times participant wants to hedge their position for long term. For e.g. Company who has taken loan for 5 years in foreign currency, will find it difficult to hedge their position through ETCD as the contracts are available only upto 1 year.

However, the transparency, small lot size, flexibility in trading, credit agnostic and ease of trade execution may offset the above limitation of ETCD.

Chapter 6: Trading Mechanism in Exchange Traded Currency Derivatives

LEARNING OBJECTIVES:

After studying this chapter, you should know about following:

- Entities in Trading System and Their Role
- Features of Exchange Trading System
- Order Management
- Trading Cost

6.1 List of Entities in Trading System

The stock Exchanges provide a trading platform where the buyers and sellers (investors) can meet to transact in securities. An Exchange provides multiple segments in which Equity, Equity Derivatives, Currency Derivatives, Commodity Derivatives, Interest Rate Derivatives, Debt Securities are traded. Generally the segments are specific to underlying asset, for e.g. in Equity derivatives segment trading take place in futures and option with underlying as equity or equity indices. Similarly, in Commodity derivatives segment trading take place in futures and options with underlying as commodity or commodity indices. However, Exchange Traded Currency Derivatives (ETCD) is traded in a separate segment called "Currency Derivatives Segment" (CDS) in stock exchanges. Along with ETCD, Exchange traded interest rate derivatives also traded in Currency Derivatives Segment. As is the norm for all derivatives Exchanges, the trading and settlement are conducted by two distinct legal entities: trading by Exchange and settlement (along with the associated process of Clearing) by Clearing Corporation (CC).

In this section we will discuss about few important entities of trading system of the Exchange and their role.

6.1.1 Stock Exchanges

The Securities Contract (Regulation) Act, 1956 (SCRA) defines 'Stock Exchange' as (a) anybody of individuals, whether incorporated or not, constituted before corporatization and demutualization under sections 4A and 4B, or (b) a body corporate incorporated under the Companies Act, 1956 (1 of 1956) whether under a scheme of corporatization and demutualization or otherwise, for the purpose of assisting, regulating or coordinating the business of buying, selling or dealing in securities. Stock Exchange is incorporated for the purpose of assisting, regulating or coordinating the business of buying, selling or dealing in securities. Its important role is to establish a nation-wide trading facility for various financial instruments. Stock Exchanges ensure equal access to investors across the nation through an appropriate communication network. Exchanges set out and implement rules and regulations to govern the securities market. These rules and

regulations extend to member registration, securities listing, transaction monitoring, compliance by members to SEBI / RBI regulations, investor protection etc.

Typical functions of Stock Exchanges are:

- Provide trading platform
- Dissemination of information
- Investor education, awareness and protection
- Facilitate redressal mechanism
- Surveillance and Investigation
- Listing of securities and monitoring compliance of listed companies
- Inspection and monitoring of member compliance

6.1.2 Clearing Corporations (CC)

Clearing Corporation does clearing, settlement and risk management for trades executed on Exchanges. Also provide settlement guarantee for such trades. We will examine the functions of CC in detail in subsequent chapter.

6.1.3 Trading Member and Authorized Person

An important constituent of the securities market is a trading member/ stock broker[11] who is a member of the stock exchange. In India, investors cannot access the Exchange platform directly. They have to compulsorily trade through registered stock brokers/trading member of the Exchanges. Hence, stock brokers/trading members are one of the important intermediaries of securities market. A trading member is allowed to execute trades on his own account as well as on account of his clients. A trading member can be an individual (sole proprietor), a partnership firm, Limited Liability Partnership, Corporate or a bank[12] who is a member of a Stock Exchange. Authorized person[13] is not a member of a Stock Exchange but is 'Any person, individual, partnership firm, LLP or body corporate, who is appointed as such by a Stock Broker (including Trading Member) and who provides access to trading platform of a Stock Exchange as an agent of the Stock Broker'. For executing trades in ETCD on own as well as client account, a trading member has to take membership of Currency Derivatives Segment of the Exchange. The admission as a trading member on the Stock Exchanges is based on the various criteria like age, capital adequacy, financial track record, education, experience and fulfilment of criteria of "fit & proper person" as laid down in the SEBI (Intermediaries) Regulations, 2008. The Exchanges may stipulate additional requirements over and above the SEBI prescribed rules. To get the access of trading system, dealer (who will enter deal in trading system) of the trading member should successfully certified NISM-Series-I: Currency Derivatives

[11] Stock broker" means a person having trading rights in any recognized stock exchange and includes a trading member

[12] Banks are permitted to become member of the currency derivative segment of recognized stock Exchanges subject to fulfillment of minimum prudential requirements

[13] https://www.sebi.gov.in/legal/circulars/aug-2018/role-of-sub-broker-sb-vis-a-vis-authorized-person-ap-39825.html (Discontinuation of Sub-broker category)

or NISM-Series-XIII Common Derivatives Certification Examination. The membership for currency derivatives segment can be taken individually or in combination like only trading member, trading cum self-clearing member and trading cum clearing member. Only trading member category of membership entitles allow to execute trades on his own account as well as on account of his clients but, clearing and settlement of trades executed through the Trading Member would have to be done through a Trading-cum Clearing Member or Professional Clearing Member of the Exchange.

6.1.4 Clearing Members

Clearing Members have clearing and settlement rights in any recognised clearing corporation. Clearing Member helps in clearing of the trades of their clients. There are three kinds of clearing members - Professional Clearing Members (PCM), Trading Cum Clearing Member (TCM) and Self Clearing Member (SCM). We will examine the role of all these entities in next chapter.

6.1.5 Investor / Client

Investors/clients trade in Exchange Traded Currency Derivatives (ETCD) through trading member of the currency derivatives segment. Trading member will accept order on behalf of client and sends the same to the Exchange. The investor can be individuals, body corporates, domestic financial institution, Authorised Dealers, foreign portfolio investor etc. Clients have the option of placing their orders through various channels like internet, phone, direct market access (DMA) (for institutional clients), Securities trading using wireless technology facility (STWT), etc. To participate in ETCD, investor has to open a trading account with the trading member of currency derivative segment of the Exchange and complete the necessary procedure related to account opening, KYC, etc. Once the KYC and other details thereon are complete, each client is assigned a unique client code (UCC) by the broker. This acts as an identity for the client with respect to the broker. SEBI has made it mandatory for all the brokers to use unique client codes for all clients while entering orders on their behalf. It is also mandated by SEBI, that the unique client code should be mapped with the PAN number of the client. The broker has to provide the Stock Exchange(s) with the UCC and the PAN details of the client(s) before entering any order/trade on behalf of the client. The Stock Exchanges provide an upload facility to the brokers through which the UCC and other client details are uploaded on the stock exchange platform on a regular basis. If the broker fails to register the unique client code with the Exchange, he is liable to be penalized.

6.2 Exchange Trading System

All the derivatives exchanges in India provide a fully automated screen-based trading platform for ETCD as part of currency derivatives segment. These trading systems support an order driven market and simultaneously provide complete transparency of trading

operations. Exchange trading system is a fully computerized system designed to offer investors across the length and breadth of the country a safe and easy way to invest which adopts the principle of an order driven market. Important features of Exchange trading system:

- Screen based trading system.
- Fully automated: No manual intervention.
- Transparent: Quantity and price information related to order and trade is disseminated on the trading system on real time basis.
- Anonymous order matching: The identity of buyer and seller is not revealed to market. Only price and quantity information is available on the system. It is order driven platform where order matching is done strictly on price-time priority basis.
- Higher speed of execution: Handling of multiple orders and trade execution.
- Connected to multiple interfaces: Trading system is connected to clearing corporation system, surveillance system of the Exchanges, data vendors system for dissemination of data.
- Risk management facility: To avoid mainly order entry related errors.
- Nationwide reach: Trading members/participants can have access from any part of the country
- Trading member can connect to the system by various mode such as lease line, VSAT, co-location[14] etc.

6.2.1 Trader Workstation (TWS)

The trader workstation (TWS) is the terminal from which the member accesses the trading system. Exchange provides own trading platforms to its member. Each trader has a unique identification by way of Trading Member ID and User ID through which they are able to log on to the system for trading or inquiry purposes. As mentioned earlier, dealer (who will enter deal through TWS) of the trading member should successfully certified specific module of NISM.

TWS provides mainly two kinds of information which are:

Trading member's own transaction Information:

- Order entered
- Order Modified
- Outstanding Order
- Order Log
- Trade details

[14] The facility of co-location or proximity hosting (or by whatever name called) is offered by the stock exchanges to stock brokers and data vendors whereby their trading or data-vending systems are allowed to be located within or at close proximity to the premises of the stock exchanges, and are allowed to connect to the trading platform of stock exchanges through direct and private network

Market Information:

- Order book
- Securities / contract price information
- Securities / contract trade information
- Additional information

To assist trading in various currency contracts, Exchange also provide spot market currency price feed.

Exchanges have allowed members to develop their customized trading workstation as per their requirements and connect to Exchange trading system. Under this facility, the Exchanges has made available product such as Computer to Computer Link (CTCL) / Internet based trading (IBT) / Direct Market Access (DMA) / Security trading thought wireless technology facility (STWT) / Automated / Algorithm Trading (ALGO) / Smart order router (SOR) to the Trading Members.

6.2.2 Placing of Order

The Broker accepts orders from the client and sends the same to the Exchange after performing the risk management checks. Clients have the option of placing their orders directly through various channels, provided by members, like internet, phone, direct market access (DMA) (for institutional clients), securities trading using wireless technology facility (STWT) / Automated / Algorithm Trading (ALGO) / Smart order router (SOR), etc. To strengthen the regulatory provisions against un-authorized trades and to harmonise the requirements across equity & derivative market, all brokers shall execute trades of clients only after keeping evidence of the client placing such order, it could be, inter alia, in the form of: (a) Physical record written and signed by client, (b) Telephone recording, (c) Email from authorized email id, (d) Log for internet transactions, (e) Record of SMS messages, (f) Any other legally verifiable record.

SEBI further instructed that wherever the order instructions were received from clients through the telephone, the stock broker shall mandatorily use telephone recording system to record the instructions and maintain telephone recordings as part of its records[15]. Internet trading can take place through order routing systems, which will route client orders to exchange trading systems for execution. Thus, a client sitting in any part of the country would be able to trade using the Internet as a medium through brokers' Internet trading systems. SEBI-registered brokers can introduce internet based trading after obtaining permission from respective Stock Exchanges. SEBI has stipulated the minimum conditions to be fulfilled by trading members to start internet based trading and services. Direct Market Access (DMA) is a facility which allows brokers to offer clients direct access to the exchange trading system through the broker's infrastructure without manual intervention by the broker. Some of the advantages

[15] SEBI Circular Ref No.: SEBI/HO/MIRSD/DOP1/CIR/P/2018/54Dated March 22, 2018

offered by DMA are direct control of clients over orders, faster execution of client orders, reduced risk of errors associated with manual order entry, greater transparency, increased liquidity, lower impact costs for large orders, better audit trails and better use of hedging and arbitrage opportunities through the use of decision support tools / algorithms for trading. SEBI in 2008, introduced Direct Market Access (DMA) and permitted institutional investors to use DMA facility. The facility of the DMA provided by the stock broker shall be used by the client or an investment manager of the client. A SEBI registered entity is permitted to act as an investment manager on behalf of institutional clients. In case the facility of DMA is used by the client through an investment manager, the investment manager is required to execute the necessary documents on behalf of the client(s). Exchange can also specify the categories of investors to whom the DMA facility can be extended. SEBI-registered brokers can introduce DMA facility to their clients after obtaining permission from respective Stock Exchanges. Brokers must specifically authorize clients or investment managers acting on behalf of clients for providing DMA facility, after fulfilling KYC requirements, documentation and carrying out necessary due diligence, records of which should be properly maintained.

Another feature which has been introduced in the Indian securities market is Algorithmic Trading and High Frequency Trading. Algorithmic Trading – Any order that is generated using automated execution logic shall be known as algorithmic trading[16]. "Automated Trading" shall mean and include any software or facility by the use of which, upon the fulfillment of certain specified parameters, without the necessity of manual entry of orders, buy/sell orders are automatically generated and pushed into the trading system of the Exchange for the purpose of matching. SEBI has advised the stock exchanges to ensure that all algorithmic orders are necessarily routed through broker servers located in India and the stock exchange has appropriate risk controls mechanism to address the risk emanating from algorithmic orders and trades. The minimum order-level risk controls shall include price check and quantity limit check. Stock exchange shall ensure that the stock broker shall provide the facility of algorithmic trading only upon the prior permission of the stock exchange. The stock broker, desirous of placing orders generated using algos, shall satisfy the stock exchange with regard to the implementation of the minimum levels of risk controls at its end as specified by SEBI and Exchanges from time to time. The stock brokers that provide the facility of algorithmic trading shall subject their algorithmic trading system to a system audit every six months in order to ensure that the requirements prescribed by SEBI / stock exchanges with regard to algorithmic trading are effectively implemented[17]. High frequency trading (HFT) is a type of algorithmic trading which is latency sensitive and is characterized by a high daily portfolio turnover and high order-to trade ratio (OTR).

[16] SEBI Circular Ref. no. CIR/MRD/DP/09/2012 Dated March 30, 2012

[17] SEBI/HO/MRD/DP/CIR/P/117 dated October 25, 2019 "Master Circular for Stock Exchange and Clearing Corporation, Chapter 2 - Trading Software and Technology" & SEBI/HO/MRD1/DSAP/CIR/P/2020/234 dated November 24, 2020.

Once the orders are received by the broker, it is confirmed with the client and then entered into the trading system of the Exchange. The Exchange gives confirmation of the order and time stamps it. An order generally comes with certain conditions which determine whether it is a market order, limit order, etc. (discussed in section 6.3.1). These specify the terms and conditions at which the client wants his/her order to get executed.

Placing of orders through the Internet / Phone

Placing of orders through the internet/phone means the facility provided by stock brokers, whereby the client can place order(s) over the phone/internet for transactions in securities, to be executed on behalf of clients by the broker. Here, the dealer shall refer to the Dealing Desk Executive appointed by the call centre(s) for the purpose of providing this facility.

- For the purpose of availing of this service, the Client is required to call on the specific numbers intimated or notified from time to time by the stock broker for the said purpose by means of an email and/or by putting up such numbers on the website or otherwise.
- In case the client opts for this service, he/she may be required to provide accurate answers to the questions asked by the dealing desk executive, including the Client's user id and TPIN, for ascertaining the genuineness of the caller. Once this is done, the order can be placed and will be processed in the normal course.

6.2.3 Process of order routing through the Exchanges

Once the order is entered and confirmed by the client/dealer at his trading terminal and verified by the broker software, the order is routed to the Exchange for its execution. The Exchange system allots a unique order number for all orders received in the system. This is given as order confirmation along with the time stamp to the broker.

The order gets executed at the Exchange depending upon the type of order. If the order is a market order, it gets executed immediately, subject to availability of counter order. If it is a limit order, it is matched against appropriate counter orders. Once the order is matched, a trade is said to be executed. As soon as a trade is executed, the trade confirmation message along with time stamp will be automatically available on the trading terminal of broker. All orders can be modified or cancelled during the trading hours provided they are not fully executed. For the orders, which are partially executed, only the open or unexecuted part of the order can be cancelled / modified.

6.2.4 Order Book

The term "order book" refers to an electronic list of buy and sell orders which are available for matching (not yet converted in trade or outstanding order) for a specific security or derivatives contract organized by price level. An order book lists the number of shares/lot being bid on or offered at each price point, or market depth. It also provides number of orders at each price level. The Exchange order book is generally available up to five price

level based on the priority of matching. The identities of market participants remain anonymous. The order book helps to improve market transparency as they provide information on price, availability, depth of trade. An order book is dynamic, meaning it's constantly updated in real-time throughout the day.

Below is example of typical order book:

Contract: USDINR Futures Expiry:29032022

No. of Orders	Buy Qty./ Lot *	Buy Price	Sell Price	Sell Qty./ Lot*	No. of Orders
2	35	76.5500	76.5625	10	1
3	25	76.5425	76.5700	11	3
1	38	76.5400	76.5750	184	2
10	78	76.5300	76.5800	42	1
1	1	76.5250	76.5975	86	4
Total Buy Qty / Lot	3525		Total Sell Qty / Lot	4250	

*Trading in case of derivatives is mainly in lot size. In such cases, number of lots.

Left hand side of order book provide buy order details and Right hand side of order book provide sell order details. “Number of order” column provide information about number of unique orders available at the given price point. Quantity columns provide total quantity / lot available at given price point. Buy price information is provided in descending order i.e., from highest to lowest price and sell price information is provided in ascending order i.e. lowest price to highest price. Generally order depth up to five price point is provided at each side. Additionally, total buy order quantity and total sell order quantity of overall market is also provided.

6.2.5 Spread Order Book

Exchanges provide spread order book separately for taking calendar spread combination. A calendar spread is a contract where you buy/sell a particular month contract (Futures or Options) and sell/buy (take an opposite position) of the same contract of a different month. The dealer can set up the spread combination contract on TWS and place Buy Spread order (BSP) and Sell Spread order (SSP) with individual contracts defaulted for leg1 and leg2.

For e.g. USDINR future MAR22APR22 spread contract allows participants to trade between difference of price between USDINR future APR21 (Far month contract/2nd leg contract) expiry and MAR22 (near month contract/1st leg contract) expiry. The difference which is shown on the spread contract can be positive, negative, or zero, which is not possible for all other contracts other than spread contracts. The orders are matched in spread order book on price-time priority only, where price is basically difference between

far month contract and near month contract. spread order is matched, the trades shall be executed at following prices:
Traded price for the first leg contract = Reference price
Traded price for the second leg contract = Reference price + the price difference entered for the spread order
where, Reference price = Last Traded Price of the first leg contract.

Spread USDINR MAR22APR22 futures

No. of Orders	Buy Qty./ Lot *	Buy Price	Sell Price	Sell Qty./ Lot	No. of Orders
2	35	0.0600	0.1000	10	1
3	25	0.0300	0.1100	11	3
1	38	0.0100	0.1200	184	2
1	78	0.0000	0.1400	42	1
1	1	-0.0100	0.1500	86	4
Total Buy Qty / Lot	3525		Total Sell Qty / Lot	4250	

*Trading in case of derivatives is mainly in lot size. In such cases, number of lots.

A buy side spread means sell near month leg (first leg) and buy in far month leg (second leg). A sell side spread means buy in near month leg (first leg) and sell in far month leg (second leg). Buy spread order of 10 lots in USDINR MAR22APR22 futures mean: sell 10 lots in USDINR MAR22 futures and buy 10 lots in USDINR APR22 futures. Similarly, sell spread order of 10 lots in USDINR MAR22APR22 futures mean: buy 10 lots in USDINR MAR22 futures and sell 10 lots in USDINR APR22 futures.

The issue with entering a calendar spread in 2 different orders is that there is a risk that the price moves between placing both the orders and higher margin requirement you would have till second order get executed. By using the spreads order in the spread order window, both the above mentioned issues get fixed.

6.2.6 Order Matching Rule

Exchanges follow continuous matching based on price-time priority. An order may match partially with another order resulting in multiple trades. The best price orders are matched first. If more than one order arrives at the same price, they are arranged in ascending time order. Best buy price is the highest buy price amongst all buy orders and similarly best sell price is the lowest price of all sell orders. This is because the system views all buy orders available from the point of view of a seller and all sell orders from the point of view of the buyers in the market. So, of all buy orders available in the market at any point of time, a seller would obviously like to sell at the highest possible buy price that is offered. Hence, the best buy order is the order with the highest price and the best sell order is the order with the lowest price. Orders lying unmatched in the system are

'passive' orders and orders that come in to match the existing orders are called 'active' orders. Orders are always matched at the passive order price. Matching of active order may be against single order or multiple passive orders. Quantity is not factor for matching.

Let us take an example here to better understand this. A sample of the order book is given below for understanding.

Buy Quantity/Lot	Buy Price	Sell Price	Sell quantity
50	121.2000	121.5000	50
100	121.1000	121.8000	200
25	120.9000	122.1000	3000
500	120.8000	122.2000	1000
5000	120.0000	122.6000	200

These quotes given in the table above are visible to clients. Now if a buy market order comes with an order quantity of 50 it gets executed for a price of Rs. 121.50 and the order book entries on the sell side moves up by one notch i.e., the Rs. 121.80 order comes to top. On the other hand, if a limit order with a sell price of Rs. 121.20 for a quantity of 500 comes, 50 shares get executed and the order for remaining 450 shares stay at the top on the sell side with a price of 121.20. All orders come as active orders into the order book. If they get a match, they will be executed immediately; else they will enter the order book according to their price and time as passive orders.

Let us take another example:-

Buy Qty./Lot	Buy Price	Sell Price	Sell Qty./Lot
1,606	807.5500	807.6000	100
13	807.5000	807.7500	119
383	807.4500	807.8000	184
78	807.4000	807.8500	42
1	807.3500	807.9000	86

Order is placed to buy 200 shares at Rs.807.65. In this current scenario, the incoming limit order will get matched with the best sell order in the book which is 100 shares @ Rs.807.60 and a trade will take place for 100 shares at Rs.807.60 and not at Rs. 807.65. It should be noted that the order is always matched with the passive order price, in this case as the sell order is the passive order, matching takes place at Rs.807.60. The balance buy order for 100 shares @ Rs.807.65 will sit in the order book on the buy side as the best buy order.

Revised order book snapshot as follows:

Buy Qty./Lot	Buy Price	Sell Price	Sell Qty./Lot

100	807.6500	807.7500	119
1,606	807.5500	807.8000	184
13	807.5000	807.8500	42
383	807.4500	807.9000	86
78	807.4000	807.9500	12

6.3 Order Management

Order management consists of entering orders, order modification, order cancellation and order matching. The main components of an order are:

- Price
- Time
- Quantity / No. of Contract
- Security/Contract (What to buy and what to sell))
- Action (Buy / Sell)
- Client identity (UCC) and Proprietary / Client identifier.

6.3.1 Order Entry

A trading member can enter various types of orders depending upon his/her requirements. The order conditions are broadly classified into three categories: price related conditions, time-related conditions, and quantity related conditions. We will see about the order condition in following section. Trading members are allowed to enter order during market hours only. Following are some examples of order entry:

Contract Descriptor									
Type of Derivatives	Underlying	Expiry Date	Buy / Sell	Mkt Lot	Price	Time Condition	Pro / Cli	UCC & PAN	CP Code
Currency Future	USDINR	290322	B	5	76.50	Day	Cli	A001 XXXX	-

Contract Descriptor											
Type of Derivative	Underlying	P/C	Strike Price	Expiry Date	Buy/ Sell	Mkt Lot/ Qty	Price	Time Cond.	Pro / Cli	UCC & PAN	CP Code
Currency Option	USDINR	Call	77.00	290322	B	5	0.1575	Day	Cli	A01 XXX	-

Once the order is entered and confirmed by the client/dealer at his trading terminal and verified by the broker software, the order is routed to the Exchange for its execution. The Exchange system allots a unique order number for all orders received in the system. This

is given as order confirmation along with the time stamp to the broker. As soon as a trade is executed, the trade confirmation message will be automatically available on the trading terminal of broker.

6.3.2 Types of orders

Price, time and quantity are three major components of an order. A stock broker can enter various types of orders depending upon the requirement. These conditions are broadly classified into three categories: price related conditions, time-related conditions, and quantity related conditions.

A. Price Condition:

Market Order - Basic Trade

A market order is where a trader purchases or sells their contracts at the best market price available across the market depth to complete the order quantity/lot. In the market order there is no need to specify the price at which a trader wants to purchase or sell. There are two variations on the market order—market order without protection and Market order with protection. The market order without protection means that the trades are executed at the best available price/s in the market at that point in time. The second type of market order i.e. market with protection order is a combination of market and limit order. It allows the market order to be executed till a specified level mentioned by trader. The risk of an order getting executed at any price is protected by using such order.

Example: Illustration of a typical market order

Order is placed to buy 100 lots of USDINR futures "at Market". The order book snapshot looks like as below:

Buy Qty./Lot	Buy Price	Sell Price	Sell Qty./Lot
1,606	76.5500	76.6000	100
13	76.5000	76.6500	119
383	76.4500	76.7000	184
78	76.4000	76.7500	42
1	76.3500	76.8500	86

In this current scenario, the incoming buy market order will get matched with the best sell order in the book which is 100 lots @ Rs.76.60 and a trade will take place for 100 lot at Rs.76.60. If buy order is placed for 200 lots "at Market" then trade will take place for 100 lot at Rs.76.60 and 100 lot at Rs.76.65.

Limit Order -

Limit orders involve setting the entry or exit price and then aiming to buy at or below the market price or sell at or above it. Unlike market order, the trader here needs to specify price. They of course can be changed any time before execution. Reaching these

limits/targets is not always possible and sometimes the orders do not go through. Limit orders are very common for online traders.

Example: Illustration of a typical limit order
Order is placed to buy 200 lots of USDINR futures at Rs.76.60. The order book snapshot looks like as below:

Buy Qty./Lot	Buy Price	Sell Price	Sell Qty./Lot
1,606	76.5500	76.6000	100
13	76.5000	76.7500	119
383	76.4500	76.8000	184
78	76.4000	76.8500	42
1	76.3500	76.9000	86

In this current scenario, the incoming limit order will get matched with the best sell order in the book which is 100 lot @ Rs.76.60 and a trade will take place for 100 shares at Rs.76.60. The balance buy order for 100 shares @ Rs.76.60 will sit in the order book on the buy side as the best buy order. The revised order book snapshot after the trade match will look as follows:

Buy Qty./Lot	Buy Price	Sell Price	Sell Qty./lot
100	76.6000	76.7500	119
1,606	76.5500	76.8000	184
13	76.5000	76.8500	42
383	76.4500	76.9000	86
78	76.4000	76.9500	12

Stop Orders (orders with stop loss triggers)
The one that allows the Trading Member to place an order which gets activated only when the market price of the relevant security reaches or crosses a threshold price. Until then the order does not enter the market.

In stop order, the client enters two prices: one is trigger price and the other is limit/market price. A stop order can best be explained with an example. Suppose a trader has a short term (say, for a day), bullish view on a USD against INR, he may buy the USDINR future at say Rs.76 in the early hours of trading session. If the price moves upwards as per his expectation, he may sell the future, say at Rs.76.50 and close his position. The future price can also move downwards much against expectations of the trader. It may so happen that the trader may have limited risk appetite and does not want to incur loss of more than Rs.0.25 per USD. In such a scenario, trader can give stop loss sell order with trigger price of Rs.75.80 and limit price of Rs.75.75. When the stock price starts moving downwards, as soon as it hits price of Rs.75.80, the sell order of Rs.75.75 will automatically get

triggered. Any further downward movement in price will not affect the trader as he has already limited his loss on the position. A buy order in the stop loss book gets triggered when the last traded price in the normal market reaches or exceeds the trigger price of the order.

A typical sell stop loss order example:

- Original transaction: Bought 400 lot of USDINR futures at Rs.76.
- If the price falls below the buy price, the investor will start clocking a loss.
- Investor may place a sell stop loss order at a trigger price of Rs.75.80. When the price of bond drops to Rs.75.80 or below, sell stop loss order will get triggered.
- Order is then placed in the market to sell 400 lots of USDINR futures.
- It can be triggered as a market order, or as a limit order
- If the investor had specified a limit price (which can be equal to or less than trigger price), for example in this case, Rs.75.75
- In the case of stop loss limit order, once triggered, the order will be placed in the market for sell USDINR futures 400 lots at Rs.75.75.
- It will match only if a corresponding buy order exists for Rs.75.75/- or better.
- If it is stop loss with market order, once triggered it will match with the best counter order available.

A typical buy stop loss order example:

- Original transaction: Sell 400 lots of USDINR futures at Rs.76.
- If the price goes above the sell price, the investor will start clocking a loss.
- Buy stop loss order is used to anticipate potential loss. Investor may place a buy stop loss order at a trigger price of say Rs.76.25.
- When bond price reaches Rs.76.25 or above, the buy stop loss order will get triggered.
- An order will be placed in the market to buy 400 lots of USDINR futures.
- It can be triggered as a market order, or as a limit order.
- If the investor had specified a limit price (which can be equal to or more than trigger price), for example in this case, the limit price could be Rs.76.28.
- In the case of stop loss limit order, when the stop loss order is triggered, the order will be placed in the market for buying 400 USDINR futures lots at Rs.76.28/-. It will match only if a corresponding sell order exists for Rs.76.28/- or better.
- If it is stop loss with market order, once triggered it will match with the best counter order available.

It is also important to note that once the order is triggered, it will match only if the counter order is available in the order book.
The variations in the three orders require traders to be well aware of the options when trading. Studying the currency/interest rate/security price movement and predicting the trend accurately is very important.

B. Time Condition:

DAY - A Day order, as the name suggests, is an order which is valid for the day on which it is entered. If the order is not matched during the day, the order gets cancelled automatically at the end of the trading day.

IOC - An Immediate or Cancel (IOC) order allows a trading member to buy or sell a security as soon as the order is released into the market, failing which the order will be removed from the market. Partial match is possible for the order, and the unmatched portion of the order is cancelled immediately.

Example: Illustration of a typical IOC order

Order is placed to buy 200 lots of USDINR futures at Rs.76.60 immediate or cancel. The order book snapshot looks like as below:

Buy Qty./Lot	Buy Price	Sell Price	Sell Qty./Lot
1,606	76.5500	76.6000	100
13	76.5000	76.7500	119
383	76.4500	76.8000	184
78	76.4000	76.8500	42
1	76.3500	76.9000	86

In this current scenario, the incoming limit order will get matched with the best sell order in the book which is 100 lots @ Rs.76.60 and a trade will take place for 100 lots at Rs.76.60. The balance buy order for 100 lots @ Rs.76.60 will be cancelled as it is an IOC order and there is no match for the remaining 100 lots.

GTC - A Good Till Cancelled (GTC) order is an order that remains in the system until it is cancelled by the Trading Member. It will therefore be able to span trading days if it does not get matched. The maximum number of days a GTC order can remain in the system is notified by the Exchange from time to time.

GTD - A Good Till Days/Date (GTD) order allows the trading member to specify the days/date up to which the order should stay in the system. At the end of this period the order will get flushed from the system. Each day/date counted is a calendar day and inclusive of holidays. The days/date counted are inclusive of the day/date on which the order is placed. The maximum number of days a GTD order can remain in the system is notified by the Exchange from time to time.

Cancel on Logout (COL): If member / user entered order with COL, all outstanding order of the user will get cancelled once user logs out from the TWS.

Note: Currently, GTC and GTD orders are not available on the system as per SEBI directives.

C. Quantity Condition:

DQ - Disclosed Quantity (DQ) - An order with a DQ condition allows the Trading Member to disclose only a part of the order quantity/lot to the market. For example, an order of 1000 lots with a disclosed quantity condition of 200 will mean that "200 lots" is displayed to the market at a time. After this is traded, another 200 lots is automatically released and so on till the full order is executed. The Exchange may set a minimum disclosed quantity criteria from time to time.

MF - Minimum Fill (MF) orders allow the Trading Member to specify the minimum quantity by which an order should be filled. For example, an order of 1000 lots with minimum fill 200 will require that each trade be for at least 200 lots. In other words there will be a maximum of 5 trades of 200 each or a single trade of 1000. The Exchange may lay down norms of MF from time to time.

AON - All or None orders allow a Trading Member to impose the condition that only the full order should be matched against. This may be by way of multiple trades. If the full order is not matched it will stay in the books till matched or cancelled. There will not be any partial execution of order.

Note: Currently, AON and MF orders are not available on the system as per SEBI directives.

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.

Proprietary Trading

Trading members are also allowed to trade on own behalf. To facilitate the same Stock Exchanges provide facility of placing order on proprietary (pro) account. Facility of placing orders on proprietary account through trading terminals shall be extended only at one location of the members as specified / required by the members. Trading terminals located at places other than the above location shall have a facility to place orders only for and on behalf of a client by entering client code details as required / specified by the Exchange / SEBI. Proprietary trading is allowed from more than one location is subject to certain conditions. Prior approval of Exchange is required to members for facility of 'proprietary-account' through trading terminals from more than one location and / or CTCL terminal.

6.3.3 Order Modification/ Order Cancellation

Sometimes in a moving market, orders need to be changed in terms of the price and quantity as per the client's requirement. All the orders can be modified till the time they are not fully executed. Order modification is allowed only for certain parameters like price, quantity etc. Also in certain scenarios order will loss time priority due to order

modification. Due to some problems in the moving market or when one does not want to buy or sell contracts, then orders need to be cancelled. In this case only those orders can be cancelled during market hours which have not been fully or partially executed.

6.3.4 Trade execution

Execution of trade occurs when a buyer and seller reach an agreement pertaining to the terms and price of a trade and the order to buy or sell a security is completed after the same is matched on the Exchange platform. Once the order is executed it turns into trade and exchange sends notification of the trade to the broker along with trade number, trade time, traded quantity / lot, traded price, etc. The single order can have multiple trade number. The broker in turn communicates these trades to the client either immediately or at the end of the day. Official communication from broker is done to the client through contract note.

Trade modification is allowed for parameters like client code and custodian participant code. However, there are certain conditions and timings for such modifications. Also these modifications may attract penalties.

Trade annulment: Trading members are allowed to provide trade annulment request on trading system. The request should be submitted within 30 minutes from trade execution. Trade annulment request should satisfy certain condition for further processing. A fee based on value of trade(s) for which annulment is requested, subject to minimum and maximum fee shall be charged as annulment application fee for accepting the request.

6.4 Risk Management and Order Routing

Any transaction or behaviour, whether it is buying, selling or instigating to willfully produce an abnormal effect on prices and/or volumes, goes against the fundamental objective of protecting the interest of the investors of the securities markets. Here the risk management system plays a crucial role. An efficient risk management system is integral to an efficient settlement system.

Obligation to settle the trades lies with the broker, if any client makes any trade default, then the same has to be made good by the broker to the clearing corporation. When orders are accepted and sent to exchange these orders go through various risk management checks for clients. The broker system should have an on-line risk management capability for all orders placed on the Exchange platform. Further, brokers should have various trading limits (like Order Quantity and Value Limits, User / Branch Order Limit, Order Price limit, etc.) on the system and only such orders which are within the parameters specified by the risk management system be allowed to be pushed into exchange trading platform.

Margin is an amount that clearing corporations levy on the brokers for maintaining positions on the exchange. The amount of margin levied is proportional to the exposure and risk the broker is carrying. Since positions may belong to a broker's clients, it is the broker's responsibility to collect the margin upfront from clients and allow trading to client based on the collateral provided by the client. The broker system should have capability to generate reports relating to margin requirements, payments, and delivery obligations. The goal of a broking firm's risk management system is to measure and manage its own and its client's exposure to various risks identified as central to its operations. Broker system should assess the risk of the client as soon as the order comes in, further broker can have system-based control on the trading limits of clients, and exposures taken by clients.

Brokers are required to set pre-defined limits on the exposure and turnover of each client. SEBI/Stock Exchanges have specified various systems / risk management requirements based on the type of broker. For example, Brokers who trade through exchange provided terminals; Brokers who trade through CTCL, IBT, STWT, SOR; and Brokers who use Algorithmic Trading facility. For each risk category, the broking firm must employ procedures to measure and manage firm-level exposure. These are:

Establish Standards and Reports: Every broker has a set of standards which they adhere to, and these are the standards against which a client is measured. In general, and not only among brokers, but certain standards must also be met before rating a company or a client. These must be reported to the management for their perusal and action.

Impose Position Limits and Rules: A key element of financial risk management is deciding which risk to bear and to what degree. A broker firm needs to impose limits to cover exposures, and overall position concentrations relative to systematic risks. SEBI and exchanges prescribe from time to time Open position limit for various categories of products in the Equity Derivatives, Currency Derivative, Interest Rate Derivatives and Commodity Derivative segments.

Set Investment Guidelines and Strategies: A firm should outline investment guidelines and strategies for risk taking in the immediate future in terms of commitments to a particular market area, extent of asset-liability mismatching, or the need to hedge against systematic risk at a particular time. Risk management involves determining what risks a firm's financial activities generate and avoiding unprofitable risk positions. The board's role is usually described as setting the risk appetite of the organization; however, this is not possible if risks are understated or ill defined. Guidelines can advise on the appropriate level of active management, given the state of the market and senior management's willingness to absorb the risks implied by the aggregate portfolio.

6.4.1 Types of Risk for Members

Operational risk is the risk of monetary loss resulting from inadequate or failed internal processes, manual and systems error or external events. For the stock broker, operations risks are essentially risk arises on account of handling of client assets, regulatory non-compliance, trading error, non-payment for buying or selling a scrip, non-delivery of scrip(s), denial of matched order by clients, sudden closure of banks where funds are deposited etc.

Market risk refers to the possibility of incurring large losses from adverse changes in financial asset prices such as stock prices. For the stock broker, market risks are essentially risk arises on account of concentration of client collateral in stocks/sectors, brokers own investment in stocks/sectors etc. This risk entails the erosion of value of marketable securities and assets, due to factors beyond an enterprise's control. Market risk is usually affected by economic developments and political destabilization such as a, rising fiscal gap, national debt, terrorism, energy price shocks, increase in interest rates, all resulting in a drop in equity prices.

Credit risk is the risk of default on a debt that may arise from a borrower failing to make required payments. The credit risk for broker can arise on account of Loans to Group Companies/ Related Parties, debit balance of clients, funding of clients, short collection of margins, Non-confirmation of DVP trade by custodian etc.

A stock broking firm must identify factors that can trigger operational, market and credit risk. It needs to establish procedures so that risk management begins at the point nearest to the assumption of risks. This means adapting trade-entry procedures, customer documentation, client engagement methods, trading limits, and other normal activities to maintain management control, generate consistent data, and eliminate needless exposure to risk.

6.4.2 Pre-Order and Pre-Trade Checks

There are various pre-order (checks which are applicable before order entering into the trading system) and Pre-trade (checks which are applicable before execution of trade) checks which are available on TWS and trading system of the Exchange. Certain checks are monitored by trading member and certain checks are monitored by Exchange trading system. Some of the pre-order and pre trade checks are given below:

Pre-order checks

- Price range check: Orders are allowed to enter within specific price range.
- Quantity Freeze: Single order quantity / lot cannot exceed the limit specified by Exchanges.
- Single order quantity / value limit: This limit is specified by trading member for its dealer.

- User order value limits: This limit can be set up by trading member for its dealer / branch.
- Cumulative open order value checks: This limit can be set up by trading member for its dealer / branch / trading member level
- UCC/PAN check: Trading member can put this check to ensure that order is not entered for unregistered client.

Pre-trade checks

- Trade Execution Range: Orders shall be matched, and trades shall take place only if the trade price is within the trade execution range based on the reference price of the contract.
- Self-Trade Check: Pro / Client orders entered by same/different members are resulting in self-trade due to same PAN or CP code, as the case may be, on the active and passive side, the same shall result in active or passive order will get cancelled due to self-trade checks .
- Market price protection: market with protection order is a combination of market and limit order. It allows the market order to be executed till a specified level mentioned by trader. The risk of an order getting executed at any price is protected by using such order.
- Kill Switch: This will facilitate member to cancel all outstanding order with one single command
- Cancel on Logout (COL): If member / user entered order with COL, all outstanding order of the user will get cancelled once user get logout from the TWS.

6.4.3 Surveillance

The exchanges as first-level regulators have an online surveillance capability that monitors positions, prices, and volumes in real time so as to deter market manipulation. The surveillance systems of the exchanges are designed keeping in view all the relevant aspects, including the following:

i. The alerts in the online surveillance system automatically generate material aberrations from normal activity.
ii. The surveillance systems and processes are able to:
    - Monitor open interest, cost of carry, and volatility.
    - Monitor closing prices.
    - Capture and process client level details.
    - Develop databases of trading activity by brokers as well as clients.
    - Generate trading pattern by a broker over a period of time or by a client / group of clients over a period of time.
iii. The information and feedback received from member inspections are vital inputs for effective surveillance. For this, member inspections are taken up in a rational manner keeping in view the level of trading activity, client profile, number and nature of complaints received against the member, history of risk management related defaults

and regulatory violations, etc. Information obtained through member inspections is made available to the monitoring/ surveillance departments of Exchanges.

iv. The Exchange calls for information from members in a standard form, and preferably in electronic form, to facilitate faster analysis as well as building up of databases.

6.5 Price Limit Circuit Filter

With the view to ensure orderly trading and market integrity, SEBI prescribes stock exchanges to implement a mechanism of price bands so as to prevent acceptance of orders placed beyond the price limits set by the stock exchanges. Following price bands/operating ranges are applicable to currency futures and options contract.

Contract	Price Band
Currency Futures (Contract involving INR	There shall be no daily price bands applicable for Currency Futures contracts. However in order to prevent erroneous order entry by members, operating ranges will be kept at +/-3% of the base price for contracts with tenure upto 6 months and +/- 5% of base price for contracts with tenure greater than 6 months. The dynamic price bands shall be relaxed in increments of 1% as and when a market-wide trend is observed. Suppose in March month, USDINR contract expiring in April with base price as Rs.75, will have operating range will be Rs.72.75 – Rs. 77.25 and USDINR contract expiring in October with base price Rs. 76.50 will have operating range will be Rs. 72.6750-Rs.80.3250.
Cross Currency Futures (Contracts involving other than INR)	There shall be no daily price bands applicable for Cross Currency Futures contracts. However in order to prevent erroneous order entry by members, operating ranges will be kept at +/-3% of the base price for contracts with tenure upto 6 months and +/- 5% of base price for contracts with tenure greater than 6 months. The dynamic price bands shall be relaxed in increments of 1% as and when a market-wide trend is observed.

In case of currency option, the price operating range shall be based on the delta of the options contract and calculated using the previous close price of the underlying and volatility. The price band so computed shall be subject to a minimum operating range which would be applicable for all contracts. The bands shall be computed for each options contract on a daily basis and shall be applicable from the next trading day. The operating range may be flexed during the day in case the options traded price crosses certain percentage of the set range.

6.6 Trading Cost

While trading in Exchange Traded Currency Derivatives (ETCD) on behalf of client, a trading member should specify various charges, including brokerage, payable by the client to avoid any disputes at a later date. Following levies / brokerage can be charged to client:

a. **Statutory levies:** These are charges levied by Central/ State governments e.g. Goods and Service Tax, Security Transaction Tax (STT), Stamp Duty, etc. and may be recovered from client only at actuals paid / payable. Currently, **STT is not applicable for ETCD transactions**.

b. **Regulatory levies/charges:** These are charges levied by SEBI / Exchanges / Clearing Corporations. For e.g. SEBI turnover fees, Exchange transaction charges, etc. If such charges are separately recovered from client, they may be specified in contract notes or may be given under the head "Other levies, if any". The above charges may be recovered from client only at actuals paid/ payable.

c. **Brokerage** can be charged as may be mutually agreed between member and client subject to maximum permissible by the Exchange and brokerage rates should be mentioned in a tariff sheet. Trading member can charge brokerage/commission to its client. The trading member firms have elaborate commission module (brokerage) to attract and retain clients. Given below are the rules for charging brokerage.

Brokerage rule for Derivatives segment are:

- In case of futures, the maximum brokerage chargeable by a trading member in relation to trades executed on the Exchange shall be 2.5% of the contract value exclusive of statutory levies.
- Brokerage on options contracts shall not exceed 2.5% of the premium amount or Rs.100/- per lot whichever is higher.
- There is no minimum brokerage requirement specified.

Trading member can be a full service broker, discount broker or an online broker. Commission charged can be different for different types of brokers.

- Full service broker charges higher commission
- Discount brokers charge a much lower commission
- Online brokers cater to niche segment of retail clients.
    - Commission charged is lesser than what would be charged for a client placing orders through a broker.
- Brokers also use multiple commission schemes such as
    - Volume based commission
    - Slab wise commission or
    - Scrip wise commission.

6.6.1 SEBI Turnover Fees:

Every stock broker / clearing member / self-clearing member shall pay to the SEBI a fee in respect of the securities transactions including Off-market transactions undertaken by them, at the rates specified by SEBI from time to time. Currently for Currency Derivatives the SEBI turnover fees is Rs. 10 per crore of turnover[18]. A clearing member / self-clearing member shall pay a fee of Rs. 50000/- per year till the registration is in force.

6.6.2 Stamp Duty:

In order to facilitate ease of doing business and to bring in uniformity of the stamp duty on securities across States and thereby build a pan-India securities market, the Central Government, through requisite amendments in the Indian Stamp Act, 1899 and Rules made thereunder, has created the legal and institutional mechanism to enable states to collect stamp duty on securities market instruments at one place by one agency (through Stock Exchange or Clearing Corporation authorized by it or by the Depository) on one Instrument. A mechanism for appropriately sharing the stamp duty with relevant State Governments has also been developed which is based on the state of domicile of the buyer. Exchanges / clearing corporation will collect the stamp duty from member. Members have to collect the stamp duty from their clients and remit to Exchange/Clearing Corporation.

Type of Security	Applicable Stamp Duty Rate	Applicable on
Currency Derivatives	0.0001%	Buyer

Stamp Duty is collected on transactions for both futures and option contracts executed on stock exchanges. For the purpose of stamp duty, each futures trade shall be valued at the actual traded price and option trade shall be valued at premium.

[18] The expression 'turnover' shall include the value of the trades executed by the stock broker on the concerned segment of the recognized stock exchange and of the trades settled on the expiration of the contracts. In case of options contracts, 'turnover' shall be computed on the basis of premium traded for the option contracts and in case where the option is exercised or assigned, it shall be additionally computed on the basis of notional value of option contracts exercised or assigned.

Chapter 7: Clearing, Settlement and Risk Management in Exchange Traded Currency Derivatives

LEARNING OBJECTIVES:

After studying this chapter, you should know about following:

- Clearing and Settlement Mechanism
- Risk Management of Clearing Corporation
- Interoperability among Clearing Corporation
- Regulatory Guideline on Position Limits

Introduction

Clearing Corporation registered with SEBI is responsible for clearing and settlement of all trades executed in Exchange Traded Currency Derivatives. Clearing Corporation acts as a legal counterparty to all trades in Currency Derivatives Segment of the Exchange and also guarantees their financial settlement. The Clearing and Settlement process comprises of three main activities, viz., Clearing, Settlement and Risk Management. Clearing and settlement activities are undertaken by Clearing Corporation with the help of Clearing Members and Clearing Banks.

7.1 Clearing and Settlement Mechanism

The clearing mechanism essentially involves working out open positions and obligations of clearing members. This position is considered for exposure and daily margin purposes. The open positions of clearing members are arrived at by aggregating the open positions of all the brokers/trading members and all custodial participants[19] clearing through them. A trading member's open position is arrived at by summing up his proprietary and client's open positions. All derivatives contracts of currency futures and currency option are cash settled. The settlement amount for a clearing member is netted across all their TMs/Clients with respect to their obligations on mark-to-market settlement, premium settlement, and final settlement.

Clearing is the process of determination of obligations, after which the obligations are discharged by settlement. A multilateral netting procedure is adopted to determine the net settlement obligations (delivery/receipt positions) of the clearing members. Accordingly, a clearing member would have either pay-in or pay-out obligations for funds

[19] Custodial participants (CP) are those clients who are eligible for trading through multiple trading members and clearing and settling deals through single clearing member

and securities separately. Settlement is a two-way process which involves transfer of funds and securities on the settlement date.

Important Terminologies pertaining to clearing corporations

Pay-In is a process whereby a Clearing Member brings in money and/or securities to the Clearing House/ Corporation. This forms the first phase of the settlement activity.

Pay-Out is a process where the Clearing House/ Corporation pays money or delivers securities to the Clearing Member. This is the second phase of the settlement activity.

The daily settlement of Exchange Traded Currency Derivatives (ETCD) trades are done on T+1 working day basis while final settlement of ETCD contracts is done on T+2 basis. The final settlement date shall be T+2 day from the last trading day of the contract as specified by the Exchange. The funds pay-in and pay-out of daily mark to market settlement, final settlement of futures contracts, premium settlement and the final exercise settlements of options contracts are typically effected before start of market hours on settlement day. The Clearing Corporations announces the settlement schedule for various segments/products on a periodic basis.

7.2 List of Entities in Clearing and Settlement of ETCD

In this section we will discuss about few important entities of clearing and settlement and their role.

7.2.1 Clearing Corporation

Securities Contract (Regulation) (Stock Exchange and Clearing Corporations) Regulations 2018, defines Clearing Corporation as an entity that is established to undertake the activity of clearing and settlement of trades in securities or other instruments or products that are dealt with or traded on a recognized stock exchange and includes a clearing house and a limited purpose clearing corporation. A Clearing Corporation performs three main functions, namely: clearing and settlement of all transactions executed in the stock market (i.e., completes the process of receiving and delivering shares/funds to the buyers and sellers in the market) and carrying out risk management. The Clearing Corporation acts as a central counterparty i.e., it provides financial guarantees for all transactions executed on the Exchange. It acts as a legal counterparty to all trades through the process called novation. Thus Clearing Corporation becomes the buyer to every seller and seller to every buyer. If there is a default in this scenario, Clearing Corporation being counter party, is responsible for ensuring the settlement, thus managing risk and guaranteeing settlement to both the parties.

The clearing corporation determines fund/security obligations and arranges for pay-in of the same. It collects and maintains margins, processes for shortages in funds and securities. For carrying out settlement of trades, the clearing corporation is helped by the clearing members, clearing banks, custodians and depositories. Thus, these entities are also important intermediaries of securities market.

7.2.2 Clearing Members

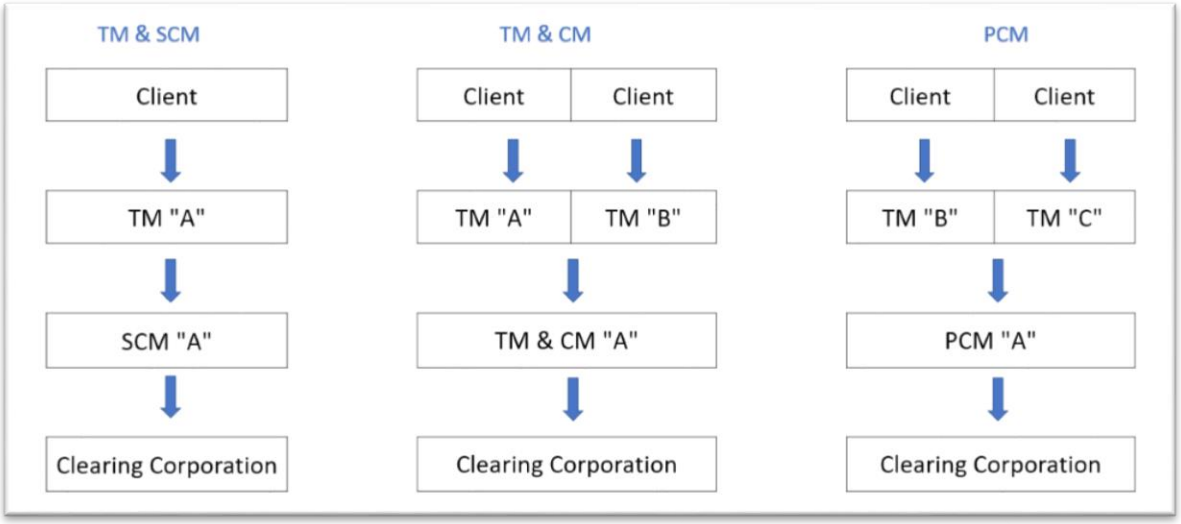
Clearing Members have clearing and settlement rights in any recognized clearing corporation. Clearing Members help in clearing of the trades of their clients. There are three kinds of clearing members - Professional Clearing Members (PCM), Trading Cum Clearing Member (TCM) and Trading cum Self Clearing Member (SCM).

Trading cum Self-clearing member: They have trading as well clearing rights. They clear and settle trades executed by them only, either on their own account or on account of their clients but not for custodian participants.

Trading member–cum–clearing member: They have trading as well clearing rights. They clear and settle their own trades as well as trades of other trading members and custodial participants.

Professional clearing member: They have only clearing rights and do not have trading rights. They clear and settle trades executed by trading members and custodian participants. SEBI registered custodian and Banks recognized by clearing corporations are eligible to become PCM subject to fulfilling the prescribed criteria.

Pictorial representation of various kind of clearing member is given below:



Clearing Members handle the responsibility of clearing and settlement of all deals executed by Trading Members, who clear and settle such deals through them. Clearing Members perform the following important functions:

- Clearing: Computing obligations of all his trading members i.e., determining positions to settle.
- Settlement: Performing actual settlement.
- Risk Management: Setting position limits based on upfront deposits / margins for each trading member/client and monitoring positions on a continuous basis.
- Confirmation of custodian participant trade.

7.2.3 Clearing Banks

Clearing Bank(s) acts as an important intermediary between a clearing member(s) and the clearing corporation. Every clearing member needs to maintain an account with any of the empaneled clearing banks at the designated clearing bank branches. The clearing accounts are to be used exclusively for clearing & settlement operations. It is the function of the clearing members to ensure that the funds are available in his account with clearing bank on the day of funds pay-in to meet the funds obligations. In case of a pay-out clearing member receives the amount on pay-out day. All transactions of pay-in/pay-out of funds are carried out by these clearing banks. The pay-in obligation details are passed on to the clearing banks by clearing corporation, who then debit the clearing member account and based on pay-out instruction from clearing corporation the clearing bank will credit the receiving member clearing account. In case of ETCD this mainly happens on T+1 day for daily settlement and T+2 day on final settlement. The clearing banks are required to provide certain minimum services as specified by Clearing Corporation to clearing members.

7.2.4 Depository & Depository Participants

A "Depository" is an entity facilitating holding of securities in electronic form and enables transfer of securities by book entry. The main objective of depository is to provide maintenance of ownership or transfer records of securities in an electronic book entry form resulting in paper-less trading rather than paper-based trading and to ensure transferability of securities with speed, accuracy and safety. The Depository provides its services to clients through its agents called Depository Participants (DPs). In Exchange Traded Currency Derivatives (ETCD), the role of Depository and DPs are mainly limited towards pledge and re-pledge of securities as collateral towards margin.

7.3 Interoperability of Clearing Corporation

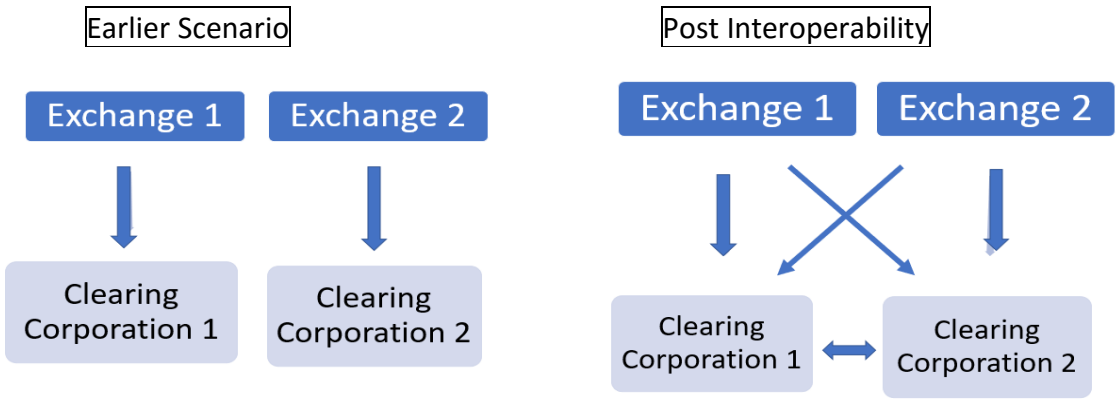
SEBI introduced the concept of Interoperability among Clearing Corporations which necessitates linking of multiple Clearing Corporations. Inter-operability among Clearing Corporation (CC) has enabled a Clearing Member to select the Clearing Corporation of its

choice to clear and settle trades executed in multiple exchanges. It allows market participants to consolidate their clearing and settlement functions at a single Clearing Corporation, irrespective of the stock exchange on which the trade is executed. It is expected that the interoperability among Clearing Corporations would lead to efficient allocation of capital for the market participants, thereby saving on costs as well as provide better execution of trades.

The interoperability framework is applicable to all the recognised clearing corporations excluding those operating in International Financial Services Centre (IFSC) and all the products available for trading on stock exchanges, except commodity derivatives, made available under this framework. Hence, interoperability is also applicable to Currency Derivatives Segment. The recognised clearing corporations shall establish peer-to-peer link for ensuring interoperability. A clearing corporation shall maintain special arrangements with another clearing corporation and shall not be subjected to normal participant (membership) rules. Risk management between the clearing corporations shall be based on a bilaterally approved framework and shall ensure coverage of inter-clearing corporation exposures. Clearing corporations shall exchange margins and other financial resources on a reciprocal basis based on mutually agreed margining models.

To manage the inter-Clearing Corporation exposure in the peer-to-peer link, Clearing Corporations shall maintain sufficient collateral with each other so that any default by one Clearing Corporation, in an interoperable arrangement, would be covered without financial loss to the other non-defaulting Clearing Corporation. The inter- Clearing Corporation collateral shall comprise two components, viz. (a) Margins as per the existing Risk Management Framework (initial margin, extreme loss margin, calendar spread margin, etc.) prescribed by SEBI; and (b) Additional capital, to be determined by each Clearing Corporation, based on the credit risk from the linked Clearing Corporation, on which no exposure shall be granted to the linked Clearing Corporation.

Pictorial representation of Interoperability among clearing corporations



Following are some of the benefits of Interoperability among clearing corporations

- Choice to participants to choose the clearing corporation
- Better capital utilization
- Reduce trading disruption
- Reduce aggregate exposure
- Reduced operational complexity
- Enhanced market competition and lower cost of clearing
- Execution risk can be decoupled from settlement risk as there can be an 'arm's length' relationship between the exchange and adjunct clearing corporation.

7.4 Clearing Mechanism

The clearing mechanism essentially involves working out open positions and obligations of 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[20]. 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 at contract level 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.

To illustrate, consider a clearing member 'A' with trading members clearing through him 'PQR' and 'XYZ'.

			Proprietary Position			Client 1			
TM	Instrument	Expiry	Buy qty*	Sell qty	Net qty	Buy qty	Sell qty	Net qty	Position
PQR	USDINR Futures	Oct 21	5000	3000	2000	3000	2000	1000	Long 3000
	EURINR futures	Oct 21	1000	2000	(1000)	2000	1000	1000	Long 1000 Short 1000
XYZ	USDINR Futures	Oct 21	2000	4000	(2000)	3000	4000	(1000)	Short 3000
	EURINR futures	Oct 21	1000	3000	(2000)	2000	1000	1000	Long 1000 Short 2000

*Qty indicate lots

[20] The contract will be distinguished based on futures and option, underlying instrument, expiry date, option type, strike price.

Please note that while computing open position of PQR, long position of client 1 were not netted off against short position of proprietary book for EURINR futures. Further there is no netting between long position of proprietary book in USDINR Futures with short position of proprietary book in EURINR futures. The positions were rather summed up to compute open position of PQR as a TM. Trading member PQR overall open position in USDINR Futures October series will be long 3000 lots and in EURINR futures October series will be long 1000 and short 1000 lots. Similarly, trading member XYZ overall open position in USDINR Futures October series will be short 3000 lots and in EURINR futures October series will be long 1000 and short 2000 lots. Similarly, no netting will be given to clearing members for counter positions of trading members. The positions were rather summed up to compute open position of clearing member A.

Hence, clearing member A's overall open position in USDINR Futures October series will be long 3000 and short 3000 lots and in EURINR futures October series will be long 2000 and short 3000 lots.

7.5 Determination of Settlement Obligation

7.5.1 Settlement of Admitted Deals

Admitted deals executed on a trading day, shall be cleared on a netted basis, by the Clearing Corporation as prescribed under the relevant regulation. Subject to the above, settlement obligations for all clearing members shall arise. The clearing members shall be responsible for all obligations arising out of such trades including the payment of margins, penalties, any other levies and settlement of obligations of the trades entered by them as trading members and also of those trading members and custodial participants, if any, for whom they have undertaken to settle as a clearing member. Where the clearing member is not a trading member of the Exchange then the trades of those trading members and custodial participants of the Exchange for whom the clearing member has undertaken to settle shall be considered for determining the obligations as a clearing member.

7.5.2 Confirmation of trades entered by custodial participants

Custodial participants are those constituents who are eligible for trading through multiple trading members and who clear and settle deals through single clearing member. Such custodial participants shall register themselves with the Clearing Corporation through their clearing members and avail unique code (custodian participant code) which is link to their clearing member. For such participant trading member needs to enter custodian participant code at the time of order entry. Clearing members of the custodial participants shall confirm trades entered by trading member of the custodial participants. Such trades shall be confirmed by the clearing members in such manner, within such time and through such facility as may be provided to clearing members from time to time. Such

confirmation shall be carried out within such time as may be specified by the Exchange / Clearing Corporation from time to time where such trades have been entered. All such trades which have been confirmed by clearing members shall form part of the obligations of clearing members concerned and such clearing members shall be responsible for all obligations arising out of such trades including the payment of margins, penalties, any other levies and settlement of obligations. Trades which have not been confirmed by clearing members of the custodial participants shall be considered as trades pertaining to the trading members entering such trades and shall form a part of the obligations of clearing members, who clear and settle for such trading members.

7.5.3 Settlement Obligation

Clearing Corporation receives the details of trades and prices from the Exchange. Settlement obligations are computed using predefined methodology specified for the segment/product. The obligations are generated and downloaded to trading and clearing member at end of day. Some of the methods of determining obligations are listed below:

a) ***Daily mark to market settlement of futures contract***: Daily settlement prices will be computed for futures contracts based on specified methodology. All open positions will be marked to market at the settlement prices to determine mark to market obligations to be settled in cash. All open positions will be carried forward at the latest daily settlement prices.
b) **Final settlement for futures contract** (currently all ETCD contracts available on Exchanges are cash settled): All positions (brought forward, created during the day, closed out during the day) of a clearing member in futures contracts, at the close of trading hours on the last trading day of the contract which are cash settled, shall be marked to market at final settlement price (for final settlement) and settled.
c) **Premium settlement for option contracts:** Premium settlement in respect of admitted deals in options contracts shall be cash settled by debit / credit of the clearing accounts of clearing members with the respective clearing bank. The premium payable or receivable value of clearing members shall be computed after netting the premium payable or receivable positions at trading member/Custodial Participant level, for each option contract, at the end of each trading day.
d) **Exercise settlement for option contracts** (currently all ETCD contracts available on Exchanges are cash settled)**:** In case of ETCD, all in-the-money contract get exercised automatically. In-the money long positions contracts shall be assigned to short positions in option contracts with the same series on a random basis. For option contracts that are to be cash settled shall be by debit/ credit of relevant clearing accounts of relevant clearing members with the respective clearing bank towards the exercise settlement value for each unit of the option contract.
e) ***Netted obligation***: Fund obligation is computed for clearing member on a netted basis considering all the above obligations. Funds obligation is generated on netted basis considering ETCD (Exchange Traded Currency Derivatives) and ETIRD (Exchange Traded Interest Rate Derivatives) obligations of a clearing member as both are part of

Currency Derivatives Segment of the Exchange. Hence, clearing member will either have funds pay-in or funds pay-out for a day.

7.6 Position Limits

In order to avoid building up of huge open positions, the regulator has specified the maximum allowable position limit at client level, member level, currency level etc. Position limits are the maximum exposure levels which the entire market can go up to and each trading member or investor can go up to.

A. Trading Member (Banks and Non-Banks) (Also applicable to Domestic Institutional Investors (DIIs) as permitted by the respective sectoral regulator and AD-Category I Bank, FPI Category I & II (other than Individual, family office and Corporates)

USDINR	Higher of 15% of the total open interest or USD 100 million*
EURINR	Higher of 15% of the total open interest or EUR 50 million
GBPINR	Higher of 15% of the total open interest or GBP 50 million
JPYINR	Higher of 15% of the total open interest or JPY 2000 million
EURUSD	Higher of 15% of the total open interest or EUR 100 million
GBPUSD	Higher of 15% of the total open interest or GBP 100 million
USDJPY	Higher of 15% of the total open interest or USD 100 million

* For Bank trading member as authorized by RBI: Gross open position across all contracts shall not exceed 15% of the total open interest or USD 1 billion, whichever is higher.

B. Domestic Clients, Non-Resident Indians (NRIs) and FPI Cat II (Individuals, family offices and corporates)

USDINR	Higher of 6% of the total open interest or USD 20 million
EURINR	Higher of 6% of the total open interest or EUR 10 million
GBPINR	Higher of 6% of the total open interest or GBP 10 million
JPYINR	Higher of 6% of the total open interest or JPY 400 million
EURUSD	Higher of 6% of the total open interest or EUR 10 million
GBPUSD	Higher of 6% of the total open interest or GBP 10 million
USDJPY	Higher of 6% of the total open interest or USD 10 million

C. Prop Position for Stock-Broker (other than bank)

USDINR	Higher of 15% of the total open interest or USD 50 million
EURINR	Higher of 15% of the total open interest or EUR 25 million
GBPINR	Higher of 15% of the total open interest or GBP 25 million
JPYINR	Higher of 15% of the total open interest or JPY 1000 million

EURUSD	Higher of 15% of the total open interest or EUR 50 million
GBPUSD	Higher of 15% of the total open interest or GBP 50 million
USDJPY	Higher of 15% of the total open interest or USD 50 million

D. The Stock Brokers (bank and non-bank) shall ensure that all proprietary positions created in FCY-INR pairs (USD-INR, EUR-INR, GBP-INR and JPY-INR) is within the following consolidated position limits:

Single INR limit for proprietary position for bank stock broker	Single INR limit for proprietary position for non-bank stock broker
Higher of 15% of total OI across all FCY-INR pairs or USD 200 million	Higher of 15% of total OI across all FCY-INR pairs or USD 100 million

E. Single limit across currency

As per clause 3 of RBI circular RBI/2019-20/210 AP (Dir Series) Circular 29 dated April 07,2020:
Quote

" i. Users[21] may take positions (long or short), without having to establish existence of underlying exposure, upto a single limit of USD 100 million equivalent across all currency pairs involving INR, put together, and combined across all exchanges.

ii. Exchanges authorised by RBI to offer currency derivatives shall provide facility to users, intending to take position beyond USD 100 million (or equivalent) in contracts involving INR in all exchanges put together, to designate an Authorised Dealer/Custodian.

iii. For users referred to in the previous para, the exchanges shall provide information on day-end open positions as well as intra-day highest position of the user to the designated Authorised Dealer/Custodian.

iv. The onus of complying with the directions shall rest with the user. In case of any contravention, the user shall render itself liable to any action under the Foreign Exchange Management Act (FEMA), 1999"

F. Position Limit – Other Guidelines

I. For the purpose of computation of position limit, respective Exchanges previous day's open interest will be considered.

[21] User is any person as defined under para 2(u) of FEMA, 1999 whether resident in India or resident outside India.

II. The position limit linked to open interest shall be applicable at the time of opening a position. Such positions shall not be required to be unwound immediately in the event of a drop of total open interest.

III. However, in the aforementioned scenario, the eligible market participants shall not be allowed to increase their existing positions or create new positions till they comply with the applicable position limits.

IV. Notwithstanding the above, in view of risk management or surveillance concerns with regard to such positions of the market participants, stock exchanges may direct the market participants to bring down their positions to comply with the applicable position limits within the time period prescribed by the stock exchange.

V. No separate position limit is prescribed at the level of clearing member. However, the clearing member shall ensure that his own trading position and the positions of each trading member clearing through him is within the limits specified above.

VI. For the purpose of computing the client level gross open position, Long position shall be considered as Long Futures, Long Calls; and Short Puts and Short Position shall be considered as Short Futures, Short Calls, and Long Puts.

VII. For conversion to USD 100 million equivalent, Exchange provides the conversion ratio on quarterly basis

In addition to above participants are required to adhere to the Foreign Exchange Management Act, 1999, Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000, RBI Master Direction - Risk Management and Inter-Bank Dealings, any other guideline/notification/regulation provided by RBI / SEBI and other market regulators with regards to trading in Foreign exchange derivatives contract. We will examine the regulatory guideline on user participation in Exchange Traded Currency Derivatives subsequent chapters.

<u>Monitoring of position limits:</u>

Clearing corporation end of day provides Exchange wise position limit applicable to various clients and member for next day. The position limits are always specified in number of lots.

For example, suppose at EOD in Exchange "A" total open interest for USDINR is 4 million contracts and in Exchange "B" it is 0.5 million contracts. Then position limits for USDINR applicable for next day will be as follows:

Category	Exchange A	Exchange B
A. TM (Banks and Non-Banks), Domestic Institutional Investors, FPI Category I & II (other than	Higher of 15% of 4 million contract = **0.6 million contracts** Or	Higher of 15% of 0.5 million contracts = 0.075 million Or

Individual, family office and Corporates)	0.10 million contracts. (USD100 million = 0.10 million contract as 1 contract =1000 USD) **Position limit = 0.60 million contracts i.e. 600 million USD**	**0.10 million contracts**. **Position limit = 0.10 million contracts i.e. 100 million USD**
B. Domestic Clients, Non-Resident Indians (NRIs) and FPI Cat II (Individuals, family offices and corporates)	Higher of 6% of 4 million contract = **0.24 million contracts** Or 0.02 million contracts. (USD20 million = 0.02 million contract as 1 contract =1000 USD) **Position limit = 0.24 million contracts i.e. 240 million USD**	Higher of 6% of 0.5 million contracts = 0.03 million Or **0.02 million contracts**. **Position limit = 0.03 million contracts i.e. 30 million USD**

For monitoring position limit specified in 7.6 (E), clearing corporation provide day end position and intra-day highest position at EOD to the Authorised Dealer (in case of domestic clients, wherever applicable) and to the Custodian[22] (in case of FPIs).

Monitoring of position limits are done by the Exchanges and /or clearing corporation. When the open position any trading member/client, exceeds the specified limit at any time, it shall be treated as a violation. The clearing member is accountable for positions of all trading members and clients of trading members clearing through him. Similarly, the trading member is accountable for the positions of his clients. Exchange / Clearing Corporation may take following action against trading member and/or client level position limit violation.

- Trading Member shall be restrained from taking any further positions in which there is violation and trading member shall be required to bring their positions within the specified limit.
- Trading member may use the existing close-out facility to place close-out orders in which there is violation.
- Penalty can be levied for such violation

[22] Custodian means any person who carries on or propose to carry on the business of providing custodial service. To provide custodian services entity has registered with SEBI and obtain certificate to carry custodian services. A Custodian is an entity that is responsible for safeguarding the securities of its clients

7.7 Settlement

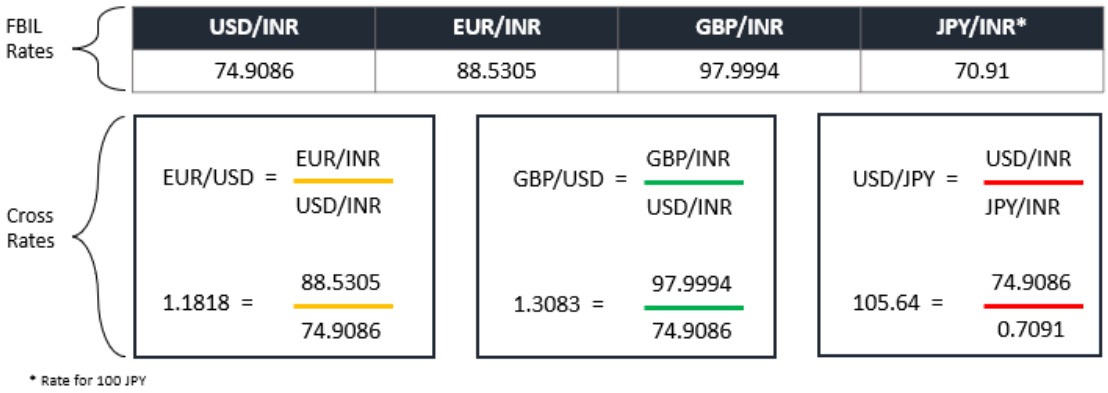
Settlement follows clearing and consists of receipt and payment of cash and/or delivery of underlying (in case of physical settlement) after multilateral netting in the clearing. Physical settlement generally means exchange of cash for the underlying asset. Physical settlement does not mean that every sell trade during contract's life results in physical delivery. The seller can always close ("square up") his position with an offsetting buy trade, but it must be done before the close of business on the last trading day. In case of physical delivery, the open position at the close on last trading day must be settled with physical delivery of underlying asset. For example, if USDINR future is physically settled, then buyer will pay INR and receive USD and seller will pay USD and receive INR on expiry.

Currently all Exchange Traded Currency Derivatives contracts are cash settled in Indian Rupees. All open positions on the last trading day of the futures contract shall be marked to the final settlement price of the relevant futures contract and shall be cash settled. The profit / loss resulting there from shall be paid to/ received from such member in accordance with the laid down settlement procedures in this regard. In case of options all In the money (ITM) contracts are get exercised automatically and the amount is debited / credited to relevant clearing member. The daily settlement of ETCD trades are done on T+1 working day and final settlement of ETCD trades are done on T+2 working day i.e. two business days after contract expiry date (For monthly contracts it will be last business /working day). The funds pay-in and pay-out of daily mark to market settlement, final settlement of futures contracts, premium settlement and the final exercise settlements of options contracts are typically effected before start of market hours on the settlement day. The Clearing Corporations announces the settlement schedule for various segments/products on a periodic basis.

Settlement Price for ETCD contracts are given in the following table:

Product	Settlement	Price
Currency Futures	Daily Settlement	Closing price of the futures contracts for the trading day. (The closing price for a futures contract shall be calculated on the basis of the last half an hour weighted average price across Exchanges of such contract)
Un-expired illiquid Currency futures contracts	Daily Settlement	Theoretical Price computed as per formula $F=S * e^{(r-rf)t}$
Currency Futures and Options (contract involving Indian Rupee)	Final Settlement	FBIL reference rate on the last trading day
Cross Currency Futures and Options (contract	Final Settlement	The final settlement price for cross-currency futures contracts shall be computed using the FBIL reference

involving other than Indian Rupee)		rate for USD-INR, EUR-INR, GBP-INR and JPY-INR, on the last trading day of the contract.



7.7.1 Daily Mark to Market (MTM) settlement of futures contract

Daily settlement prices will be computed for currency futures contracts based on methodology specified in above table. All positions (brought forward, created during the day, closed out during the day) of a clearing member in currency futures contracts, at the close of trading hours on a day, shall be marked to market at the daily settlement price (for daily mark to market settlement) and settled in cash. The settlement is done by debit/ credit of the clearing accounts of clearing members with the respective clearing bank on T+1 as per timeline specified by clearing corporation. All open positions will be carried forward at the latest daily settlement prices. Please find below MTM settlement for participant who has sold 1 lot of USDINR futures @ Rs. 74.90 on 21-XX-2020 and keep open till expiry.

USD Futures (XX Expiry)				1 contract = 1000 USD
Date (A)	Sell Price (B)	Settlement Price (C)	Mark to Market Spread (D)	Per contract P&L (E)
			(B-C)	(D*1000)
21-XX-20	74.9000	74.6925	0.2075	207.50
22-XX-20	74.6925	74.6225	0.0700	70.00
23-XX-20	74.6225	74.8425	-0.2200	-220.00
24-XX-20	74.8425	74.8550	-0.0125	-12.50
27-XX-20	74.8550	74.8200	0.0350	35.00
28-XX-20	74.8200	74.8450	-0.0250	-25.00
29-XX-20*	74.8450	74.7667*	0.0783	78.30

		Net Effect	**0.1333**	**133.30**

** On expiry – final settlement price*

Positions in Cross currency contracts shall be marked to market at the daily settlement price and profit will be arrived in quote currency. However, it would be settled in cash in Indian Rupee (INR). To arrive at the settlement value of cross currency positions in INR for EUR-USD and GBP-USD contracts, the latest available FBIL reference rate for USD-INR shall be used. For USD-JPY contracts, the settlement value in INR shall be arrived at using the latest available exchange rate published by FBIL for JPY-INR. Please find below MTM settlement for cross currency futures where participant who has bought 10 lot of EURUSD futures @ USD 1.1570 on 23-XX-2020 and keep open till expiry.

Trade Date	Buy Price	Settlement Price	MTM in **USD** for 10 contracts	FBIL Ref Rate (USDINR)	MTM in INR
23-XXX-20	1.1570	1.1577	7[#]	74.7548	523.28
24-XXX-20	1.1577	1.1571	-6	74.8672	-449.20
27-XXX-20	1.1571	1.1720	149	74.7620	11,139.54
28-XXX-20	1.1720	1.1736	16	74.7458	1,195.93
29-XXX-20*	1.1736	1.1749*	13	74.7667	971.97

#7.00 = (1.1577 – 1.1570) * 10 (no. of contracts) * 1000 (contract size)

** On expiry FSP will be derived from FBIL reference rate*

7.7.2 Premium settlement for option contracts:

Premium settlement in respect of admitted deals in currency options contracts shall be cash settled by debit/ credit of the clearing accounts of clearing members with the respective clearing bank on T+1 as per timeline specified by clearing corporation. The premium payable or receivable value of clearing members shall be computed after netting the premium payable or receivable positions at trading member/Custodial Participant level, for each option contract, at the end of each trading day. Wherein, premium variation in currency options position will be adjusted against the collateral placed and not cash settled.

For cross currency option contracts, premium would be settled in INR. To arrive at the settlement value in INR for EUR-USD and GBP-USD contracts, the latest available FBIL reference rate for USD-INR shall be used. For USD-JPY contracts, the settlement value in INR shall be arrived at using the latest available exchange rate published by FBIL for JPY-INR.

7.7.3 Final Settlement

Final settlement for currency futures contract

All positions (brought forward, created during the day, closed out during the day) of a clearing member in futures contracts (including cross currency futures), at the close of trading hours on the last trading day of the contract, shall be marked to market at final settlement price (for final settlement) and settled in cash on T+2 day by debit/ credit of the clearing accounts of clearing members with the respective clearing bank. Open positions in a futures contract shall cease to exist after its expiration day.

Final exercise settlement for currency option contracts:

On expiry date, all open long in-the-money contracts shall be automatically exercised at the final settlement price and assigned on random basis to the open short position of the same strike and series. Exercise settlement shall be effected on T+2 day by debit/ credit of the clearing accounts of clearing members with the respective clearing bank. Exercise settlement in respect of admitted deals in option contracts shall be cash settled by debit/ credit of the clearing accounts of the relevant clearing members with the respective clearing bank. Option contracts, which have been exercised, shall be assigned and allocated to clearing members at the client level. Open positions in an option contracts shall cease to exist after its expiration day. Cross currency option settlement in INR is arrived by using applicable FBIL reference rate of USDINR and JPYINR.

7.8 Fund Settlement

Every clearing member shall maintain and operate a separate and distinct primary clearing account with one of the designated as clearing banks. Every clearing member shall maintain and operate a separate and distinct primary clearing account for each segment. Clearing members having funds obligation to pay should have clear balance of requisite funds in the clearing accounts of Currency Derivatives Segment of Exchange (CDS) on or before the stipulated funds pay-in day and the stipulated time.

- Pay-in of funds: Clearing Corporation advises Clearing Banks to debit account of Clearing members and credit its account and clearing bank does the same.
- Pay-out of funds: Clearing Corporation advises Clearing Banks to credit account of Clearing members and debit its account and clearing bank does the same.

Clearing members can deposit funds into these accounts in any form and can withdraw funds from these accounts only in self-name.

Fund Shortages

Non-fulfilment of settlement obligation towards settlement of contracts traded on currency derivatives segment by the scheduled date and time shall be treated as a violation. In case of a settlement shortage in additional to monetary penalty, clearing corporation may advise the Exchanges to withdraw any or all of the membership rights of

the clearing member including the withdrawal of trading facilities of all trading members and/ or clearing facility of custodial participants clearing through such clearing member.

7.9 Risk Management

A comprehensive Risk Management framework is the backbone of the Clearing Corporation. A clearing corporation provides settlement guarantee i.e., the settlement of securities and funds will take place even if there is a failure by a broker/clearing member to fulfill their obligation. In order to safeguard against such failures, the clearing corporation is required to carry out the risk management measures as specified by SEBI through its various circulars. Clearing Corporations, risk containment measures include capital adequacy requirements of members, monitoring of member performance and track record, stringent margin requirements, position limits based on capital, online monitoring of member positions and automatic disablement from trading when limits are breached, etc. Risk Management framework mainly consists of the margin, liquid asset, base minimum capital, pre-trade risk control, risk reduction mode, monitoring of position limit etc. We will be discussing more on margin requirement for ETCD in the following section.

Following are the salient features of Clearing Corporation Risk Management System:

- On-line real time risk management
    - Online monitoring of margin against liquid assets
    - On-line position limit monitoring
- Scientific way of identifying margin level
- Different kind of margins to cover all kind of losses
- Intra-day and end of day mark to market
- Client level margining
- Alert to member on various level of collateral utilization
- Risk reduction mode
- Automatic disablement from trading when limits are breached
- Cross margining facility
- Capital adequacy requirements of members
- Monitoring of member performance and track record

Every Clearing Corporation has a comprehensive risk containment mechanism for the currency derivatives segment. The salient features of risk containment mechanism on the currency derivatives segment are:

1. The financial soundness of the members is the key to risk management. Therefore, the requirements for membership in terms of capital adequacy (net worth, security deposits) are quite stringent.
2. Upfront initial margin & extreme loss margin (ELM) are charged for all the open positions of a CM. The Exchange/CC specifies the initial margin requirements for each futures contract on a daily basis. It also follows a value-at-risk (VaR) based margining

through SPAN® (Standard Portfolio Analysis of Risk). The CM in turn collects the initial margin and ELM from the TMs and TMs from their respective clients.

3. The open positions of the members are marked to market based on contract settlement price for each contract. The difference is settled in cash on a T+1 basis for future contract and for option contract same is adjusted against liquid asset.
4. The on-line position monitoring system monitors the member's open positions and margins on a real-time basis vis-à-vis the deposits provided by the CM or the limits set for the TM by the CM. The on-line position monitoring system generates alerts whenever the margin of a member reaches the predetermined percentage of the capital deposited by the CM or limits set for the TM by the CM. The Clearing Corporation monitors the CMs for initial margin and extreme loss margin violations.
5. CMs are provided with a trading terminal for the purpose of monitoring the open positions of all the TMs clearing and settling through them. A CM may set limits for a TM clearing and settling through him. The Clearing Corporation assists the CM to monitor the intra-day limits set up by a CM and whenever a TM exceeds the limits, it stops that particular TM from further trading.
6. A member is alerted of his position to enable him to adjust his position or bring in additional capital. Margin violations result in withdrawal of trading facility for all TMs of a CM in case of a violation by the CM.
7. Separate settlement guarantee funds for this segment have been created by clearing corporation.

Risk Management framework for ETCD consists of the following:

- Margins
- Liquid Net worth & Liquid Assets
- Pre-trade risk control[23]
- Risk Reduction Mode
- Position Limits[24]

7.9.1 Margin

Margining is a process by which a clearing corporation computes the potential loss that can occur to the open positions (both buy and sell) held by the members across all its clients. Based on the computation, the clearing corporation will ensure that the liquid assets deposited by members are sufficient to cover the potential loss. In stock exchange mechanism, clearing corporation will collect the margins from members and member will collect the margin from their respective clients. Clearing corporation compute margin at client level position and there is no netting of positions between clients / member etc. Clearing Corporation collects various kinds of margin from its member as given below:

[23] Please refer section 6.4

[24] Please refer section 7.6

7.9.1.1 Initial Margin

Initial margin is payable on all open positions of clearing members, up to client level and shall be payable upfront by Clearing Members in accordance with the margin computation mechanism adopted by the Clearing Corporation. Initial margin shall include SPAN margins, Margin on consolidated crystallized obligation, delivery margins and such other additional margins that may be specified by the clearing Corporation from time to time[25].

Initial margin requirement:

1. For client positions - shall be netted at the level of individual client and grossed across all clients, at the trading/ clearing member level, without any set-offs between clients.
2. For proprietary positions - shall be netted at trading/ clearing member level without any set-offs between client and proprietary positions.

The margins so computed shall be aggregated first at the trading member level and then aggregated at the clearing member level.

7.9.1.1.1 Computation of Initial Margin

Clearing Corporation adopted SPAN[26] system for the purpose of real time initial margin computation. The SPAN methodology shall be adopted to take an integrated view of the risk involved in the portfolio of each individual client. Initial Margin requirement shall be based on a worst scenario loss of a portfolio of an individual client comprising his positions in options and futures contracts on the same underlying across different maturities and across various scenarios of price and volatility changes. Initial margin requirements shall be based on 99% value at risk (VaR) over a one day time horizon. Value-at-risk (VaR) is a measure of maximum likely price change over a given interval (called "horizon") and at a given confidence level (called "percentile"). However, in the case of futures contracts, where it may not be possible to collect mark to market settlement, before the commencement of trading on the next day, the initial margin shall be computed over a two day time horizon by applying an appropriate statistical formula. SPAN margining uses VaR to compute initial margin but improves upon it with two modifications. It generates 16 "what-if" scenarios. The second and more important feature of SPAN margin is that it considers the entire portfolio of an investor for computing the portfolio-wide margin. The margin is not computed for each position separately. The methodology for computation of value at risk percentage shall be as per the recommendations of SEBI from time to time.

For the purpose of SPAN Margin, various parameters as specified hereunder will be applicable:

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[25] SEBI/HO/MRD2/DCAP/CIR/P/2020/27 dated February 24, 2020

[26] It is a product developed by Chicago Mercantile Exchange (CME) and is extensively used by leading stock Exchanges of the world. SPAN® uses scenario-based approach to arrive at margins. It generates a range of scenarios and highest loss scenario is used to calculate the SPAN margin.

Price Scan Range

The Price Scan Range ("PSR") is the probable price change over a one-day period. The PSR will be specified by clearing corporation from time to time subject to following:

Product	Based on 6σ subject to minimum percentage of underlying price
USDINR	1.50%
EURINR	2.15%
GBPINR	2.25%
JPYINR	2.65%
EURUSD	2.50%
GBPUSD	2.50%
USDJPY	2.50%

Volatility calculation

The standard deviation (volatility estimate) is calculated using the Exponential Weighted Moving Average (EWMA). The estimate at the end of time period t (σt) shall be estimated using the volatility estimate at the end of the previous time period. i.e. as at the end of t-1 time period (σt-1), and the return (rt) observed in the futures market during the time period t. The formula shall as under:

$$(\sigma_t)^2 = \lambda\,(\sigma_{t-1})^2 + (1 - \lambda)\,(r_t)^2$$

The value of λ, the parameter which determines how rapidly volatility estimation changes in the Exponential Weighted Moving Average (EWMA) method, shall be fixed at 0.995.

Volatility Scan Range

For currency derivatives, the volatility scan range for generating the scenarios would be 25% of annualized EWMA volatility subject to minimum 3%.

Updation of risk parameters

The parameters for computation of span margin shall be updated based on the prices at 11:00 a.m., 12:30 p.m., 2:00 p.m., 3:30 p.m., 5:00 p.m., 6:30 p.m., end of the day and begin of the day. Additionally a provisional end of day parameter file based on daily settlement prices of currency contracts based on FCY-INR pairs shall be provided. The information is also available Exchanges/Clearing Corporation website.

7.9.1.1.2 Net Option Value

Net Option Value is computed as the difference between the long option positions and the short option positions, valued at the last available closing price of the option contract and shall be updated intraday at the current market value of the relevant option contracts

at the time of generation of risk parameters The Net Option Value shall be added to the Liquid Net Worth of the clearing member. Thus, mark to market gains and losses shall not be settled in cash for options positions.

7.9.1.1.3 Calendar Spread Charge:

A futures position in one expiry month which is hedged by an offsetting position in a different expiry month would be treated as a calendar spread. The following calendar spread margins shall be levied:

Product	Calendar spread charge for spreads in months (INR)			
	1 month	2 months	3 months	4 months or more
USDINR	500	600	900	1100
EURINR	750	1050	1550	1550
GBPINR	1575	1875	2075	2075
JPYINR	675	1075	1575	1575
EURUSD	1600	1900	2100	2200
GBPUSD	1600	1900	2100	2200
USDJPY	1600	1900	2100	2200

The margins for options calendar spread shall be same as specified for futures calendar spread. The margins for option calendar spread shall be calculated on the basis of delta of the portfolio in each month. A portfolio consisting of a near month option with a delta of 100 and a far month option with a delta of –100 would bear a spread charge equal to the spread charge for a portfolio which is long 100 near month futures and short 100 far month futures. The benefit for a calendar spread would continue till expiry of the near month contract.

7.9.1.1.4 Margin on consolidated crystallized obligation

The margin on consolidated crystallized obligation in derivatives shall represent:

On Intra-day Basis	Payable crystallized obligations based on the closed-out futures positions and payable/receivable premium at client level.
At end-of-day basis	Payable obligations at client level considering all futures and options positions.

Intraday basis

On intraday basis, the net payable/receivable amount at client level shall be calculated using:

1. Premium payable/receivable
2. Futures crystallized profit or loss (calculated based on weighted average prices of trades executed).

If the overall amount at client level is payable, such amount shall be the intraday consolidated crystallized obligation margin for the client.

End-of-day basis

At the end of day, the payable/receivable amount at client level shall be calculated using:

1. Futures mark to market profit/loss to be settled
2. Options premium payable/receivable
3. Options exercise/assignment for expired contracts
4. Futures final settlement for expired contracts

If the overall amount at client level is payable, such amount shall be the end of-day consolidated crystallized obligation margin for the client. The margin on consolidated crystallized obligations shall be released on completion of settlement.

The initial margins for cross currency derivatives shall be collected in Indian Rupees (INR). For this purpose, RBI reference rate of previous day for USD-INR or JPY-INR, as applicable, shall be used till 02:00 p.m. The latest available FBIL reference rate for USD-INR and the corresponding exchange rate published by FBIL for JPY-INR, as applicable, shall be used post 02:00 p.m. Since the margins shall be collected in INR, the price scanning range shall be scaled up by the total futures margin rate of the contract involving the quoted currency in cross-currency pair and INR.

The margin on consolidated crystallized obligations has replaced the net buy premium, intraday crystallized losses, assignment margin and futures final settlement margin levied.

7.9.1.2 Extreme Loss Margin

Clearing members shall be subject to extreme loss margins in addition to initial margins:

Product	ELM: Futures	ELM: Options
USDINR	0.50%	0.75%
EURINR	0.15%	0.75%
GBPINR	0.25%	0.75%
JPYINR	0.35%	0.75%
EURUSD	0.50%	0.50%
GBPUSD	0.50%	0.50%
USDJPY	0.50%	0.50%

Notes:

1. In case of calendar spread positions in currency futures contracts, extreme loss margin will be one third of the mark to market value of the open position of the far month contract.
2. The applicable extreme loss margin for futures shall be calculated on the mark to market value of the gross open positions

3. In case of options extreme loss margin shall be calculated on the notional value of the open short option position. Notional Value for this purpose shall be calculated on the basis of the latest available FBIL Rate for FCY-INR pairs. The extreme loss margins for cross currency derivatives shall be collected in INR. For this purpose, FBIL reference rate of previous day for USD-INR and the corresponding FBIL for JPY-INR, as applicable, shall be used till 02:00 p.m. The latest applicable FBIL reference rate for USD-INR and the corresponding FBIL for JPY-INR, as applicable, shall be used post 02:00 p.m.

Extreme Loss margin requirement shall be computed as under:

1. For client positions - shall be netted at the level of individual client and grossed across all clients, at the trading/ clearing member level, without any set-offs between clients.
2. For proprietary positions - shall be netted at trading/ clearing member level without any set-offs between client and proprietary positions.

The margins so computed shall be aggregated first at the trading member level and then aggregated at the clearing member level.

7.9.1.3 Additional Margin

Exchanges / Clearing Corporations have the right to impose additional risk containment measures over and above the risk containment system mandated by SEBI. This shall be in addition to the initial margin and extreme loss margin, which are or may have been imposed from time to time.

Clearing members shall provide for margin in any one or more of the eligible collateral modes as detailed in section 7.9.2. The margins shall be collected /adjusted from the liquid assets of the member on a real time basis.

7.9.2 Liquid Assets & Liquid Networth

Clearing member may deposit liquid assets in the form of cash, bank guarantees, fixed deposit receipts, approved securities and any other form of collateral as may be prescribed by the Clearing Corporation from time to time.

These liquid assets are segregated as cash component and non-cash component. Cash component shall mean cash, bank guarantees, fixed deposit receipts, units of money market mutual fund, Gilt funds, Government of India Securities, Sovereign Gold Bonds and any other form of collateral as may be prescribed by the Clearing Corporation from time to time. Non-cash component shall mean all other forms of collateral deposits like deposit of approved list of demat securities, units of the other mutual funds and any other form of collateral as may be prescribed by the Clearing Corporation from time to time.

The liquid assets comprise of the cash component and the non-cash component wherein the cash component shall be at least 50% of liquid assets. This implies that non cash

component in excess of the total cash component would not be regarded as part of liquid assets.

Item	Haircut	Limits
Cash Equivalents		
Cash	0	No limit
Bank fixed deposits	0	No limit
Bank guarantees	0	Limit on Exchange's/Clearing Corporation exposure to a single bank
Securities of the Central Government	Refer Note	No limit
Units of liquid mutual funds or government securities mutual funds	10 percent	CC's may specify limit
Other liquid assets (Non-Cash Component)		
Liquid (Group I) Equity Shares	Same as the VaR margin for the respective shares	Limit on CC's exposure to a single issuer
Mutual fund units other than those listed under cash equivalents	VaR margin, if available, or else, using the NAV of the unit	CC's may specify limit

Note:

A) The exchanges shall lay down exposure limits either in rupee terms or as percentage of the Trade Guarantee Fund (TGF) / Settlement Guarantee Fund (SGF) that can be exposed to a single bank directly or indirectly. The total exposure would include guarantees provided by the bank for itself or for others as well as debt or equity securities of the bank which have been deposited by members towards total liquid assets.

B) At least 50% of the total liquid assets shall be in the form of cash and cash equivalents

C) Clearing Corporation shall not accept Fixed Deposit Receipts (FDRs) from trading/clearing members as collateral, which are issued by the trading/ clearing member themselves or banks who are associate of trading/ clearing member. Explanation: For this purpose, 'associate' shall have the same meaning as defined under Regulation 2 (b) of SECC Regulations 2012.

D) Only FPIs are permitted to offer foreign sovereign securities with AAA ratings.

E) Haircut on securities of the Central Government

Type and Tenor of Securities	Haircut
Treasury Bills and liquid Government of India Dated Securities having residual maturity of less than 3 years	2%
Liquid Government of India Dated Securities having residual maturity of more than 3 years	5%
For all other semi-liquid and illiquid government of India Dated Securities	10%

Liquid Networth shall be computed as liquid assets less initial margin and extreme loss margin payable at any point in time. The clearing member shall meet with the liquid networth requirements prescribed by the Clearing Corporation at all points of time. Currently in Currency Derivatives, every clearing member of the Clearing Corporation is required to maintain a minimum liquid networth of Rs.50 lakhs.

7.9.3 Risk Reduction Mode

Stock Exchanges / Clearing Corporation shall ensure that the stock brokers are mandatorily put in risk-reduction mode when specific percent (currently 90%) of the stock broker's/clearing member collateral available for adjustment against margins gets utilized on account of trades that fall under a margin system. The risk reduction mode is applicable at trading member as well as clearing member level. Such risk reduction mode shall include the following:

- All unexecuted orders shall be cancelled once stock broker breaches 90 percent collateral utilization level.
- Only orders with Immediate or Cancel attribute shall be permitted in this mode.
- All new orders shall be checked for sufficiency of margins. Fresh order placed by member to reduce the open position will be accepted. Fresh order that increase the position shall be checked for the sufficiency of margin and order that do not satisfy the sufficiency of margins will be rejected.
- The stock-broker shall be moved back to the normal risk management mode as and when the collateral of the stock-broker is lower than percent utilization level specified by the clearing corporation from time to time (currently 85%).

Additionally, when the member is in risk reduction mode:

- Members shall not be allowed to place orders with custodial participant code.
- Client and Custodial Participant code modification shall not be permitted.

For monitoring of the risk reduction mode (90% utilization or such applicable limit), the following procedure shall be adopted:[27]

- TM level risk reduction mode: Client margin in excess of 90% of the client collateral shall be identified for each client under a TM. The total of such client

[27] https://www.sebi.gov.in/legal/circulars/jul-2021/segregation-and-monitoring-of-collateral-at-client-level_51265.html

margin in excess of 90% of the client collateral, plus the proprietary TM margin shall be assessed against the TM proprietary collateral for monitoring of TM level risk reduction mode.

CM level risk reduction mode: Sum of client margin in excess of 90% of the client collateral for each client under a TM plus the proprietary TM margin, in excess of 90% of TM proprietary collateral shall be calculated as TM margin in excess of 90% of TM collateral. Sum of such margin for each TM clearing through a CM, plus sum of client margin in excess of 90% of the client collateral for each client clearing through such CM, plus the proprietary CM margin shall be assessed against the proprietary CM collateral for monitoring of CM level risk reduction mode.

7.10 Margin Collection by Clearing Corporation

- The initial margin and extreme loss margins shall be payable upfront by the clearing members. Clearing/Trading members are required to collect initial margins and extreme loss margins from their client/constituents on an upfront basis.
- The clearing member total margin requirement (aggregated across all clients / clients of TM/Proprietary of TM clearing through clearing member) shall be monitored against the total available collateral of clearing member (Cash and Cash equivalent and clearing member own securities) on a real time basis. In addition to monitoring clearing member level exposure, Clearing Corporation shall also monitor the trading member margin against the limit set by the Clearing Member of such trading member[28].
- Clearing members shall provide for margin in any one or more of the eligible collateral modes as detailed in section “Liquid Asset”.
- Clearing member can deposit the liquid asset in combination of various liquid assets in a manner and within a limit as specified by clearing corporation from time to time.
- Clearing members shall be permitted to provide “own” securities or trading member proprietary securities or client securities towards the margin deposit requirements. Clearing members can re-pledge client/trading member (TM) proprietary securities only through Margin Pledge facility provided by NSDL and CDSL
- CC’s also provide facility to enable clearing members to transfer collaterals from one segment to other segment on an intraday basis.
- CC’s also provide facility to release of collateral intra-day as well as at EOD.

7.10.1 Margin Payment

The clearing member is required to pay upfront margin to the clearing corporation as specified by clearing corporation / SEBI from time to time. Clearing members shall provide for margin in any one or more of the eligible collaterals as specified by clearing

[28] SEBI vide circular SEBI/HO/MRD2_DCAP/CIR/2021/0598 dated July 20, 2021, has issued revised guideline for “Segregation and Monitoring of Collateral at Client Level”. The brief details of the same are given in section 7.10.4

corporation from time to time. The margins shall be collected /adjusted from the liquid assets of a clearing member on a real time basis. Clearing members who are clearing and settling for other trading members can specify the maximum collateral limit towards margins, for each trading member clearing and settling through them. Such limits can be set up by the clearing member, through the facility provided by the clearing corporation. Such collateral limits once set are applicable to the trading members for that day, unless otherwise modified by clearing member. The Collateral limit set up by clearing members for trading members shall be assessed against total margin i.e. initial margin plus exposure margin/extreme loss margin for each trading member. Non-fulfilment of either whole or part of the margin obligations by clearing member will be treated as a violation of the rules, bye-laws and regulations of the clearing agency and will attract penalty. In addition, the clearing agency may at its discretion and without any further notice to the clearing member, initiate other disciplinary action, inter-alia including, withdrawal of trading facilities and/or clearing facility, close out of outstanding positions, imposing penalties, collecting appropriate deposits, invoking bank guarantees/ fixed deposit receipts, etc.

7.10.2 Margins from Client

Trading Members/Clearing Members should have a prudent risk management system to protect themselves against the default made by their clients. Margins constitute an important element of risk management systems and are required to be well documented and made accessible to the clients and the Stock Exchanges.

In case of Currency Derivatives segment, it is mandatory for trading members to collect initial margin and extreme loss margins from their client on an upfront basis. It must be ensured that all upfront margins are collected in advance of trade. Margin on consolidated crystallized obligation shall be collected from clients by T+1 day. TMs/CMs shall report to the Stock Exchange on T+5 day the actual short-collection/ non-collection of all margins from clients.

The TM/CM can collect the margin from its client in a various form as specified by SEBI/Exchanges/Clearing Corporation from time to time after taking into account their risk management policy and liquidity aspects. SEBI also provided “Framework to Enable Verification of Upfront Collection of Margins from Clients in Cash and Derivatives segments.[29] Stock Exchange/Clearing Corporation shall levy penalty to TM/CM for short collection/non-collection of margin. All instances of non-reporting shall amount to 100% short collection and the penalty as applicable shall be charged on these instances in respect of short collection. If during inspection it is found that a member has reported falsely the margin collected from clients, the member shall be penalized 100% of the falsely reported amount along with suspension of trading for 1 day in that segment

[29] SEBI/HO/MRD2/DCAP/CIR/P/2020/127 dated July 20, 2020

7.10.3 Providing margin related information to clients

Stock Brokers should send margin related information across all segments to their clients, which shall, inter-alia, include:

- Client code and name, Trade day (T)
- Margin deposit available for the client on day T (with break-up in terms of cash, FDRs, BGs and pledged/re-pledged securities)
- Margin adjustments (including MTM losses) for day T after adjusting MTM profit, if any.
- Margin status (balance with the member / due from the client) at the end of T day.

Such margin related information (Daily margin statement) should be issued by Stock Brokers to clients on T-Day itself or by such timelines as may be specified from time to time.

Brokers should maintain proper records of client collateral and to prevent misuse of client collateral:

- Brokers should have adequate systems and procedures in place to ensure that client collateral is not used for any purposes other than meeting the respective client's margin requirements/pay-ins. Brokers should also maintain records to ensure proper audit trail of use of client collateral.
- Additionally, every Stock Broker shall maintain proper records of collateral received from clients as under:
    - Receipt of collateral from client and acknowledgement issued to client on receipt of collateral
    - Client authorization for deposit of collateral with the exchange/ clearing corporation/ clearing house towards margin
    - Record of deposit of collateral with exchange/ clearing corporation/ clearing house
    - Record of return of collateral to client
    - Credit of corporate action benefits to clients
- The records should be periodically reconciled with the actual collateral deposited with the broker.

In case client collateral is found to be mis-utilized, the broker would attract appropriate deterrent penalty for violation of norms provided under Securities Contract Regulation Act, SEBI Act, SEBI Regulations and circulars, Exchange Byelaws, Rules, Regulations and circulars.

7.10.4 Mechanism for Client Collateral

In order to strengthen the mechanism of protection of client collateral from misappropriation/ misuse by TM/ CM, default of TM/CM and/or other clients and upfront collection of margin from clients SEBI has issued various measures like:

1. Margin obligations to be given by way of Pledge/ Re-pledge in the Depository System[30]. Salient features are given below:
   - Collateral from clients in the form of securities is allowed only by way of 'margin pledge', created in the Depository system
   - Procedure provided by depositories for the manner of creating pledge of the dematerialized securities should be followed. Any other procedure for creating pledge is prohibited.
   - It is clarified that an off-market transfer of securities leads to change in ownership and shall not be treated as pledge. Transfer of securities to the demat account of the TM / CM for margin purposes (i.e., title transfer collateral arrangements) is prohibited.
   - Depositories provides a separate pledge type viz. 'margin pledge', for pledging client's securities as margin to the TM / CM. The TM / CM shall open a separate demat account for accepting such margin pledge, which shall be tagged as 'Client Securities Margin Pledge Account'.
   - For the purpose of providing collateral in form of securities as margin, a client shall pledge securities with TM, and TM shall re-pledge the same with CM, and CM in turn shall re-pledge the same to Clearing Corporation (CC). The complete trail of such re-pledge shall be reflected in the de-mat account of the pledgor.
   - In client account, margin pledge or re-pledge shall be reflected against each security, if it is pledged / re-pledged and in whose favour i.e. TM / CM / CC.
   - The TM shall re-pledge securities to the CM's 'Client Securities Margin Pledge Account' only from the TM's 'Client Securities Margin Pledge Account'. The CM shall create a re-pledge of securities on the approved list to CC only out of 'Client Securities Margin Pledge Account'.
   - In this context, re-pledge would mean endorsement of pledge by TM / CM in favour of CM/CC, as per procedure laid down by the Depositories
   - The TM and CM shall ensure that the client's securities re-pledged to the CC shall be available to give exposure limit to that client only.
   - Securities that are not on the approved list of a CC may be pledged in favour of the TM / CM. Each TM / CM may have their own list of acceptable securities that may be accepted as collateral from client.
   - CM shall be allowed to re-pledge acceptable/approved client securities with the CC by furnishing the UCC wise client details. CC shall not allow any exposure to the CM on re-pledged securities of the client / TM.

[30] SEBI circular SEBI/HO/MIRSD/DOP/CIR/P/2020/28 dated February 25, 2020

- In case of a trade by a client / TM whose securities are re-pledged with CC, the CC shall first block the available collateral provided by CM. However, at periodical interval (latest by end of day), CC shall release the blocked securities collateral of CM to the extent of re-pledged securities collateral of that client / TM available with the CC.

2. Framework to enable verification of upfront collection of margins from clients in Cash and Derivatives segments[31]:
   The guideline reiterated that the applicable upfront margins are required to be collected from the clients in advance of the trade. With an objective to enable uniform verification of upfront collection of margins from clients by TM/ CM and levy of penalty across segments, SEBI has specified framework to the Stock Exchanges/ Clearing Corporations for the purpose of 'Mechanism for regular monitoring of and penalty for short-collection/ non-collection of margins from clients' in Cash and Derivatives segments.

3. Segregation and Monitoring of Collateral at Client Level[32]. Salient features are given below:
   - With a view to providing visibility of client-wise collateral (for each client) at all levels, viz., TM, CM and Clearing Corporation (CC), a reporting mechanism, covering both cash and non-cash collateral, shall be specified by the CCs.
   - TM shall report disaggregated information on collaterals up to the level of its clients to the CM.
   - CM shall report disaggregated information on collaterals up to the level of clients of TM and proprietary collaterals of the TMs to the Stock Exchanges (SEs) and CCs in respect of each segment.
   - A web portal facility shall be provided by the CCs/ SEs to allow clients to view aforesaid disaggregated collateral reporting by TM/CM.
   - The CCs shall provide a facility to CMs for upfront segment-wise allocation of collateral to a TM/ client or CM's own account. The CCs shall use such collateral allocation information to ensure that the collateral allocated to a client is used towards the margin obligation of that client only.
   - The members shall ensure that allocated collateral plus value of securities collateral re-pledged to the CC for a client is at all times greater than or equal to the minimum margin collection requirement for the respective client in the respective segment.
   - The terms "Client Collateral", "TM Collateral", "CP Collateral" and "CM Collateral" shall mean the total of the allocated collateral value plus the value of demat securities collateral provided through margin pledge/re-pledge by any individual client, TM, CP and CM respectively to the level of CC. The TM/CM collateral shall

[31] SEBI circular SEBI/HO/MRD2/DCAP/CIR/P/2020/127 dated July 20, 2020

[32] SEBI circular SEBI/HO/MRD2_DCAP/CIR/2021/0598 dated July 20, 2021,
SEBI circular SEBI/HO/MRD2/DCAP/P/CIR/2022/0022 dated February 24, 2022

mean the proprietary collateral of the TM/CM only and shall not include the collateral of any of their clients.

- On receipt of a trade from a client account by the CC, the margin shall first be blocked from the value of the client collateral. If the client collateral is not sufficient, the residual margin shall be blocked from the TM proprietary collateral of the TM of such client. If the TM proprietary collateral is also not sufficient, then the residual margin shall be blocked from the CM proprietary collateral of the CM of such TM.
- In case of a trade from the proprietary account of a TM, the margin shall first be blocked from the TM proprietary collateral, and in case such collateral is not sufficient, then the residual margin shall be blocked from the CM proprietary collateral.
- Margins based on trades from proprietary account of the CM shall be blocked from the proprietary collateral of the CM only.
- In case of CP trades executed by TMs, the margin shall be blocked in the following order- (i) CP collateral through the executing TM, if any, (ii) residual margin from the proprietary collateral of the executing TM, and (iii) residual margin from the proprietary collateral of the CM of the executing TM. Upon confirmation of such trades by CM of the CP, the margin so blocked prior to the confirmation shall be released, and shall be blocked in the following order- (i) CP collateral through the confirming CM, and (ii) residual margin from the proprietary collateral of the confirming CM. In case of CP trades, the requirement to ensure that sufficient collateral is allocated to clients to cover their margin requirements shall be on the confirming CM. However, if the trade is confirmed under the auto approval facility provided by the CC, then margin shall be directly blocked in the following order- (i) CP collateral through the confirming CM, and (ii) residual margin from the proprietary collateral of the confirming CM.
- CMs shall be permitted to change the allocation of collateral deposited with the CC, subject to the value allocated to any client not exceeding the value of actual collateral received from that client (excluding the securities collateral re-pledged to CC through margin pledge mechanism).

For additional details participants are requested to refer the relevant circulars.

7.11 Core Settlement Guarantee Fund

Securities Contracts (Regulation) (Stock Exchanges and Clearing Corporations) Regulations, 2018, inter-alia, state the following:

1) Every recognized clearing corporation shall establish and maintain a Fund by whatever name called, for each segment, to guarantee the settlement of trades executed in respective segment of a recognized stock exchange.

(2) In the event of a clearing member failing to honour his settlement obligations, the Fund shall be utilized to complete the settlement.

(3) The corpus of the Fund shall be adequate to meet the settlement obligations arising on account of failure of clearing member(s).
(4) The sufficiency of the corpus of the Fund shall be tested by way of periodic stress tests, in the manner specified by SEBII.
(5) The utilization of the Fund shall be in accordance with the norms specified by SEBI.

Further, SEBI has directed clearing corporation to have a fund called Core SGF (Settlement Guarantee Fund) for each segment of each Recognized Stock Exchange (SE) to guarantee the settlement of trades executed in respective segment of the Stock Exchange[33]. Hence there will be separate Core Settlement Guarantee Fund for Currency Derivatives Segment. In the event of a clearing member (member) failing to honour settlement commitments, the Core SGF shall be used to fulfill the obligations of that member and complete the settlement without affecting the normal settlement process.

The corpus of the fund should be adequate to meet out all the contingencies arising on account of failure of any member(s). The risk or liability to the fund depends on various factors such as trade volume, delivery percentage, maximum settlement liability of the members, the history of defaults, capital adequacy of the members, the degree of safety measures employed by the CC/SE, etc. While deciding on the fair quantum of the corpus of the SGF, the CC should consider the following factors:

- Risk management system in force.
- Current and projected volume/turnover to be cleared and settled by the CC on a guaranteed basis.
- Track record of defaults of members (number of defaults, amount in default).

A Minimum Required Corpus (MRC) of the core SGF should be created subject to the following conditions:

i. The MRC shall be fixed for a month.
ii. By 15th of every month, CC shall review and determine the MRC for next month based on the results of daily stress tests of the preceding month.
iii. CC shall also review and determine by 15th of every month the adequacy of contributions made by various contributors and any further contributions to the Core SGF required to be made by various contributors for the next month.
iv. For every day of the preceding month, uncovered loss numbers shall be estimated by the various stress tests for credit risk conducted by the CC for the segment and the highest of such numbers shall be taken as worst-case loss number for the day.
v. Average of all the daily worst case loss numbers determined in (iv) above shall be calculated.
vi. The MRC for next month shall be higher of the average arrived at as (v) above and the segment MRC as per previous review.

Contributions of various contributors to Core SGF of any segment shall be as follows:

[33] https://www.sebi.gov.in/sebi_data/attachdocs/1409136206919.pdf

a) *Clearing Corporation Contribution:* CC contribution to Core SGF shall be at least 50 percent of the MRC which should be from its own funds. CC contribution to core SGF shall be considered as part of its net worth.
b) *Stock Exchange Contribution:* Stock Exchange contribution to Core SGF shall be at least 25 percent of the MRC (can be against transfer of profits by Exchange as per Regulation 33 of SECC Regulations).
c) *Clearing Member Primary Contribution:* The total contribution from members to core SGF for each segment will not be more than 25% of MRC of the respective segment. No exposure shall be available to CMs on their contribution to core SGF. The required contributions of individual CMs shall be assessed pro-rata based on the risk they bring to the system. CC shall have the flexibility to collect CM primary contribution either upfront or staggered over a period of time. In case of staggered contribution, the remaining balance shall be met by CC to ensure adequacy of total Core SGF corpus at all times. Such CC contribution shall be available to CC for withdrawal as and when further contributions from CMs are received. As per SEBI circular no SEBI/HO/MRD/DRM/NP/CIR/P/2016/54 dated May 04, 2016, the clearing member contribution to core SGF shall be met to the extent available from the amount received from Exchange.
d) Any penalties levied by CC shall be credited to Core SGF corpus.
e) Interest on cash contribution to Core SGF shall also accrue to the Core SGF and pro-rata attributed to the contributors in proportion to their cash contribution.

CC may utilize the Core SGF in the event of a failure of member(s) to honour settlement commitment.

Default Waterfall

In the event of a default, the utilization of the Settlement Guarantee Fund shall generally follow the following order:

a) Monies of defaulting member (including defaulting member's primary contribution to Core SGF(s) and excess monies of defaulter in other segments).
b) Insurance, if any.
c) CC resources (equal to 5% of the segment MRC).
d) Core SGF of the segment in the following order:
    I. Penalties
    II. CC contribution to the extent of at least 25% of the segment MRC
    III. Remaining Core SGF: CC contribution, Stock Exchange contribution and non-defaulting members' primary contribution to Core SGF on pro-rata basis.
e) Proportion of remaining CC resources (excluding CC contribution to core SGFs of other segments and Rs. 100 Crore) equal to ratio of segment MRC to sum of MRCs of all segments. Rs. 100 Crore to be excluded only when remaining CC resources (excluding CC contribution to core SGFs of other segments) are more than Rs. 100 Crore.
f) CC/SE contribution to Core SGFs of other segments (after meeting obligations of those segments) and remaining CC resources to that extent as approved by SEBI.

g) Capped additional contribution by non-defaulting members of the segment[34].
h) Any remaining loss to be covered by way of pro-rata haircut to pay-outs.

[34] For further details, refer SEBI Circular Ref. No. SEBI/HO/MRD2/DCAP/CIR/P/2020/01 Dated January 03, 2020. The maximum capped additional contribution by non-defaulting members shall be lower of 2 times of their primary contribution to Core SGF or 10% of the Core SGF of the segment on the date of default in case of equity/ debt segments. The maximum capped additional contribution by non-defaulting members shall be lower of 2 times of their primary contribution to Core SGF or 20% of the Core SGF of the segment on the date of default in case of derivatives segment.

Chapter 8: Regulatory Framework for Exchange Traded Currency Derivatives

LEARNING OBJECTIVES:

After studying this chapter, you should know about following:

- Role of RBI-SEBI Standing Technical Committee
- SEBI and RBI Regulations on ETCD
- Regulatory Guideline on Participation of Various Entities
- Eligibility Criteria for Membership of ETCD

Introduction

Exchange traded currency derivatives are jointly regulated by Reserve Bank of India (RBI) and Securities and Exchange Board of India (SEBI). Within the statutory regulations of RBI and SEBI, the Exchanges and Clearing Corporations will frame the operational rules and procedures under their bye-laws for Exchange traded currency derivatives. The following shows the summary of statutory regulations and operational rules.

Entity	Authority/Statute	Scope
RBI	The Foreign Exchange Management Act, 1999 (FEMA)	Power conferred to Reserve Bank to make regulations to carry out the provisions of this Act and the rules made thereunder. Power conferred to issue direction to Authorized Person[35]
	Reserve Bank of India Act 1934	Dealing in foreign Exchange and Derivatives
SEBI	Securities Contract (Regulation) Act 1956; and SEBI Act 1992	All exchange-traded contracts
Exchanges/Clearing Corporation	Bye-laws of the Exchange and Clearing Corporations	Operational rules and procedures for trading, clearing, settlement & risk management

RBI's role in regulation of Foreign Exchange Market is primary and fundamental and covers all activities while that of SEBI is limited to the Exchange-traded contracts on them.

[35] Under FEMA 1999, "authorised person" means an authorised dealer, money changer, off-shore banking unit or any other person for the time being authorised under sub-section (1) of section 10 to deal in foreign exchange or foreign securities;

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

It provides for direct and indirect control of virtually all aspects of securities trading and the running of Stock Exchanges and aims to preventing undesirable transactions in securities. It gives Central Government the regulatory jurisdiction over-

(a) Stock Exchanges through a process of recognition and continued supervision

(b) Contracts in securities, and

(c) Listing of securities on Stock Exchanges

The term "**Securities**" as defined in the SCRA, 1956 includes the following:

i. Shares, scrips, stocks, bonds, debentures, debenture stock or other marketable securities of a like nature in or of any incorporated company or a pooled investment vehicle other body corporate;
ii. Derivatives;
iii. Units or any other instrument issued by any Collective Investment Scheme;
iv. Security receipt as defined in the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002;
v. units or any other instrument issued by any pooled investment vehicle;
vi. Units or any other such instrument issued to the investors under any mutual fund scheme[36];
vii. Any certificate or instrument, issued to an investor by any issuer being a special purpose distinct entity which possesses any debt or receivable, including mortgage debt, assigned to such entity, and acknowledging beneficial interest of such investor in such debt or receivable, including mortgage debt, as the case may be;
viii. Government Securities
ix. Such other instruments as may be declared by the Central Government to be securities, and
ix. Rights or interest in securities.
x. "Electronic Gold Receipt" means an electronic receipt issued on the basis of deposit of underlying physical gold in accordance with the regulations made by the Securities and Exchange Board of India under section 31 of the said Act.

The term Derivative has been defined in Securities Contracts (Regulations) Act, 1956 as:
Derivative includes:
a. 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;
b. a contract which derives its value from the prices, or index of prices, of underlying securities;
c. commodity derivatives; and

[36] "Securities" shall not include any unit linked insurance policy or scrips or any such instrument or unit, by whatever name called, which provides a combined benefit risk on the life of the persons and investment by such persons and issued by an insurer referred to in clause (9) of section 2 of the Insurance Act, 1938 (4 of 1938);

d. such other instruments as may be declared by the Central Government to be derivatives;

Section 18A provides that notwithstanding anything contained in any other law for the time being in force, contracts in derivative shall be legal and valid if such contracts are:

- Traded on a recognized stock exchange
- Settled on the clearing house of the recognized stock exchange, in accordance with the rules and bye–laws of such stock exchanges.
- Between such parties and on such term as the Central Government may, by notification in the Official Gazette specify.

8.2 RBI-SEBI Standing Technical Committee on Exchange Traded Currency and Interest Rate Derivatives

The Committee on Fuller Capital Account Convertibility had recommended that currency futures may be introduced subject to risks being contained through proper trading mechanism, structure of contracts and regulatory environment. Accordingly, Reserve Bank of India in the Annual Policy Statement for the Year 2007-08 proposed to set up a Working Group on Currency Futures to study the international experience and suggest a suitable framework to operationalise the proposal, in line with the current legal and regulatory framework. The group has had extensive consultations with a cross section of market participants including bankers' associations, banks, brokers, and exchanges, both Indian and International.

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. The same is available on RBI website[37]. 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. To begin with, the Committee would evolve norms and oversee the implementation of Exchange traded currency futures.
The Terms of Reference to the Committee were as under:

- To coordinate the regulatory roles of RBI and SEBI in regard to trading of Currency and Interest Rate Futures on the Exchanges.
- To suggest the eligibility norms for existing and new Exchanges for Currency and Interest Rate Futures trading.

[37] https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/84213.pdf

- To suggest eligibility criteria for the members of such exchanges.
- To review product design, margin requirements and other risk mitigation measures on an on-going basis
- To suggest surveillance mechanism and dissemination of market information.
- To consider microstructure issues, in the overall interest of financial stability.

The committee has submitted its report on Currency Futures on May 29, 2008. The Report of RBI-SEBI Standing Technical Committee on Currency Futures is available on SEBI's website[38].

The Report of RBI-SEBI Standing Technical Committee on Currency Futures has provided following recommendation/suggestion:

- Currency Futures product design to start with an underlying as USDINR
- Risk management measures for currency futures including margining, mark to market etc.
- Surveillance measures and position limits
- Eligibility criteria for setting up of currency futures segment in a recognized stock exchange and clearing corporation
- Committee has suggested separate segment for currency futures with separate trading platform, clearing corporation and membership from other segments. The Exchange shall have balance sheet net worth of at least Rs. 100 crores[39].
- Eligibility criteria for membership of currency futures segment. The committee recommended; the trading member will be subject to a balance sheet net worth requirement of Rs. 1 crore while the clearing member would be subject to a balance sheet net worth requirement of Rs 10 crores.
- Regulatory and Legal aspects

This report became the important point for the introduction of Exchange Traded Currency Derivatives in India.

8.3 Foreign Exchange Management Act, 1999

- The Government of India formulated Foreign Exchange Management Act (FEMA) to encourage external payments and across the border trades in India. It was formulated in the year 1999 while it replaced FERA (Foreign Exchange Regulation Act).
- The main objective of FEMA was to help facilitate external trade and payments in India. It was also meant to help orderly development and maintenance of the foreign exchange market in India.

[38] https://www.sebi.gov.in/sebi_data/commondocs/rbirep_p.pdf

[39] SEBI (Stock Exchange and Clearing Corporation) Regulation, 2018 specified that every recognised Stock Exchange shall have minimum networth of one hundred crore rupees at all times.

- It defines the procedures, formalities, holding of foreign exchange, realisation and repatriation of foreign exchange, dealings of all foreign exchange transactions in India. Foreign Exchange transactions are mainly classified under two categories — Current Account Transactions and Capital Account Transactions.
- Amongst other, it defines Authorised Person, Foreign Exchange, Foreign Currency, Person, Person residents in India, Person residents outside India
- FEMA is applicable to all parts of India and was primarily formulated to utilize foreign exchange resources in efficient manner.
- It shall also apply to all branches, offices and agencies outside India owned or controlled by a person resident in India and also to any contravention thereunder committed outside India by any person to whom this Act applies.
- FEMA is applicable to Foreign Exchange, Foreign Security, Export and Import of commodity and services, Securities as defined under Public Debt Act 1994, Banking, financial and insurance services, Citizen of India residing in the country or outside (NRI)
- FEMA is a regulatory mechanism that provided power to RBI to make regulations to carry out the provisions of this Act and the rules made thereunder by way of notification.
- FEMA has also provided power to RBI to provide authorisation to Authorised Person, issue direction to Authorised person and to inspect the books of Authorised person.

8.4 SEBI Regulation and Guideline

SEBI Act, 1992

SEBI Act, 1992 provides for establishment of Securities and Exchange Board of India (SEBI) with statutory powers for

(a) Protecting the interests of investors in securities,

(b) Promoting the development of the securities market, and

(c) Regulating the securities market.

Its regulatory jurisdiction extends over corporates (who list or propose to list their securities) in the issuance of capital and transfer of securities, in addition to all intermediaries and persons associated with securities (more specifically the capital market) market. It can conduct enquiries, audits and inspection of all concerned and adjudicate offences under the Act. It has powers to register and regulate all market intermediaries and to penalize them in case of violations of the provisions of the Act, Rules and Regulations made thereunder. SEBI has full autonomy and authority to regulate and develop an orderly securities market.

In particular, it has powers for:

- Regulating the business in stock exchanges and any other securities markets.
- Registering and regulating the working of stock brokers, authorized person etc.
- Promoting and regulating self-regulatory organizations.

- Prohibiting fraudulent and unfair trade practices.
- Calling for information from, undertaking inspection, conducting inquiries and audits of the stock exchanges, mutual funds and other persons associated with the securities market and intermediaries and self–regulatory organizations in the securities market.
- Performing such functions and exercising according to Securities Contracts (Regulation) Act, 1956, as may be delegated to it by the Central Government.

Though RBI has provided broad level guideline for participation of currency derivatives on Exchanges, SEBI plays major role in regulating, development of Exchange traded currency derivatives. SEBI guideline related to trading, clearing and settlement, risk management, surveillance, investor grievance and protection, fraudulent and unfair trade practices, stock broker regulations, KRA regulations, anti-money laundering etc. will be applicable for ETCD.

Brief points on SEBI guideline/regulation related to Trading:

- A recognized stock exchange having nationwide terminals, or a new exchange recognized by SEBI may set up currency derivatives segment after obtaining SEBI's approval. The Currency Derivative contracts shall be traded as separate segment of a recognized Stock Exchange.
- Exchange shall submit the application along with details pertaining to currency derivatives product proposed to be introduce along with proposed Bye-laws of the Exchanges.
- After obtaining SEBI's approval, the Recognized Stock Exchange and its Clearing Corporation / Clearing House shall make an application to RBI to obtain permission under FEMA for trading, clearing and settlement of Currency Derivatives.
- Membership of the Currency Derivatives Segment is separate from the membership of the other segments of the Exchange. A person desirous of becoming a Clearing Member and / or a Trading Member and fulfilling the eligibility conditions may apply for membership in accordance with SEBI (Stock Brokers) Regulations, 1992.
- SEBI has also allowed Banks to take membership of ETCD subject to eligibility criteria specified by RBI and SEBI from time to time.
- A trading member shall have approved users and sales personnel who have Certification as applicable from time to time.
- Provide guideline on contract specification which includes trading hours, underlying instrument, contract size, contract cycle, price band, expiry dated etc.
- Provide guideline on position limits for trading members, institutional clients and non-institutional clients etc.
- Provide guideline on surveillance system to effectively monitor trading in such contracts.
- Provide guideline to ensure market integrity, protection of investors and smooth and orderly trading etc.

Brief points on SEBI guideline/regulation related to Clearing Corporation:

- A Clearing Corporation / Clearing House should obtain SEBI's approval for undertaking clearing and settlement related to trades in Currency Derivatives.
- After obtaining SEBI's approval, the Recognized Stock Exchange and its Clearing Corporation / Clearing House shall make an application to RBI to obtain permission under FEMA for trading, clearing and settlement of Currency Derivatives.
- The Clearing Corporation must perform full novation, i.e. the clearing corporation should interpose itself between both legs of every trade, becoming the legal counterparty to both or alternatively should provide an unconditional guarantee for settlement of all trades.
- SEBI has allowed interoperability of clearing corporations for currency derivatives segment
- Provided guideline on clearing and settlement which includes mode of settlement, daily and final settlement price, settlement cycle, etc.
- Provided guideline on risk management which includes margining mechanism, liquid net worth, Liquid Assets, MTM settlement etc.
- There will be separate Core Settlement Guarantee Fund (CSGF) for Currency Derivatives Segment.

8.5 RBI Regulation and Guideline

Foreign Exchange Management Act, 1999 (42 of 1999), has conferred the power to RBI, to make regulations, to promote orderly development and maintenance of foreign exchange market in India. FEMA has also provided power to RBI to provide authorisation to Authorised Person, issue direction to Authorised person and to inspect the books of Authorised person

Given below brief of some of the important RBI guidelines/direction on Foreign Exchange trading mainly focusing on Exchange Traded Currency Derivatives:

RBI Direction / Guideline	Details
Currency Futures (Reserve Bank) Directions, 2008 as amended from time to time	Direction is come into effect from August 06, 2008. Currency futures direction has given details about • Definition of currency futures • Eligible Currency pairs {included FCY-INR pairs (pairs involving Indian Rupee) and Cross currency pairs (FCY-FCY pairs not involving Indian Rupee)} • Eligible participants • Contract features of currency futures • Membership guideline and membership criteria for banks • Position limits

	• Risk management measures • Authorisation to Stock Exchanges and Clearing Corporations for dealing in currency futures • Surveillance and disclosure
Exchange Traded Currency Options (Reserve Bank) Directions, 2010 as amended from time to time	Direction is come into effect from July 30, 2010. Exchange traded currency option direction has given details about • Eligible Currency pairs {included FCY-INR pairs (pairs involving Indian Rupee) and Cross currency pairs (FCY-FCY pairs not involving Indian Rupee)} • Eligible participants • Contract features of Exchange traded currency option • Membership guideline and membership criteria for banks • Position limits • Risk management measures • Authorisation to Stock Exchanges and Clearing Corporations for dealing in currency option • Surveillance and disclosure
Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000	In exercise of the powers conferred by clause (h) of sub-section (2) of Section 47 of the Foreign Exchange Management Act, 1999 (42 of 1999), the Reserve Bank makes these regulations, to promote orderly development and maintenance of foreign exchange market in India. The Regulations provided details about: • Definition of Authorised Dealer, Foreign exchange derivative contract, Exchange traded currency derivatives, Hedging, Currency risk, contracted exposure and anticipated exposure etc. • Provisions for a person, whether resident in India or resident outside India, to enter into a foreign exchange derivative contract or exchange traded currency derivative contract • Remittance related to a Foreign Exchange Derivative contract .
Master Direction - Risk Management and Inter-Bank Dealings	These directions lay down the modalities as to how the foreign exchange business has to be conducted by the Authorised Persons with their customers / constituents with a view to implementing the Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000.

	Instructions issued in respect of Foreign Exchange Derivative Contracts, Overseas Commodity & Freight Hedging, Rupee Accounts of Non-Resident Banks and Inter-Bank Foreign Exchange Dealings etc. have been compiled in this Master Direction. Master circular provided details about: • Definition of Hedging, Users, Contracted and Anticipated Exposure etc. • Directions for Authorised Dealers for offering derivatives contract involving INR to users • Directions to users for participation and monitoring in Exchange traded currency derivatives • Participation of AD Category I Bank in Exchange trade currency futures and option contracts • Operational Guidelines, terms and conditions for AD Category-I banks participation in the ETCD market

8.5.1 Foreign Exchange Dealers' Association of India (FEDAI)

Foreign Exchange Dealers' Association of India (FEDAI) was set up in 1958 as an Association of banks dealing in foreign exchange in India (typically called Authorised Dealers - ADs) as a self-regulatory body and is incorporated under Section 25 of The Companies Act, 1956. Its major activities include framing of rules governing the conduct of inter-bank foreign exchange business among banks vis-à-vis public and liaison with RBI for reforms and development of forex market. Presently some of the functions are as follows:

- Guidelines and Rules for Forex Business.
- Training of Bank Personnel in the areas of Foreign Exchange Business.
- Accreditation of Forex Brokers
- Advising/Assisting member banks in settling issues/matters in their dealings.
- Represent member banks on Government/Reserve Bank of India/Other Bodies.
- Announcement of daily and periodical rates to member banks.

Due to continuing integration of the global financial markets and increased pace of de-regulation, the role of self-regulatory organizations like FEDAI has also transformed. In such an environment, FEDAI plays a catalytic role for smooth functioning of the markets through closer co-ordination with the RBI, other organizations like FIMMDA, the Forex Association of India and various market participants. FEDAI also maximizes the benefits derived from synergies of member banks through innovation in areas like new customized products, benchmarking against international standards on accounting, market practices, risk management systems, etc.

8.6 Regulatory Guideline on Participation of Various Entities in ETCD

India has been experiencing heightened cross-border flows in past few years with globalization and relaxations in the rules governing external transactions. The flows have been strong on both current and capital accounts. There has also been some increase in volatility in exchange rates due to global imbalances and changing dimensions of the capital flows. This have transformed the intensity of market risk, which, in turn, has made the issues relating to hedging of such risk exposures very critical. Both residents and non-residents are exposed to currency risk when residents purchase foreign currency assets and non-residents purchase domestic currency assets. If the exchange rate remains unchanged from the time of the purchase of the asset to its sale, no gains and losses are made out of currency exposures. But if domestic currency depreciates (or appreciates) against the foreign currency, the exposure will result in gain (or loss) for residents purchasing foreign assets and loss (or gain) for non-residents purchasing domestic asset. In this backdrop, unpredicted movements in exchange rates expose investors to currency risks. Hence, it is important to have participation from all categories of investor (resident as well as non-resident) in ETCD.

The rules for participation in domestic foreign exchange market are largely covered under Foreign Exchange Management Act, 1999 and the Foreign Exchange Management (Foreign Exchange Derivative Contracts Regulations, 2000). A person, whether resident in India or resident outside India, may enter into a foreign exchange derivative contract or exchange traded currency derivative contract in accordance with provisions contained in this regulation. Master Direction - Risk Management and Inter-Bank Dealings of RBI, Currency Futures (Reserve Bank) Directions, 2008 and Exchange Traded Currency Options (Reserve Bank) Directions, 2010, SEBI circular of ETCD has also specified eligibility and limits to trade in ETCD. Further, “All regulated entities shall participate in ETCD with the permission of and subject to the terms and conditions, if any, fixed by their respective regulators”.

8.6.1 Authorised Dealer Category I Banks

AD Category I Banks are permitted to become trading and clearing members of the currency derivatives market of recognized stock exchanges, on their own account and on behalf of their clients, subject to fulfilling the following minimum prudential requirements:

i) Minimum net worth of Rs. 500 crores.
ii) Minimum CRAR of 10 per cent.
iii) Net NPA should not exceed 3 per cent.
iv) Net profit for last 3 years.

AD Category - I banks, which do not meet the above minimum prudential requirements and AD Category - I banks, which are Urban Co-operative banks or State Co-operative

banks, can participate in the exchange traded currency derivatives market only as clients, subject to approval therefor from the respective regulatory Departments of the Reserve Bank. The AD Category - I banks shall operate within prudential limits, such as Net Open Position (NOP) and Aggregate Gap (AG) limits. The option position of the banks, on their own account, in the exchange traded currency derivatives shall form part of their NOP and AG limits.

AD Category-I banks may undertake trading in all permitted exchange traded currency derivatives within their Net Open Position Limit (NOPL) subject to limits stipulated by the exchanges (for the purpose of risk management and preserving market integrity) provided that any synthetic USD-INR position created using a combination of exchange traded FCY- INR and cross-currency contracts shall have to be within the position limit prescribed by the exchange for the USD-INR contract.

AD Category-I banks may net / offset their positions in the ETCD market against the positions in the OTC derivatives markets. Keeping in view the volatility in the foreign exchange market, Reserve Bank may however stipulate a separate sub-limit of the NOPL (as a percentage thereof) exclusively for the OTC market as and when required.

8.6.2 Person Resident in India

- A person may enter into an exchange traded currency derivative contract on an Exchange as per provision of Foreign Exchange Management Act, 1999, Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000 and any other regulation, direction, guideline issued by RBI and/or SEBI in this regard.
- Users may take positions (long or short), without having to establish existence of underlying exposure, upto a single limit of USD 100 million equivalent across all currency pairs involving INR, put together, and combined across all exchanges.
- Exchanges authorised by RBI to offer currency derivatives shall provide facility to users, intending to take position beyond USD 100 million (or equivalent) in contracts involving INR in all exchanges put together, to designate an Authorised Dealer/Custodian. For such users, the exchanges/clearing corporation at end of day shall provide information of day-end open positions as well as intra-day highest position of the user to the designated Authorised Dealer.
- The onus of complying with the above directions shall rest with the user. In case of any contravention, the user shall render itself liable to any action under the Foreign Exchange Management Act (FEMA), 1999.
- Market Participants are allowed to take positions in the cross-currency futures and exchange traded cross-currency option contracts (contracts not involving Indian Rupee) without having to establish underlying exposure subject to the position limits as prescribed by the exchanges.

8.6.3 Foreign Portfolio Investor (FPIs)

- A FPI may enter into an exchange traded currency derivative contract on an Exchange as per provision of Foreign Exchange Management Act, 1999, Foreign Exchange Management (Foreign exchange derivative contracts) Regulations, 2000 and any other regulation, direction, guideline issued by RBI and/or SEBI in this regard.
- FPIs may take positions (long or short), without having to establish existence of underlying exposure, upto a single limit of USD 100 million equivalent across all currency pairs involving INR, put together, and combined across all exchanges.
- FPIs shall ensure that their short positions at all stock Exchanges across all contracts involving Indian Rupee do not exceed USD 100 million.
- The exchanges/clearing corporation at end of day shall provide information of day-end open positions as well as intra-day highest position of the FPIs to the designated Custodian.
- The onus of complying with the above directions shall rest with the FPIs. In case of any contravention, the user shall render itself liable to any action under the Foreign Exchange Management Act (FEMA), 1999.
- FPIs are allowed to take positions in the cross-currency futures and exchange traded cross-currency option contracts (contracts not involving Indian Rupee) without having to establish underlying exposure subject to the position limits as prescribed by the exchanges.

8.6.4 Non-Banking Financial Institutions

Applicable NBFCs shall participate in the designated currency futures on exchanges recognized by SEBI as clients, subject to Bank's (Foreign Exchange Department) guidelines in the matter, only for the purpose of hedging their underlying forex exposures.

Non-deposit taking applicable NBFCs with asset size of ₹500 crore and above, are allowed to participate in the designated currency options exchanges recognized by SEBI, as clients, subject to the Bank's (Foreign Exchange Department) guidelines in the matter, only for the purpose of hedging their underlying forex exposures.

8.6.5 Primary Dealers

Standalone Primary Dealers (SPD) having a minimum Net Owned Fund of ₹250 crore or any amount as prescribed for undertaking diversified activity shall be allowed to participate in currency futures. SPDs are permitted to participate in the currency futures market either as clients or direct trading / clearing members of the currency derivatives segment of the Stock Exchanges recognized by SEBI. SPDs shall trade only on their own account, and they are not permitted to take positions on behalf of clients.

The aggregate gross open positions across all contracts in all the stock exchanges in the respective currency pairs shall not exceed the limits as mentioned below:

Currency Pairs	Position Limits
USD-INR	Gross open position across all contracts shall not exceed 15% of the total open interest or USD 50 million, whichever is higher.
EUR-INR	Gross open position across all contracts shall not exceed 15% of the total open interest or EUR 25 million, whichever is higher.
GBP-INR	Gross open position across all contracts shall not exceed 15% of the total open interest or GBP 25 million, whichever is higher.
JPY-INR	Gross open position across all contracts shall not exceed 15% of the total open interest or JPY 1000 million, whichever is higher.

8.6.6 Reserve Bank of India intervention in Exchange Traded Currency Derivatives

RBI vide press release 2015-2016/1362 dated December 09, 2015, has stated following:

"The Reserve Bank of India intervenes in the foreign exchange market as and when required in order to manage excessive volatility and to maintain orderly conditions in the market. As a further measure it has been decided to intervene in the Exchange Traded Currency Derivatives (ETCD) segment, if required. The data for the ETCD intervention will be published in the RBI monthly bulletin as in the case of Over the Counter (OTC) intervention.

In addition to above, users should participate in ETCD within the position limits (please refer section 7.6) specified by SEBI from time to time and any other restriction or guideline specified by respective regulators.

8.7 Eligibility Criteria for Members

The membership of the Currency Derivatives Segment is separate from the membership of the other segments of the Exchange. As per the SEBI (Stock Brokers) Regulations, 1992:

- The stock broker shall have such networth and shall deposit with the stock exchange such sum as may be specified by the SEBI/ stock exchange from time to time for Currency Derivatives Segment.
- The clearing member/ self-clearing member shall have the minimum networth and shall deposit the minimum sum specified by SEBI or a higher amount with the clearing corporation promoted by the respective stock exchange in the manner specified from time to time for Currency Derivatives Segment.
- The quantum of networth to be maintained by the stock broker/clearing member, as specified in said regulation, shall be reckoned for all segments/stock exchanges. The

quantum of deposit to be maintained by the stock broker/clearing member shall be separately calculated segment wise.

- The quantum of networth to be maintained by the stock broker/clearing member, shall be reckoned for all segments/stock exchanges.

Further, as per the SEBI (Stock Brokers) Regulations, 1992, the existing requirement of obtaining registration as stock broker/clearing member for each stock exchange/ clearing corporation has been done away with and instead a single registration with any stock exchange/ clearing corporation shall be required. For operating in any other stock exchange(s)/ clearing corporation(s), approval will be required from the concerned stock exchange or clearing corporation. If a new entity desires to register as a stock broker or clearing member with any stock exchange or clearing corporation, as the case may be, then the entity shall apply to SEBI through the respective stock exchange or clearing corporation in the manner prescribed in the Stock Broker Regulations. The entity shall be issued one certificate of registration, irrespective of the stock exchange(s) / clearing corporation(s) or number of segment(s).

Eligibility Criteria for a Trading Member

The admission as a trading member on the Stock Exchanges is based on the various criteria like age, capital adequacy, financial track record, education, experience and fulfillment of criteria of "fit & proper person" as laid down in the SEBI (Intermediaries) Regulations, 2008. The Exchanges may stipulate additional requirements over and above the SEBI prescribed rules.

A. Base Minimum Capital (BMC)

BMC is the deposit given by the member of the exchange against which no exposure for trades is allowed. The base minimum capital for trading members in cash, derivatives and debt segment is shown below:

Categories	BMC Deposit
Only Proprietary trading without Algorithmic trading (Algo)	Rs 10 Lacs
Trading only on behalf of Client (without proprietary trading) and without Algo	Rs 15 Lacs
Proprietary trading and trading on behalf of Client without Algo	Rs 25 Lacs
All Brokers with Algo	Rs 50 Lacs

- The BMC deposit is meant to meet contingencies in any segment of the Exchange.
- For members who are registered on more than one segment of the same Exchange, the highest BMC deposit across various segments is applicable.
- No exposure is granted against BMC deposit.
- The Stock Exchanges shall be permitted to prescribe suitable deposit requirements, over and above the SEBI prescribed norms, based on their perception and evaluation of risks involved.

- Minimum 50 percent of the deposit shall be in the form of cash and cash equivalents.

B. Eligibility Criteria

Eligibility criteria for membership are subject to the regulatory norms and provisions of SEBI and as provided in the Rules, Regulations, Byelaws and Circulars of the Exchanges. Securities Contracts (Regulation) Rules, 1957 has provided details of qualifications for membership of a recognized stock exchange:

Individual trading membership	
Age	Minimum Age: 21 years
Status	Indian Citizen
Education	At least HSC or Equivalent qualification
Experience	Applicant should have an experience of not less than two years as a partner with, or an authorized assistant or authorized remisier or apprentice to a member.

Partnership Firms registered under the Indian Partnership Act, 1932	
Where the applicant is a partnership firm, the applicant shall identify a Dominant Promoter Group as per the norms of the Exchange at the time of making the application. Any change in the shareholding of the partnership firm including that of the said Dominant Promoter Group (DPG) or their sharing interest shall be effected only with the prior permission of Exchange/SEBI.	
Age	Minimum Age of designate partner: 21 years
Status	Registered Partnership firm under Indian Partnership Act, 1932
Designated Partners	Identify at least two partners as designated partners who would be taking care of the day-to-day management of the partnership
Education	Designated Partners should be at least HSC or equivalent qualification
Designated Partners Experience	Should have a minimum of 2 years' experience in an activity related to dealing in securities or as portfolio manager or as investment consultant or as a merchant banker or in financial services or treasury, broker, authorized agent or authorized clerk or authorized representative or remisier or apprentice to a member of a recognized stock exchange, dealer, jobber, market maker, or in any other manner in dealing in securities or clearing and settlement thereof.
Dominant Promoter Norms	Identify partner's sharing interest as per Exchange DPG norms

Limited Liability Partnership (LLP)
An LLP as defined in the Limited Liability Partnership Act, 2008 (6 of 2009), shall be eligible to be admitted as a member of a Stock Exchange if, such 'limited liability partnership' undertakes to comply with such financial requirements and norms as may be specified by

the Securities and Exchange Board of India for the registration of such limited liability partnerships under sub-section (1) of section 12 of the SEBI Act, 1992 (15 of 1992); The designated partners of the 'limited liability partnership' are not disqualified from being members of a stock exchange under sub-rule (1) of rule 8 [except sub-clauses (b) and (f) thereof] or sub-rule (3) of rule 8 [except sub-clauses (a) and (f) thereof] of the Securities Contracts (Regulation) Rules, 1957 and the designated partners of the 'limited liability partnership' had not held the offices of Directors in any company or body corporate or partner in any firm or 'limited liability partnership', which had been a member of the stock exchange and had been declared defaulter or expelled by the stock exchange.	
Status	Registered Limited Liability Partnership under Limited Liability Partnership Act, 2008
Designated Partners	Identify at least two partners as designated partners who would be taking care of the day to day management of the limited liability partnership
Age	Minimum age of designated partner(s) : 21 years
Designated Partners Education	Designated Partners should be at least HSC or equivalent qualification
Designated Partners Experience	Should have a minimum of 2 years' experience in an activity related to dealing in securities or as portfolio managers or as investment consultants
Dominant Promoter Norms	Identify partner's sharing interest as per Exchange DPG norms

Corporations / Companies /Institutions	
A Company as defined in the Companies Act, 1956 (1 of 1956), shall be eligible to be admitted as a member of a Stock Exchange provided: such company is formed in compliance with the provisions of Section 12 of the said Act; it undertakes to comply with such other financial requirements and norms as may be specified by the Securities and Exchange Board of India for the registration of such company under sub-section (1) of section 12 of the SEBI Act, 1992 (15 of 1992); The directors of such company are not disqualified for being members of a stock exchange under clause (1) of rule 8 [except sub-clauses (b) and (f) thereof] or clause (3) of rule 8 [except sub-clauses (a) and (f) thereof] of the Securities Contracts (Regulation) Rules, 1957 and the directors of the company had not held the offices of the directors in any company which had been a member of the stock exchange and had been declared defaulter or expelled by the stock exchange	
Status	Corporate registered under The Companies Act, 1956 (Indian)
Minimum Paid up Equity Capital	30 lakhs
Designated Directors	Identification of at least two directors as designated directors who would be managing the day to day trading operations
Age	Minimum age of designated director(s) : 21 years
Education	Each of the Designated Directors should be at least HSC or equivalent qualification

Designated Directors Experience	Should have a minimum of 2 years' experience in an activity related to dealing in securities or as portfolio manager or as investment consultant or as a merchant banker or in financial services or treasury, broker, authorised agent or authorised clerk or authorised representative or remisier or apprentice to a member of a recognised stock exchange, dealer, jobber, market maker, or in any other manner in dealing in securities or clearing and settlement thereof.
Dominant Promoter Norms	Identify dominant group as per Exchange DPG norms

Banks authorized by the Reserve Bank of India under section 10 of the Foreign Exchange Management Act, 1999 as AD Category - I bank are permitted to become trading and clearing members of the currency derivatives segment of the recognized stock exchanges, on their own account and on behalf of their clients, subject to fulfilling the following minimum prudential requirements:

- Minimum net worth of ₹ 500 crores.
- Minimum CRAR of 10 per cent.
- Net NPA should not exceed 3 per cent.
- Made net profit for last 3 years.

C. Other Criteria:

At any point of time the applicant has to ensure that either the proprietor/one designated director/partner or the Compliance Officer of the applicant entity should be meeting the certification requirements as specified by SEBI or the Stock Exchanges. The certification requirements mandated by SEBI or by the exchanges make the members eligible for continued admittance norm for membership of the Exchange. Further, member should satisfy the minimum networth and deposit requirement as specified by SEBI/Exchanges/Clearing Corporation from time to time.

The Exchange may also specify such standards for investor service and infrastructure with regards to any category of applicants as it may deem necessary, from time to time.

Who is not eligible to become a member:

Further to the capital and networth requirements, no entity shall be admitted as a member/partner or director of the member if:

- it has been adjudged bankrupt or a receiver order in bankruptcy has been made against him or he has been proved to be insolvent even though he has obtained his final discharge;
- it has compounded with his creditors for less than full discharge of debts;
- it has been convicted of an offence involving a fraud or dishonesty;

- it is engaged as a principal or employee in any business other than that of securities, except as a broker or agent not involving any personal financial liability or for providing merchant banking, underwriting or corporate or investment advisory services, unless he undertakes to sever its connections with such business on admission, if admitted;
- it has been at any time expelled or declared a defaulter by any other Stock Exchange or he has been debarred from trading in securities by a Regulatory Authorities like SEBI, RBI etc.;
- it incurs such disqualification under the provisions of the Securities Contract (Regulations) Act, 1956 or Rules made there-under so as to disentitle such persons from seeking membership of a stock exchange;
- it incurs such disqualification consequent to which Exchange determines it to be not in public interest to admit him as a member on the Exchange, provided that in case of registered firms, body corporates and companies, the condition from (will apply to, all partners in case of partnership firms, all directors in case of companies); Exchange may from time to time modify / expand the scope of activities that could be considered as relevant experience for the above purpose.

Fit and Proper Person[40]

For the purpose of determining whether an applicant or the stock broker, authorized persons trading member and clearing member is a fit and proper person, the SEBI Board may take into account of any consideration as it deems fit including but not limited to the following criteria in relation to the applicant or the intermediary, the principal officer [the director, the promoter] and the key management persons by whatever name called:
(a) Integrity, reputation and character
(b) Absence of convictions and restraints order
(c) Competence including financial solvency and net worth of the applicant
(d) Absence of categorisation as a willful defaulter.

Authorized person[41]

Authorized person is not a member of a Stock Exchange but is 'Any person, individual, partnership firm, LLP or body corporate, who is appointed as such by a Stock Broker (including Trading Member) and who provides access to trading platform of a Stock Exchange as an agent of the Stock Broker'. Trading members are entitled to appoint authorized person to operate the trading workstations of Currency Derivatives Segment, with the approval of the exchange. The trading member has to obtain specific prior approval for each such person, and it is segment specific. Authorized Person (AP) should satisfy the criteria as specified by SEBI/stock exchanges from time to time. The AP should

[40] Schedule II, SEBI (Intermediaries) Regulations, 2008

[41] https://www.sebi.gov.in/legal/circulars/aug-2018/role-of-sub-broker-sb-vis-a-vis-authorized-person-ap-39825.html (Discontinuation of Sub-broker category). Please note that "Authorised Person" defined under FEMA and "Authorized Person" as per SEBI are two different kind of entities.

have the necessary infrastructure like adequate office space, equipment and manpower to effectively discharge the activities on behalf of the stock broker.

Chapter 9: Accounting and Taxation

LEARNING OBJECTIVES:

After studying this chapter, you should know about following:

- Accounting Treatment
- Disclosure Requirement
- Taxation

9.1 Accounting Guideline and Disclosure Requirements

Similar to other Exchange traded derivatives "Accounting, valuation and capital requirement shall be as per the applicable accounting standards and valuation methods prescribed by ICAI or other standard setting organization or as specified by the respective regulators of participants" will be applicable for Exchange Traded Currency Derivatives.

9.1.1 ICAI Guidance Notes on Accounting for Derivatives Contract (Revised 2021)[42]

The Institute of Chartered Accountants of India (ICAI) has issued guidance notes on Accounting for Derivatives Contract (Revised 2021). Brief points of the guidance note are given below:

Scope of the note specified that entities such as banking, non-banking finance companies ('NBFCs'), housing finance companies and insurance entities are required to follow the accounting treatment for derivative contracts, if any, prescribed by the concerned regulators such as the Reserve Bank of India (RBI) in case of banking entities and the NBFCs, National Housing Bank (NHB) in case of housing finance companies and Insurance Regulatory and Development Authority (IRDA) in case of insurance entities. In case the concerned regulator has not prescribed any accounting treatment for derivative contracts, the recommendations contained herein should be followed.

The accounting for derivatives covered by this Guidance Note is based on the following key principles:
(i) All derivative contracts should be recognised on the balance sheet and measured at fair value.
(ii) If any entity decides not to use hedge accounting as described in this Guidance Note, it should account for its derivatives at fair value with changes in fair value being recognised in the statement of profit and loss.
(iii) If an entity decides to apply hedge accounting as described in this Guidance Note, it should be able to clearly identify its risk management objective, the risk that it is hedging,

[42] https://resource.cdn.icai.org/65422asb060421.pdf

how it will measure the derivative instrument if its risk management objective is being met and document this adequately at the inception of the hedge relationship and on an on-going basis.
(iv) An entity may decide to use hedge accounting for certain derivative contracts and for derivatives not included as part of hedge accounting, it will apply the principles at (i) and (ii) above.
(v) Adequate disclosures of accounting policies, risk management objectives and hedging activities should be made in its financial statements.

Recognition of derivatives on the balance sheet at fair value

This Guidance Note requires that all derivatives are recognised on the balance sheet and measured at fair value since a derivative contract represents a contractual right or an obligation. Fair value in the context of derivative contracts represents the 'exit price' i.e. the price that would be paid to transfer a liability or the price that would be received when transferring an asset to a knowledgeable, willing counterparty. The fair value would also incorporate the effect of credit risk associated with the fulfilment of future obligations. The extent and availability of collateral should be factored in while arriving at the fair value of a derivative contract.

Hedge accounting

An entity is permitted but not required to designate a derivatives contract as a hedging instrument. Where it designates a derivative contract as a hedging instrument, it needs to, as a minimum:
(i) identify its risk management objective;
(ii) demonstrate how the derivative contract helps meet that risk management objective;
(iii) specify how it plans to measure the fair value of the derivative instrument if the derivative contract is effective in meeting its risk management objective (including the relevant hedge ratio);
(iv) document this assessment (of points (i), (ii), (v), (vi) and (vii) of this paragraph) at inception of the hedging relationship and subsequently at every reporting period;
(v) demonstrate in cases of hedging a future cash flow that the cash flows are highly probable of occurring.
(vi) conclude that the risk that is being hedged could impact the statement of profit and loss; and
(vii) adequately disclose its accounting policies, risk management objectives and hedging activities (as required by this Guidance Note) in its financial statements.

Certain derivative instruments that are traded on stock exchanges such as foreign exchange futures contracts or equity options / equity futures do not have such requirements and in those cases, in particular, it will be important to demonstrate compliance with the above criteria before hedge accounting can be applied.

In case a derivative contract is not classified as a hedging instrument because it does not meet the required criteria or an entity decides against such designation, it will be

measured at fair value and changes in fair value will be recognised immediately in the statement of profit and loss.

Types of hedge accounting

This Guidance Note recognises the following three types of hedging;

- The fair value hedge accounting model is applied when hedging the risk of a fair value change of assets and liabilities already recognised in the balance sheet, or a firm commitment that is not yet recognised.
- The cash flow hedge accounting model is applied when hedging the risk of changes in highly probable future cash flows or a firm commitment in a foreign currency.
- The hedge of a net investment in a foreign operation.

Fair value hedge accounting model

A fair value hedge seeks to offset the risk of changes in the fair value of an existing asset or liability or an unrecognised firm commitment that may give rise to a gain or loss being recognised in the statement of profit and loss. A fair value hedge is a hedge of the exposure to changes in fair value of a recognised asset or liability or an unrecognised firm commitment, or an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and could affect the statement of profit and loss.

An example of a fair value hedge is the hedge of a fixed rate bond with an interest rate swap, changing the interest rate from fixed to floating. Another example is the hedge of the changes in value of inventory using commodity futures contracts.

Cash flow hedge accounting model

A cash flow hedge seeks to offset certain risks of the variability of cash flows in respect of an existing asset or liability or a highly probable forecast transaction that may be reflected in the statement of profit and loss in a future period. Under the cash flow hedge, the hedging instrument is measured at fair value, but any gain or loss that is determined to be an effective hedge is recognized in equity, for e.g. cash flow hedge reserves. This is intended to avoid volatility in the statement of profit and loss in a period when the gains and losses on the hedge item are not recognized therein.

Net Investment Hedging

An investor in a non-integral operation is exposed to changes in the carrying amount of the net assets of the foreign operation arising from the translation of those assets into the reporting currency of the investor.

Principles relating to the hedge of a net investment in a foreign operation are:

- Foreign exchange gains and losses on a net investment in a non-integral foreign operation are recognised directly in equity. This occurs through the translation of the non-integral foreign operation's net assets for purposes of consolidation
- Gains and losses of foreign currency derivatives use as hedging instruments are recognised directly in equity to the extent that the hedge is considered to be effective

- The ineffective portion of the gains and losses on the hedging instruments is recognised in the statement of profit and loss immediately
- Any net deferred foreign currency gain and losses i.e. arising from both the net investment and hedging instruments are recognised in the statement of profit and loss at the time of disposal of the foreign operation.

Presentation in the financial statements

Derivative assets and liabilities recognised on the balance sheet at fair value should be presented as current and non-current based on the following considerations:

- Derivatives that are intended for trading or speculative purposes should be reflected as current assets and liabilities.
- Derivatives that are hedges of recognised assets or liabilities should be classified as current or non-current based on the classification of the hedged item.
- Derivatives that are hedges of forecasted transactions and firm commitments should classified as current or non-current based on the settlement date / maturity dates of the derivative contracts.
- Derivatives that have periodic or multiple settlements such as interest rate swaps should not be bi-furcate into current and non-current elements. Their classification should be based on when a predominant portion of their cash flows are due for settlement as per their contractual terms.

This Guidance Note does not permit any netting off of assets and liabilities except where basis adjustment is applied under cash flow hedges and hence all the amounts presented in the financial statements should be gross amounts. Amounts recognised in the statement of profit and loss for derivatives not designated as hedges may be presented on a net basis.

Disclosures in financial statements

An entity should satisfy the broader disclosure requirements by describing its overall financial risk management objectives, including its approach towards managing financial risks. Disclosures should explain what the financial risks are, how the entity manages the risk and why the entity enters into various derivative contracts to hedge the risks. An entity should disclose the methodology used to arrive at the fair value of derivative contracts (whether used for hedging or not) and the extent of fair value gains/losses recognized in the statement of profit and loss and in equity. The entity should disclose its risk management policies. An entity is also required to make specific disclosures about its outstanding hedge accounting relationships. Insofar as disclosure of derivatives designated for hedging foreign currency risks are concerned, the same should be disclosed in the format specified under this Guidance Note, which also requires disclosure of all foreign exchange assets and liabilities including contingent liabilities, both hedged and unhedged.

Hedge Effectiveness:

Hedge effectiveness is the degree to which changes in the fair value or cash flows of the hedged item that are attributable to a hedged risk are offset by changes in the fair value or cash flows of the hedging instrument. Hedge ineffectiveness is the extent to which the changes in the fair value or the cash flows of the hedging instrument are greater or less than those on the hedged item. This Guidance Note does not prescribe one single method for how hedge effectiveness testing and ineffectiveness measurement should be conducted. The appropriate method for each entity will depend on the facts and circumstances relevant to each hedging programme and be driven by the risk management objective of the entity. Entities may apply commonly used measures such as critical terms match, dollar offset or regression methods as appropriate to assess hedge effectiveness.

9.1.2 Accounting Standard (AS) 30

Accounting Standard (AS) 30, "Financial Instruments: Recognition and Measurement", issued by the Council of the Institute of Chartered Accountants of India, specify about the accounting of derivatives contract. The objective of this Standard is to establish principles for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. Accounting Standard (AS) 30 has defined Derivatives as:

A derivative is a financial instrument or other contract within the scope of this Standard with all three of the following characteristics:

(a) its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying');

(b) it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors; and

(c) it is settled at a future date.

AS 30 will get applicable to exchange traded derivatives contract in case it satisfy the above condition. Participant can refer to AS 30 and similar Indian Accounting Standards for further details.

9.1.3 ICAI Guidance Notes (2003) on Accounting of Index Futures Contract[43]

The Institute of Chartered Accountants of India (ICAI) in 2003 has issued guidance notes on accounting of index futures contracts from the view point of parties who enter into such futures contracts as buyers or sellers. For other parties involved in the trading process, like brokers, trading members, clearing members and clearing corporations, a trade in equity index futures is similar to a trade in, say shares, and does not pose any peculiar accounting problems. The note is largely focus on the accounting treatment of equity index futures in the books of the client.

Accounting for Initial Margin

Every Client is required to pay to the Trading Member/Clearing Member, initial margin, computed as per SPAN, for entering into an Equity Derivative Instruments contract. Such initial margin paid/payable should be debited to an appropriate account, say, 'Initial Margin – Equity Derivative Instruments Account'. Any amount paid/received subsequently on account of initial margin is also debited/credited to the account.

At the balance sheet date, the balance in the 'Initial Margin – Equity Derivative Instruments Account' should be shown separately under the head 'Current Assets'. Where any amount has been paid in excess of the initial margin, the excess should be disclosed separately as a deposit under the head 'Current Assets'. Where instead of paying initial margin in cash, the Client provides bank guarantees or lodges securities with the member, a disclosure in respect of outstanding Equity Derivative Instruments contracts at the year-end should be made separately for each type of instrument in the notes to the financial statements of the Client. Sometimes, the Client may deposit a lumpsum amount with the Clearing/Trading Member in respect of margin money instead of paying/receiving margin money on daily basis. The amount so paid is in the nature of a deposit and should be debited to an appropriate account, say, 'Deposit for Margin Money Account'. The amount of initial margin received into/paid from such account should be debited/credited to the 'Deposit for Margin Money Account' with a corresponding credit/debit to the 'Initial Margin – Equity Derivative Instruments Account'. At the year-end, any balance in the 'Deposit for Margin Money Account' should be shown as a deposit under the head 'Current Assets'.

Accounting for payment/receipt of Mark-to-Market Margin

Payments made or received on account of Mark-to-Market margin by the Client would be credited/debited to the bank account and the corresponding debit or credit for the same should be made to an appropriate account, say, 'Mark-to-Market Margin – Equity Index Futures Account' or 'Mark-to-Market Margin – Equity Stock Futures Account', as the case may be.

[43] ICAI has withdrawn this note as 30 became recommendatory from April 1, 2009

The amount of Mark-to-Market Margin received into/paid from lumpsum deposit with the Clearing/Trading Member should be debited/credited to the 'Deposit for Margin Money Account' with a corresponding credit/debit to the 'Mark-to-Market Margin – Equity Index Futures Account' or the 'Mark-to-Market Margin – Equity Stock Futures Account', as the case may be.

Accounting for Open Interests in Futures Contracts as on the balance sheet date

The debit/credit balance in the 'Mark-to-Market Margin – Equity Index Futures Account' or the 'Mark-to-Market Margin – Equity Stock Futures Account', as the case may be, represents the net amount paid to/received from the Clearing/Trading Member on the basis of movement in the prices of equity index futures or equity stock futures till the balance sheet date in respect of open futures contracts. In case the said account(s) has a debit balance on the balance sheet date, the same should be shown as a current asset. On the other hand in case the said account(s) has a credit balance on the balance sheet date, the same should be shown as a current liability.

Keeping in view 'prudence' as a consideration for the preparation of financial statements, a provision for the anticipated loss in respect of open futures contracts should be made. For this purpose, the net amount paid/received on account of Mark-to-Market Margin on open futures contracts on the balance sheet date should be determined Index-wise/Scrip-wise. Where the Index-wise/Scrip-wise balance is a debit balance representing the net amount paid, provision should be made for the said amount. However, where the Index-wise/Scrip-wise balance is a credit balance representing the net amount received, the same should be ignored keeping in view the consideration of 'prudence'. To facilitate these computations, the Mark-to-Market Margin account(s) may be maintained Index-wise/Scrip-wise.

The provision as created above should be credited to an appropriate account, say, 'Provision for Loss on Equity Index Futures Account' or to 'Provision for Loss on Equity Stock Futures Account', as the case may be. In case of any opening balance in the 'Provision for Loss on Equity Index Futures Account' or the 'Provision for Loss on Equity Stock Futures Account', the same should be adjusted against the provision required in the current year and the profit and loss account should be debited/credited with the balance provision required to be made/excess provision written back.

The 'Provision for Loss on Equity Index Futures Account' or the 'Provision for Loss on Equity Stock Futures Account' should be shown as a deduction from the balance of the 'Mark-to-Market Margin – Equity Index Futures Account' or the 'Mark-to-Market Margin – Equity Stock Futures Account', if disclosed as a current asset. On the other hand, if the above stated Margin account(s) is disclosed as a current liability, the aforesaid provision account(s) should be shown as a provision on the liabilities side of the balance sheet.

Accounting at the time of final settlement or squaring-up Index futures and cash-settled stock futures contracts

At the expiry of a series of equity index futures/equity stock futures, the profit/loss, on final settlement of the contracts in the series, should be calculated as the difference between the Final Settlement Price and the contract prices of all the contracts in the series. The profit/loss, so computed, should be recognised in the profit and loss account by corresponding debit/credit to the 'Mark-to-Market Margin – Equity Index Futures Account' or the 'Mark-to-Market Margin – Equity Stock Futures Account', as the case may be.

The same accounting treatment as recommended above should be made when a contract is squared-up by entering into a reverse contract. If more than one contract in respect of the relevant series of equity index futures/equity stock futures contract to which the squared-up contract pertains is outstanding at the time of the squaring-up of the contract, the contract price of the contract so squared-up should be determined using Weighted Average Method for calculating profit/loss on squaring-up.

Delivery-settled stock futures contracts

Under the delivery-settled stock futures contracts, at the time of final settlement, securities will be transferred in consideration for cash at the contract price. In such a case, irrespective of the price of the security on the settlement date, the same will be reflected in the books at its original contract price. Thus, the relevant securities account is debited or credited for Long and Short futures contract, respectively, by the contract price, by a corresponding credit/debit to 'Mark-to-Market Margin – Equity Stock Futures Account', and cash/bank account.

Accounting in case of default

When a client defaults in making payment in respect of Mark-to-Market Margin, the contract is closed out. The amount not paid by the client is adjusted against the initial margin already paid by him. In the books of the client, the amount of Mark-to-Market Margin so adjusted should be debited to the 'Mark-to-Market Margin – Equity Index Futures Account' or the 'Mark-to-Market Margin – Equity Stock Futures Account', as the case may be, with a corresponding credit to the 'Initial Margin – Equity Derivative Instruments Account'. In case, the amount to be paid on account of Mark-to-Market Margin exceeds the initial margin, the excess is a liability and should be shown as such under the head 'Current Liabilities and Provisions', if it continues to exist on the balance sheet date. The amount of profit or loss on the contract so closed out should be calculated and recognised in the profit and loss account in the manner described above.

Accounting for payment/receipt of the premium

At the time of entering into an options contract, the buyer/holder of the Option is required to pay the premium. In the books of the buyer/holder, such premium should be debited to an appropriate account, say, 'Equity Index Option Premium Account' or 'Equity Stock Option Premium Account', as the case may be. In the books of the seller/writer, such premium received should be credited to an appropriate account, say, 'Equity Index Option Premium Account' or 'Equity Stock Option Premium Account', as the case may be.

Accounting for Open Interests in Options Contracts as on the balance sheet date

The 'Equity Index Option Premium Account' and the 'Equity Stock Option Premium Account' should be shown under the head 'Current Assets' or 'Current Liabilities', as the case may be. In case of multiple Options, entries recommended in above paragraph may be made in one 'Equity Index Options Premium Account' or 'Equity Stock Options Premium Account', in respect of Options of all indexes/scrips. The balance of this composite account should be shown under the head 'Current Assets' or 'Current Liabilities', as the case may be.

In the books of the buyer/holder, a provision should be made for the amount by which the premium paid for the Option exceeds the premium prevailing on the balance sheet date since the buyer/holder can reduce his loss to the extent of the premium prevailing in the market, by squaring-up the transaction. The provision so created should be credited to an appropriate account, say, 'Provision for Loss on Equity Index Option Account' or to 'Provision for Loss on Equity Stock Option Account', as the case may be. The provision made as above should be shown as a deduction from the balance of the 'Equity Index Option Premium Account' or the 'Equity Stock Option Premium Account' which is shown under the head 'Current Assets'. The excess of premium prevailing in the market on the balance sheet date over the premium paid is not recognised keeping in view the consideration of prudence.

In the books of the seller/writer, a provision should be made for the amount by which premium prevailing on the balance sheet date exceeds the premium received for that Option. This provision should be credited to 'Provision for Loss on Equity Index Option Account' or to 'Provision for Loss on Equity Stock Option Account', as the case may be, with a corresponding debit to profit and loss account. 'Equity Index Option Premium Account' or 'Equity Stock Option Premium Account' and 'Provision for Loss on Equity Index Option Account' or 'Provision for Loss on Equity Stock Option Account' should be shown under the head 'Current Liabilities and Provisions'. The excess of premium received over the premium prevailing on the balance sheet date is not recognised keeping in view the consideration of prudence. In case of any opening balance in the 'Provision for Loss on Equity Stock Options Account' or the 'Provision for Loss on Equity Index Options Account', the same should be adjusted against the provision required in the current year and the profit and loss account be debited/credited with the balance provision required to be made/excess provision written back.

In case of multiple open options at the year-end, the 'Provision for Loss on Equity Stock Options Account' or the 'Provision for Loss on Equity Index Options Account', as the case may be, should be shown as a deduction from the 'Equity Stock Options Premium Account' and the 'Equity Index Options Premium Account' respectively, if these have a debit balance and are disclosed under the head 'Current Assets'. In case the 'Equity Stock Options Premium Account' and the 'Equity Index Options Premium Account' have a credit balance and are disclosed under the head 'Current Liabilities', the respective provision account should be shown under 'Provisions' under the head 'Current Liabilities and Provisions'.

Accounting at the time of final settlement Index options and cash-settled stock options contracts

In the books of the buyer/holder: On exercise of the Option, the buyer/holder will recognise premium as an expense and debit the profit and loss account by crediting the 'Equity Index Option Premium Account' or the 'Equity Stock Option Premium Account'. Apart from the above, the buyer/holder will receive favourable difference, if any, between the Final Settlement Price as on the Exercise/Expiry Date and the Strike Price, which will be recognised as income.

In the books of the seller/writer: On exercise of the Option, the seller/writer will recognise premium as an income and credit the profit and loss account by debiting the 'Equity Index Option Premium Account' or the 'Equity Stock Option Premium Account'. Apart from the above, the seller/writer will pay the adverse difference, if any, between the Final Settlement Price as on the Exercise/Expiry Date and the Strike Price. Such payment will be recognised as a loss.

Delivery-settled stock options contracts

If an Option expires unexercised, the accounting entries will be the same as those in case of cash-settled options. If the Option is exercised, securities will be transferred in consideration for cash at the Strike Price. In such a case, the accounting treatment should be as recommended in the following paragraphs.

In case of buyer/holder: For a Call Option, the buyer/holder will receive the security for which the Call Option was entered into. The buyer/holder should debit the relevant security account and credit cash/bank. For a Put Option, the buyer/holder will deliver the security for which the Put Option was entered into. The buyer/holder should credit the relevant security account and debit cash/bank. In addition to this entry, the premium paid should be transferred to the profit and loss account, the accounting entries for which should be the same as those in case of cash settled options.

In case of seller/writer: For a Call Option, the seller/writer will deliver the security for which the Call Option was entered into. The seller/writer should credit the relevant

security account and debit cash/bank. For a Put Option, the seller/writer will receive the security for which the Put Option was entered into. The seller/writer should debit the relevant security account and credit cash/bank. In addition to this entry, the premium received should be transferred to the profit and loss account, the accounting entries for which should be the same as those in case of cash settled options.

Accounting at the time of squaring-up of an option contract:
When an Options contract is squared-up by entering into a reverse contract, the difference between the premium paid and received, after adjusting the brokerage charged, on the squared-up transactions should be transferred to the profit and loss account.

Method for determination of profit/loss in multiple options situation

For working out profit or loss in case of outstanding multiple options of the same scrip/index with the same Strike Price and the same Expiry Date, weighted average method should be followed on squaring-up of transactions. Similarly, for working out profit or loss in case of outstanding multiple equity stock options of the same scrip with the same Strike Price and the same Expiry Date, weighted average method should be followed where such Option(s) is/are exercised before the Expiry Date.

Disclosure

The enterprise should disclose the accounting policies and the methods adopted, including criteria for recognition and the basis of measurement applied for various Equity Derivative Instruments. Where initial margin is paid by way of a bank guarantee and/or lodging of securities, the amount of such bank guarantee/book value and market value of the securities in respect of outstanding Equity Derivative Instruments contracts at the year-end, should be disclosed separately for each type of instrument.

9.2 Taxation of Exchange Traded Currency Derivatives:

The gains or losses arising from trading in Exchange traded derivatives are taxable under the head 'Profits and Gains from Business or Profession' (PGBP). Any expenditure relating to administration is considered to be deductible. The Income-tax Act classifies the business income into 'speculative' and 'non-speculative'. Though Income arising from speculative transactions are taxable under the head PGBP, yet they are treated differently and rigorously from non-speculative business income. Any loss arising from speculative transaction could be set off only from speculative income.

A transaction is deemed as speculative if it is periodically or ultimately settled otherwise than through actual delivery or transfer. However, Section 43(5) has specifically excluded certain derivative transactions from the meaning of speculative transaction as these

instruments are used for hedging underlying assets. Further, an eligible transaction in respect of trading in derivatives referred to in clause (*ac*) of section 2 of the Securities Contracts (Regulation) Act, 1956 (42 of 1956) carried out in a recognised stock exchange shall not be deemed to be a speculative transaction. Thus, income or loss from dealing in exchange traded currency derivatives shall be deemed as normal business income (non-speculative business) even though delivery is not effected in such transactions. Consequently, any loss arising from Exchange traded derivatives can be set off against any normal business income. The business income of an assessee is charged to tax at normal rates as applicable in case of an assessee.

However, securities held by FPIs are always treated as capital asset. Therefore, any profit and gains arising to FPI from derivative transactions shall always be taxable under the head capital gain. Generally, the derivatives positions are held for less than 12 months, any gain or loss arising to an FPI from dealing in derivatives shall be chargeable to tax as short-term capital gain or loss.

9.2.1 Computation of Turnover

The Income-tax Act does not contain any provision or guidance for computation of turnover in Exchange traded derivatives trading. However, the Guidance Note on Tax Audit issued by the ICAI prescribes the method of determining turnover which shall be as under:

a) The total of favourable and unfavourable differences is taken as turnover.

b) Premium received on sale of options is also to be included in turnover.

c) In respect of any reverse trades, the difference thereon should also form part of the turnover.

The computation of turnover is a very important factor as the applicability of tax audit is determined on the basis of turnover. Also, if the taxpayer is opting for the presumptive taxation scheme under section 44AD (subject to total turnover not exceeding Rs. 2 crores), he can declare the profit at the rate of 6% of such turnover in case of receipts in cheque or any digital modes or 8% of turnover in case of cash receipts. Further, A tax audit will be mandatory if the turnover or income arising from trading of Exchange traded derivatives is above and beyond Rs 1 crore.

9.2.2 Scheme of Taxation

The income from Exchange traded derivatives trading can be offered to tax under the normal scheme of taxation or the presumptive scheme of taxation under Section 44AD (subject to total turnover not exceeding Rs. 2 crores). Under the presumptive scheme, the investor can choose to declare the profits at the rate of 6% of turnover as the payment is always received through banking channels. The presumptive income computed as per the prescribed rate is the final income and no further expenses will be allowed or disallowed. Also, the person opting for this scheme is not required to maintain the books of accounts

prescribed under section 44AA and get them audited. Further, he can pay 100% of the advance tax in a single instalment up to 15th March of the relevant financial year.

9.2.3 Set-off and Carry Forward of Losses

The losses from the trading of Exchange traded derivatives, if treated as a normal business loss, can be set off against the income from the other heads. However, the business loss cannot be set off against the income from salary. The unabsorbed loss can be carried forward up to 8 assessment years. It can be set off only against the business income in the subsequent years. It is important to note that the assessee is entitled to carry forward the business loss provided the return of income is filed on or before the due date. If such return is not filed within the prescribed due date, the right to carry forward and set-off is lost.

Chapter 10: Code of Conduct and Investor Protection Measure

LEARNING OBJECTIVES:

After studying this chapter, you should know about following:

- Code of Conduct for Broker
- Investor Grievance Mechanism
- Arbitration Mechanism
- Risk Disclosure to Client and KYC

10.1 SEBI's Code of Conduct for Brokers

Schedule II of the SEBI (Stock Brokers) Regulations, 1992 prescribes a code of conduct for securities brokers, which is discussed below:

A. General

1. Integrity: Shall maintain high standards of integrity, promptitude and fairness in the conduct of all its business.
2. Exercise of Due Skill and Care: Shall act with due skill, care and diligence in the conduct of all its business.
3. Manipulation: Shall 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: Shall 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: Shall abide by all the provisions of the Act and the rules, regulations issued by the Government, the Board and the stock exchange from time to time as applicable.

Duty towards the Investor

1. A stock-broker, in his dealings with the clients and the general investing public, shall faithfully execute the orders for buying and selling of securities at the best available market price and not refuse to deal with a small Investor merely on the ground of the volume of business involved.
2. A stock-broker shall promptly inform his client about the execution or non-execution of an order and make prompt payment in respect of securities sold and arrange for prompt delivery of securities purchased by clients.
3. A stock-broker shall issue without delay to his client a contract note for all transactions in the format specified by the stock exchange.

4. A stock-broker shall not disclose or discuss with any other person or make improper use of the details of personal investments and other information of a confidential nature of the client which he comes to know in his business relationship.
5. A stock-broker shall not encourage sales or purchases of securities with the sole object of generating brokerage or commission. He shall not furnish false or misleading quotations or give any other false or misleading advice or information to the clients with a view of inducing him to do business in particular securities and enabling himself to earn brokerage or commission thereby.
6. A stock-broker shall 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 stock-broker.
7. A stock-broker, when dealing with a client, shall disclose whether he is acting as a principal or as an agent and shall ensure at the same time that no conflict of interest arises between him and the client. In the event of a conflict of interest, he shall inform the client accordingly and shall not seek to gain a direct or indirect personal advantage from the situation and shall not consider clients' interest inferior to his own.
8. A stock-broker shall not make a recommendation to any client who might be expected to rely thereon to acquire, dispose of, retain any securities unless he has reasonable grounds for believing that the recommendation is suitable for such a client upon the basis of the facts, if disclosed by such a client as to his own security holdings, financial situation and objectives of such investment.
9. A stock broker or any of his employees shall not render, directly or indirectly, any investment advice about any security in the publicly accessible media, whether real-time or non-real-time, unless a disclosure of his interest including the interest of his dependent family members and the employer including their long or short position in the said security has been made, while rendering such advice. In case an employee of the stock broker is rendering such advice, he shall also disclose the interest of his dependent family members and the employer including their long or short position in the said security, while rendering such advice.
10. A stock-broker should have adequately trained staff and arrangements to render fair, prompt and competence services to his clients.

Duty towards Other Stock-Brokers

1. A stock-broker shall co-operate with the other contracting party in comparing unmatched transactions. A stock-broker shall not knowingly and wilfully deliver documents which constitute bad delivery and shall co-operate with other contracting party for prompt replacement of documents which are declared as bad delivery.
2. A stock-broker shall extend fullest co-operation to other stock-brokers in protecting the interests of his clients regarding their rights to dividends, bonus shares, right shares and any other right related to such securities.
3. A stock-broker shall carry out his transactions with other stock-brokers and shall comply with his obligations in completing the settlement of transactions with them.
4. A stock-broker shall not advertise his business publicly unless permitted by the stock exchange.

5. A stock-broker shall not resort to unfair means of inducing clients from other stock-brokers.
6. A stock-broker shall not neglect or fail or refuse to submit the required returns and not make any false or misleading statement on any returns required to be submitted to the SEBI and the stock exchange.

10.2 Investor Grievance

Investors are the backbone of the securities market. Protection of the interests of investors is of paramount importance for the intermediaries, stock exchanges and the regulators associated with the markets. Regulations and compliance efforts have been put in place to protect the investors against any intentional or unintentional wrong doing or activities of any of the participants in the market. However, there may be occasions when the investors have grievances against a) intermediary/broking firm through which it is carrying out the transactions or/and (b) against the company of which it is a shareholder. In the event of any grievance(s), the investor is first required to approach the concerned intermediary/trading firm/company for settling his/her grievance. If the investor is not satisfied, then he/she can approach the stock exchange(s) of which the broking firm is a member and/or the investor can approach the securities market regulator-SEBI. The stock exchange(s) and SEBI then independently take up the grievances against its registered intermediaries and advises the registered trading member to redress the investor grievance.

Grievance Redressal Mechanism
Level 1 – Approach the Stock Broker at the designated Investor Grievance e-mail ID of the stock broker. The Stock Broker will strive to redress the grievance immediately, but not later than 30 days of the receipt of the grievance.
Level 2 – Approach the Stock Exchange using the grievance mechanism mentioned at the website of the respective exchange.
Level 3 – The complaint not redressed at Stock Broker / Stock Exchange level, may be lodged with SEBI on SCORES (a web based centralized grievance redressal system of SEBI) at: https://scores.gov.in

10.2.1 Investor Grievance Handling at the Trading Member Level

All the trading firms have a designated cell/person for redressing investor grievances. When a complaint is filed by the investor, matter has to be resolved at the branch level or the firm level depending upon the nature of the complaint. All the registered brokers shall designate an e-mail ID of the grievance redressal division/compliance officer exclusively for the purpose of registering complaints by investors. The broker shall also display the email ID and other relevant details prominently on their websites and in the various materials/pamphlets/advertisement campaigns initiated by them for creating investor awareness. Further, for information of all investors who deal/ invest/ transact in the market, the offices of all stock brokers (its registered authorized person(s)) shall prominently display basic information about the grievance redressal mechanism. The

stock broker shall endeavour to redress investor grievances promptly within the time specified by the SEBI/Exchanges from time to time. The stock broker shall maintain records regarding investor grievances received by it and redressal of such grievances.
SEBI has issued circular[44] for "Publishing Investor Charter and disclosure of Investor Complaints by Stock Brokers on their websites". SEBI has prepared an Investor Charter for Stock Brokers inter-alia detailing the services provided to Investors, Rights of Investors, various activities of Stock Brokers with timelines, DOs and DON'Ts for Investors and Grievance Redressal Mechanism. SEBI has advised member to provide investor grievance redressal within 30 days from the receipt of complaints from investor. Stock Exchanges are directed to advise Stock Brokers to bring the Investor Charter to the notice of their clients (existing as well as new clients) through disclosing the Investor Charter on their respective websites, making them available at prominent places in the office, provide a copy of Investor Charter as a part of account opening kit to the clients, through e-mails/ letters etc. Further, in order to bring about transparency in the Investor Grievance Redressal Mechanism, it has been decided that all the Stock Brokers shall disclose on their respective websites, the data on complaints received against them or against issues dealt by them and redressal thereof, latest by 7th of succeeding month, as per the format provided in the above circular. According to SEBI (Intermediaries) Regulations 2008, The stock broker shall at the end of each quarter of a financial year ending on 31st March upload information about the number of investor grievances received, redressed and those remaining unresolved beyond three months of the receipt thereof by the stock broker on the website.

10.2.2 Investor Grievance handling at the Stock Exchanges and SEBI

In case the complainant or the aggrieved investor is unsatisfied with the redressal process of the trading member then the investor can take his grievance to the stock exchange or SEBI.

10.2.2.1 SEBI Complaints Redressal System (SCORES)

SEBI handles the investor grievances through a system called SEBI Complaints Redress System (SCORES). SCORES is a web based centralized system to capture investor complaints against listed companies and registered intermediaries and is available 24x7. Salient features of SCORES are:

- Centralized database of all complaints.
- Online movement of complaints to the concerned entities.
- Online upload of Action Taken Reports (ATRs) by the concerned entities.
- Online tracking of status of complaints by investors.

[44]https://www.sebi.gov.in/legal/circulars/dec-2021/publishing-investor-charter-and-disclosure-of-investor-complaints-by-stock-brokers-on-their-websites_54402.html

It allows the investors to lodge their complaints and track the status online. Investors who wish to lodge a complaint on SCORES are requested to register themselves on www.scores.gov.in.[45] When a complaint is lodged on SCORES, an email acknowledgement is generated for reference and tracking. The system also allows market intermediaries and listed companies to receive complaints lodged against them electronically. SEBI encourages the investors to lodge complaints through electronic mode in SCORES. However, if an investor submits a manual complaint, the same is digitized by SEBI and uploaded on SCORES. Thereafter, follow-up actions of the complaint are done in electronic form only i.e., through SCORES. Investors can easily access, retrieve and preserve the complaints lodged by them in electronic mode. Further, it enhances the turnaround time and speed of redressal of a complaint.

Investors may contact the Investor Associations (IAs) recognized by SEBI for any assistance in filing complaints on SCORES. The lists of Investor Associations are available on SEBI website (www.sebi.gov.in). Investors may also seek assistance in filing complaints on SCORES from SEBIs toll free helpline numbers. SEBI has received inputs from listed companies and intermediaries that investor grievances can be resolved faster if the grievance been taken up directly with the entity at the first instance. Accordingly, it appears to be prudent and time saving if the investors approach the concerned listed company or registered intermediary first with all the requisite details to redress the complaints. In case, the listed company or registered intermediary fails to redress the complaint to the investor's satisfaction, the investor may file a complaint in SCORES.

The investor grievances received by SEBI against stock brokers will be taken up electronically with the concerned stock exchange(s) through SCORES (https://scores.gov.in/Admin). The stock exchange(s) shall, in turn, take up the matter with the concerned stock brokers. With a view to make complaint redressal mechanism through SCORES more efficient, all stock brokers are directed to address/redress the complaint within a period of 15 days from the receipt of the complaint. In case of additional information is required from complainant, the same shall be sought within 7 days from the receipt of the complaint. In such case the period of 15 days shall run from the receipt of additional information. SEBI has advised Stock Exchanges to put in place a suitable mechanism to follow up with the stock broker, wherever necessary; devise a system to levy penalty on its members for any non-compliance with the requirements related to SCORES, update the status of the complaints in SCORES, at every stage, along with supporting documents and ensure that the status of investor complaints disclosed on their websites is in conformity with the status updated in SCORES.

The complaints received by SEBI against Stock Exchanges and Depositories shall be electronically sent through SCORES. Stock Exchanges and Depositories advised to view the pending complaints at http://scores.gov.in/admin and submit the Action

[45]https://www.sebi.gov.in/legal/circulars/mar-2018/investor-grievance-redress-mechanism-new-policy-measures_38481.html

Taken Report (ATR) along with supporting documents electronically in SCORES. Stock Exchanges and Depositories indicate a contact person in case of SCORES, who is an employee heading the complaint services division/cell/department. Address/redress the complaints within a period of 15 working days upon receipt of complaint on SCORES. In case additional information is required from the complainant, the same shall be sought within 7 working days of receipt on SCORES. In such case, the period of 15 working days will be counted upon the receipt of additional information. Maintain a monthly record of the complaints which are not addressed / redressed within 15 working days from the date of receipt of the complaint/information, along with the reason for such pendency. Exchanges / Depositories have to upload/update the ATR on the SCORES. Failure to do so shall be considered as non-redressal of the complaint and the complaint shall be shown as pending.

Presently, the limitation period for filing an arbitration reference with stock exchanges is three years. In line with the same and in order to enhance ease, speed & accuracy in redressal of investor grievance, the investor may lodge a complaint on SCORES within three years from the date of cause of complaint;

- where Investor has approached the listed company or registered intermediary for redressal of the complaint **and**,
- The concerned listed company or registered intermediary rejected the complaint **or**,
- The complainant does not receive any communication from the listed company or intermediary concerned **or**,
- The complainant is not satisfied with the reply given to him or redressal action taken by the listed company or an intermediary.

An investor who has lodged the complaint can verify the status by logging in using unique complaint registration number. Every complaint has an audit trail and saved in a central database. If the complaint is successfully resolved the entity is advised to send reply to complainant.

It is pertinent to note here that at present following types of complaints are not dealt through SCORES

i. Complaints against the companies which are unlisted/delisted, in dissemination board of Stock Exchanges,
ii. Complaints those are sub-judice i.e., relating to cases which are under consideration by court of law, quasi-judicial proceedings, etc.
iii. Complaints falling under the purview of other regulatory bodies viz. RBI, IRDAI, PFRDA, CCI, etc., or under the purview of other ministries viz., MCA, etc.
iv. Complaints against a sick company or a company where a moratorium order is passed in winding up / insolvency proceedings.
v. Complaints against the companies where the name of company is struck off from RoC or a vanishing company as per list published by MCA.
vi. Companies under liquidation / BIFR / etc.

Following matters cannot be considered as complaints under SCORES:

a. Complaint not pertaining to investment in securities market

b. Anonymous Complaints (except whistle-blower complaints)

c. Incomplete or un-specific complaints

d. Allegations without supporting documents

e. Suggestions or seeking guidance/explanation

f. Not satisfied with trading price of the shares of the companies

g. Non-listing of shares of private offer

h. Disputes arising out of private agreement with companies/intermediaries

i. Matter involving fake/forged documents

j. Complaints on matters not in SEBI purview

k. Complaints about any unregistered/ un-regulated activity

To enhance investor satisfaction on complaint redressal, SEBI has put in place a 'Complaint Review facility' under SCORES wherein an investor if unsatisfied with the redressal may within 15 days from the date of closure of his complaint in SCORES opt for review of the complaint and the complaint shall be escalated.

In order to increases the awareness regarding online grievance redressal mechanisms, all Recognized Stock Exchanges / Depositories / Clearing Corporations are advised to display the following on the home page of their websites and mobile apps.

- Link / option to lodge complaint with them directly.
- Link to SCORES website/ link to download SCORES mobile app

10.2.2.2 Resolution of complaints by Stock Exchanges[46]

Stock Exchange shall ensure that the investor complaints shall be resolved within 15 working days from the date of receipt of the complaint. Additional information, if any, required from the complainant, shall be sought within 7 working days from the date of receipt of the complaint. The period of 15 working days shall be counted from the date of receipt of additional information sought. Stock Exchange shall maintain a record of all the complaints addressed/redressed within 15 working days from the date of receipt of the complaint/additional information. If complaint is not resolved within stipulated time frame, then the reason for non-redressal in given time frame shall also be recorded.

Stock Exchange shall resolve service related complaints at its end. However, in case the complainant is not satisfied with the resolution, the same may be referred to the Investor

[46] https://www.sebi.gov.in/legal/circulars/nov-2020/investor-grievance-redressal-mechanism_48105.html

Grievance Redressal Committee ("IGRC")/ Grievance Redressal Committee (GRC)[47], after recording the reasons in writing by the Chief Regulatory Officer of the Stock Exchange or any other officer of the Stock Exchange authorized in this behalf by the Managing Director. Service related complaints shall include non-receipt/ delay of Account statement, non-receipt/ delay of bills, closure of account/branch, technological issues, shifting/closure of branch without intimation, improper service by staff, freezing of account, alleged debit in trading account, contact person not available in Trading member's office, demat account transferred without permission etc. For Complaints related to trade, settlement and 'deficiency in services', resulting into any financial loss, the stock exchange shall resolve the complaint on its own as per the time lines prescribed. However, if complaint is not resolved amicably, the same shall be referred to the IGRC, after recording the reasons in writing by the Chief Regulatory Officer of the Stock Exchange or any other officer of the Stock Exchange authorized in this behalf by the Managing Director. It shall be the responsibility of the Stock Exchange to provide documents/ necessary information after collecting the same from the member and/ or the complainant and provide necessary assistance to IGRC/GRC to ensure resolution of complaints in a timely manner.

All Stock exchanges have an investor grievance department/Investor services department which looks into all the complaints/matters against the trading members registered with the Exchange. To facilitate early redressal of investor grievances, it is mandated to stock exchanges having nationwide terminals, functional stock exchanges having trading volumes, stock exchanges entering into MOUs with other exchanges and stock exchanges intending to recommence trading operations shall constitute Investor Grievance Redressal Committee (IGRC/GRC) at every investor service Centre. With a view to assist investors engaged in dispute resolution process, Stock Exchanges shall set up facilitation desks at all investor services centres as specified by SEBI from time to time. These facilitation desks would inter alia also assist investors in obtaining documents/details from Stock Exchanges wherever so required for making application to Investor Grievance Redressal Committee (IGRC/GRC) and filing arbitration.

To enable investors to lodge and follow up their complaints and track the status of redressal of complaints from anywhere, all Recognized Stock Exchanges including Commodity Derivatives Exchanges / Depositories are advised by SEBI to design and implement an online web based complaints redressal system of their own, which will facilitate investors to file complaints and escalate complaints for redressal through Grievance Redressal Committee (GRC), arbitration, appellate arbitration etc. in accordance with their respective byelaws, rules and regulations. The above redressal mechanism shall be implemented within 6 months from the issuance of issuance of the circular[48].

[47] SEBI vide circular SEBI/HO/MRD/DDAP/CIR/P/2020/16 dated January 28, 2020, has advise following: "Investor grievance redressal committee" shall be read as "Grievance redressal committee"
[48] SEBI circular SEBI/HO/MRD1/ICC1/CIR/P/2022/94 dated July 04, 2022.

10.2.3 Handling of complaint by Investor Grievance Redressal Committee

IGRC shall have a time of 15 working days to amicably resolve the investor complaint. IGRC shall adopt a two-fold approach i.e., for proceedings leading to direction to the member to render required service in case of service related complaints and proceedings leading to an order concluding admissibility of the complaint or otherwise in case of trade related complaints. In case the matter is not resolved through the conciliation process, IGRC shall decide claim value admissible to the complainant. Upon conclusion of the proceedings of IGRC i.e. in case claim is admissible to the complainant, Stock Exchanges shall block the admissible claim value from the deposit of the member as specified in this regard. The Stock Exchange shall give a time of 7 days to the member from the date of receipt of IGRC directions as mentioned above to inform the Stock Exchange whether the member intends to pursue the next level of resolution i.e., Arbitration. In case, the member opts for an Arbitration within 7 days but does not file Arbitration reference within 6 months or the member does not opt for arbitration, the Stock Exchange shall, release the blocked amount to the investor after the afore mentioned 7 days.

In case, awards is in favour of client and the Member opts for arbitration and where the claim value admissible to the investor/client is not more than Rs. 20 lakhs, the following steps shall be undertaken by the Stock Exchange:

a. In case the GRC order is in favour of the client then 50% of the admissible claim value or Rs. 2.00 lakhs (Rs. Two lakhs), whichever is less, should be released to the client from IPF of the Stock Exchange.
b. In case the arbitration award is in favour of the client and the member opts for appellate arbitration then a positive difference of, 50% of the amount mentioned in the arbitration award or Rs. 3.00 lakhs (Rs. Three lakhs), whichever is less, and the amount already released to the client at clause (a) above, shall be released to the client from IPF of the Stock Exchange.
c. In case the appellate arbitration award is in favour of the client and the member opts for making an application under Section 34 of the Arbitration and Conciliation Act, 1996 to set aside the appellate arbitration award, then a positive difference of, 75% of the amount mentioned in the appellate arbitration award or Rs. 5.00 lakhs (Rs. Five Lakhs), whichever is less and the amount already released to the client at clause (a) and (b) above, shall be released to the client from IPF of the Stock Exchanges.
d. Total amount released to the client through the facility of interim relief from IPF in terms of this circular shall not exceed Rs. 10.00 lakhs (Ten lakhs) in a financial year.
e. Before release of the said amounts from the IPF to the investor, the Stock Exchange shall obtain appropriate undertaking/ indemnity from the investor against the release of the amount from IPF, to ensure return of the amount so released to the investor in case the proceedings are decided against the investor.
f. If it is observed that there is an attempt by investor/client either individually or through collusion with Member(s) or with any other stakeholders, to misuse the provision, then without prejudice to the powers of the SEBI to take action, appropriate action in this regard shall be taken against any such person, by the Stock Exchange,

including disqualification of the person so involved from henceforth accessing the benefits under this provision.

g. In case the complaint is decided in favour of the investor after conclusion of the proceedings, then the amount released to the investor shall be returned to IPF from the blocked amount of the Member by the Stock Exchange and the rest shall be paid to the investor.
h. Stock Exchanges will devise a detailed procedure with regard to release of funds from IPF and recovery thereof and necessary formats of documentation.
i. In case the investor loses at any stage of the proceedings and decides not to pursue further, then the investor shall refund the amount released from IPF, back to the IPF. In case the investor fails to make good the amount released out of IPF then investor (based on PAN of the investor) shall not be allowed to trade on any of the Stock Exchanges till such time the investor refunds the amount to IPF. Further, the securities lying in the demat account(s) of the investor shall be frozen till such time as the investor refunds the amount to the IPF.
j. The Stock Exchanges may also resort to displaying the names of such investors on their websites if considered necessary.

With a view to address complaints regarding 'unauthorized trades' Stock Exchanges are advised to direct the Members to put in place the following:

a) In case the Member has made margin calls to the client and the client has failed to comply with these margin calls, then the contract notes issued by Member for transactions owing to non-compliance of such margin calls would bear a remark specifying the same.
b) The Member shall maintain a verifiable record of having made such margin calls and that the clients have not complied with the same.

The composition of the IGRC/GRC shall be as follows:

- The IGRC/GRC shall comprise of a single person for claims up to Rs. 25 Lakh, whereas, for claims above Rs. 25 Lakh, the IGRC/IGRP shall comprise of three persons.
- The IGRC/GRC shall comprise of independent persons with qualifications in the area of law, finance, accounts, economics, management or administration and experience in financial services, including securities market.
- Further, the three members Committee shall comprise of at least one technical expert for handling complaints related to technology issues (such as internet-based trading, algorithmic trading, etc.).
- The members of IGRC/GRC shall not be associated with a trading member in any manner.
- The disclosures and code of conduct prescribed under para 3.4 and 4 of SEBI circular Ref. No CIR/MRD/DSA/24/2010 dated August 11, 2010, shall be applicable, as far as may be, to members of IGRC/IGRP also.

Stock Exchanges shall empanel Grievance Redressal Committee members and no arbitrator/ appellate arbitrator shall be empaneled as IGRC/GRC member.

Timelines for complaint resolution process at Stock Exchanges against stock brokers[49]

S. No.	Type of Activity	Timelines for activity
1	Receipt of Complaint	Day of complaint (C Day).
2	Additional information sought from the investor, if any, and provisionally forwarded to stock broker.	C + 7 Working days
3	Registration of the complaint and forwarding to the stock broker.	C+8 Working Days i.e. T day
4	Amicable Resolution	T+15 Working Days
5	Refer to Grievance Redressal Committee (GRC), in case of no amicable resolution.	T+16 Working Days
6	Complete resolution process post GRC	T + 30 Working Days
7	In case where the GRC Member requires additional information, GRC order shall be completed within.	T + 45 Working Days
8	Implementation of GRC Order.	On receipt of GRC Order, if the order is in favour of the investor, debit the funds of the stock broker. Order for debit is issued immediately or as per the directions given in GRC order.
9	In case the stock broker is aggrieved by the GRC order, will provide intention to avail arbitration	Within 7 days from receipt of order
10	If intention from stock broker is received and the GRC order amount is upto Rs.20 lakhs	Investor is eligible for interim relief from Investor Protection Fund (IPF).The interim relief will be 50% of the GRC order amount or Rs.2 lakhs whichever is less. The same shall be provided after obtaining an Undertaking from the investor.
11	Stock Broker shall file for arbitration	Within specified time from the date of GRC recommendation
12	In case the stock broker does not file for arbitration within 6 months	The GRC order amount shall be released to the investor after adjusting the amount released as interim relief, if any.

[49]https://www.sebi.gov.in/legal/circulars/dec-2021/publishing-investor-charter-and-disclosure-of-investor-complaints-by-stock-brokers-on-their-websites_54402.html

Handling of Investor's claims / complaints in case of default of a Trading Member / Clearing Member (TM/CM)

Default of TM/CM

Following steps are carried out by Stock Exchange for benefit of investor, in case stock broker defaults:

- Circular is issued to inform about declaration of Stock Broker as Defaulter.
- Information of defaulter stock broker is disseminated on Stock Exchange website.
- Public Notice is issued informing declaration of a stock broker as defaulter and inviting claims within specified period.
- Intimation to clients of defaulter stock brokers via emails and SMS for facilitating lodging of claims within the specified period.

Following information is available on Stock Exchange website for information of investors:

- Norms for eligibility of claims for compensation from IPF.
- Claim form for lodging claim against defaulter stock broker.
- FAQ on processing of investors' claims against defaulter stock broker.
- Provision to check online status of client's claim.

In order to bring about transparency in the Investor Grievance Redressal Mechanism, it has been decided that all the Stock Exchanges / Depositories / Clearing Corporations shall disclose on their websites, the data on complaints received against them and redressal thereof, latest by 7thof succeeding month, as per the format specified by SEBI.

10.3 Investor Protection Fund

The Central Government, vide notification No. F. No. 14/4/SE/85 dated August 22, 1985, has stipulated the setting up of the Investor Protection Fund (IPF) by Stock Exchanges. This fund should take care of legitimate investment claims which are not of speculative nature of the clients of defaulting member(s). The Investor's Protection Fund is a fund established and maintained by the Exchanges with an aim to protect the interests of the clients of the trading members of the Exchange, who may have been declared defaulters or who may have been expelled, under the provisions of the Rules, Bye-laws and Regulations of the Exchange. The Investor Protection Fund/Customer Protection Fund (hereinafter referred to as IPF/CPF) shall be administered by way of a Trust created for the purpose. The Investors' Protection Fund may provide compensation against a genuine and bonafide claim made by any client, who has either not received the securities bought from a trading member for which the payment has been made by such client to the trading member or has not received the payment for the securities sold and delivered to the trading member or has not received any amount or securities which is/are legitimately due to such client from the trading member, who is either declared a defaulter or expelled by the Exchange or where the trading member, through whom such

client has dealt, is unable to get the securities rectified or replaced for the reason that the introducing trading member at the Exchange is either declared a defaulter or expelled by the Exchange, under the relevant Rules, Bye-laws and Regulations of the Exchange.

The claims of the investors/clients against the defaulter members during the specified period shall be eligible for compensation from the IPF/CPF and in no case the claims of a broker or an associate of the member broker of the Stock Exchange shall be eligible for compensation out of the IPF/CPF. The claims of the investors/clients arising out of speculative transactions shall not be eligible for compensation from the IPF/CPF. The claim should not be a sham or collusive. The IPF/CPF Trust may adopt the arbitration mechanism at the Stock Exchange to determine the legitimacy of the claims received from the claimants. The IPF/CPF Trust may also seek the advice of the Defaulters Committee to sanction and ratify the payments to be made to the investors.

Stock Exchanges are required to adhere to the guidelines provided by SEBI with regards to Constitution and Management of the IPF/CPF, Contribution to IPF/CPF, Eligibility of claims, Determination of Legitimate Claims, Threshold limits of claims, Disbursements of claims from the IPF/CPF, Utilization of investor protection fund etc. SEBI also through various had specified the Standard Operating Procedure enumerating the steps to be taken by the Stock Exchanges("SEs"),Clearing Corporations("CCs") and Depositories in cases where SE / CC is of the view that Trading Member/ Clearing Member is likely to default in repayment of funds or securities to its clients.

10.4 Arbitration

For any dispute between the member and the client relating to or arising out of the transactions in Stock Exchange, which is of civil nature, the complainant/ member shall first refer the complaint to the IGRC and/ or to arbitration mechanism provided by the Stock Exchange before resorting to other remedies available under any other law. For the removal of doubts, it is clarified that the sole arbitrator or the panel of arbitrators, as the case may be, appointed under the Stock Exchange arbitration mechanism may consider any claim relating to any dispute between a stock broker and client arising out of the transactions in stock exchange, as per law, and shall always be deemed to have the competence to rule on its jurisdiction. A complainant/member, who is not satisfied with the recommendation of the IGRC shall avail the arbitration mechanism of the Stock Exchange for settlement of complaints within three months from the date of IGRC recommendation.

The time period of three months mentioned in the previous sub-clause for filing arbitration shall be applicable only for the cases where the IGRC recommendation is being challenged. For any arbitration application received without going through IGRC mechanism, the above time period of three months shall not apply, and for such cases the limitation period for filing arbitration shall be governed by the law of limitation, i.e., The Limitation Act, 1963."

Arbitration, which is a quasi-judicial process, is an alternate dispute resolution mechanism prescribed under the Arbitration and Conciliation Act, 1996. The Exchanges prescribe the provisions in respect of arbitration and the procedure therein has been prescribed in the Regulations. A stock exchange shall provide an arbitration mechanism for settlement of disputes between a client and a member through arbitration proceedings in accordance with the provisions of this Circular read with Section 2(4) of the Arbitration and Conciliation, Act, 1996. Stock Exchange should comply with SEBI guidelines with regards to Arbitration mechanism. Arbitration aims at quicker legal resolution for the disputes. When one of the parties feels that the complaint has not been resolved satisfactorily either by the other party or through the complaint resolution process of the Exchange at the Investor Services Cell or the IGRC, the parties may choose the route of arbitration. Arbitration facility is provided at all centers which are specified by SEBI from time to time. SEBI has identified around 16 such centers where investor services as well arbitration facility are to be provided by stock Exchanges. In case award amount is more than Rs. 50 lakh (Rs. Fifty lakh), the next level of proceedings (arbitration or appellate arbitration) may take place at the nearest metro city, if desired by any of the party involved. The additional statutory cost for arbitration, if any, is to be borne by party desirous of shifting the place of arbitration."

The stock exchange shall have a set of fair and transparent criteria for inclusion of names in the panel of arbitrators. While deciding to include a particular person in the panel of arbitrators, the stock exchange shall take into account the factors like age, qualification in the area of law, finance, accounts, economics, management, or administration and experience in financial services, including securities market. There shall be separate panels for arbitration and appellate arbitration. Further, for appellate arbitration, at least one member of the panel should be a Retired Judge. In order to enhance transparency and also to provide choice to parties, Stock Exchanges/ Depositories shall disseminate information w.r.t. brief profile, qualification, areas of experience/ expertise, number of arbitration matters handled, pre-arbitration experience, etc. of the arbitrators on their website.

The list of arbitrators across all stock Exchanges are pooled together and is called the "Common Pool". This list which is grouped centre wise (centres as identified by SEBI), is made available to the investors on the stock Exchanges' websites. The applicants can choose any arbitrator for the required centre from the "Common Pool". If they fail to do so, the arbitrator will be chosen by an 'automatic process' which is a randomized computer-generated selection process. The 'Automatic Process' will send a system generated, real time alert (SMS, Email, etc.) to all entities involved in the particular case. Further, the communication for the appointment of the Arbitrator will be sent immediately and, in any case, not later than the next working day from the day of picking of the Arbitrator. This communication will be sent by the stock exchange on which the dispute had taken place, to all concerned entities including clients, arbitrators, members, stock exchanges etc. In case of any probable conflict of interest in an arbitration reference being assigned to any Arbitrator, the Arbitrator will have to upfront decline the arbitration

reference. After the said arbitrator declines, the 'automatic process' will pick the name of another Arbitrator.

Along with an arbitration application the claimant may need to submit necessary document / record as given below:

- Statement explaining the dispute and the nature of transactions, separating delivery-based transaction and squared-off transactions.
- Contract Notes pertaining to the transaction in dispute.
- Bills issued/received by the applicant.
- Copy of the accounts statement given by broker.
- Documents pertaining to receipt/delivery of shares.
- Any other documents in support of the claim.
- An accurate list of the documents produced.
- PAN/ GIR No. of the applicant.
- Certified copy of the Balance Sheet of the applicant showing the dues.
- Copy of acknowledgement of the latest Income Tax Return.
- Margin Statement
- Member Constituent Agreement
- Risk Disclosure Document etc.

In order to assist the arbitrators in pronouncing comprehensive and speedy awards, Stock Exchanges/ Depositories shall make necessary arrangements in terms of hardware viz., computer, scanner, printer, etc. and required software's at exchange offices/ Investor Service Centers (ISCs) to facilitate the clients to type/ convert their documents into electronic format/ soft copy. Such electronic format/ soft copies shall be provided to the arbitrators along with original submissions in physical copies. The limitation period (currently three years) for filing an arbitration reference shall be governed by the law of limitation, i.e., The Limitation Act, 1963. Arbitration for claims up to Rs. 25 lakh is decided by a sole arbitrator while a claim of above Rs. 25 lakh is dealt by a panel of three arbitrators. The stock exchange has to ensure that the process of appointment of arbitrator(s) is completed within 30 days from the date of receipt of application from the applicant. After hearing both the parties and after examining all the relevant documents and the submissions given by the parties, the arbitrators close the arbitration reference. Then, the arbitrators give the award. As per the Code of Conduct for Arbitrators specified by SEBI, Arbitrator shall pass reasoned and speaking arbitral awards.

In case the arbitral/appellate award is in favour of the client, the stock exchange shall, on receipt of the same, debit the amount of the award from the security deposit of the member (against whom an award has been passed) and keep it in a separate escrow account. The stock exchange shall implement the arbitral award, by making payment to the client, along with interest earned on the amount that has been set aside as soon as the time for preferring an appeal before the appellate panel of arbitrators has expired and no appeal has been preferred. In order to safeguard the interest of the parties

involved in arbitration and to ensure speedy implementation of the arbitration award, the rate of interest on the award passed by arbitrators shall be in compliance with Arbitration and Conciliation Act, 1996.

The arbitration reference shall be concluded by way of issue of an arbitral award within four months from the date of appointment of arbitrator(s). However, the Managing Director/Executive Director of the stock exchange may for sufficient cause extend the time for issue of arbitral award by not more than two months on a case to case basis after recording the reasons for the same. Stock Exchanges/ Depositories shall create a common database of defaulting clients accessible to members/ depository participants across the Stock Exchanges/ Depositories. For this purpose, a client may be identified as defaulter if the client does not pay the award amount to the member/ depository participant as directed in the IGRC/arbitration/ appellate arbitration order and also does not appeal at the next level of redressal mechanism within the timelines prescribed by SEBI or file an application to court to set aside such order in accordance with Section 34 of the Arbitration and Conciliation Act, 1996 (in case of aggrieved by arbitration/ appellate award).

10.4.1 Arbitration Fees

In order to have faster implementation of award and to discourage delayed filing of arbitrations by members, the fee structure (exclusive of statutory dues – stamp duty, GST etc.) for filing arbitration reference shall be as follows:

Table: Arbitration Fees[50]

Amount of claim /counter claim (whichever is higher)	**If claim is filed within six months from the date of dispute**	**If claim is filed after six months from the date of dispute or after one month from the date of IGRC order, whichever is later**	**If the claim is filed beyond the timeline prescribed in column 3 (only for member)**
≤ Rs. 10,00,000	1.3% subject to a minimum of Rs. 10,000	3.9% subject to a minimum of Rs. 30,000	Additional fee of Rs. 3,000/- per month over and above fee prescribed in column 3
>Rs.10,00,000 - ≤ Rs. 25,00,000	Rs. 13,000 plus 0.3% amount above Rs. 10 lakh	Rs. 39,000 plus 0.9% amount above Rs. 10 lakh	Additional fee of Rs. 6,000/- per month over and above fee prescribed in column 3

[50] SEBI Circular Ref. No. SEBI/HO/DMS/Cir/P/2017/15 Dated February 23, 2017

≥ Rs. 25,00,000	Rs. 17,500 plus 0.2% amount above Rs. 25 lakh subject to a maximum of Rs. 30,000	Rs. 52,500 plus 0.6% amount above Rs. 25 lakh subject to maximum of Rs. 90,000	Additional fee of Rs. 12,000/- per month over and above fee prescribed in column 3

The filing fee will be utilized to meet the fee payable to the arbitrators. A client, who has a claim / counter claim upto Rs.20 lakh(Rs. Twenty lakh) and files arbitration reference, will be exempted from payment of the fees specified above. Excess of filing fee over fee payable to the arbitrator, if any, to be deposited in the IPF of the respective stock exchange. In all cases except the additional fees charged from the trading members, if the claim is filed beyond the timeline prescribed in column 3, (only for member), on issue of the arbitral award the stock exchange shall refund the deposit to the party in whose favour the award has been passed. The additional fees charged from the trading members, if the claim is filed beyond the timeline prescribed in column 3, (only for member), if any, to be deposited in the IPF of the respective Stock Exchange." A party filing an appeal before the appellate panel shall pay a fee not exceeding Rs. 54,000, as may be prescribed by the stock exchange, in addition to statutory dues (stamp duty, GST, etc.) along with the appeal. In case the party filing the appeal is a client, the additional expenses shall be borne by the client and Exchange equally.

10.4.2 Appellate Arbitration

A party aggrieved by an arbitral award may appeal to the appellate panel of arbitrators of the stock exchange against such an award. An appeal before the appellate panel of arbitrators may be filed within one month from the date of receipt of arbitral award. There shall be separate panels for arbitration and appellate arbitration. Further, for appellate arbitration, at least one member of the panel should be a Retired Judge. The appellate panel consists of three arbitrators who are different from the ones who passed the arbitral award appealed against. The stock exchange shall ensure that the process of appointment of appellate panel of arbitrators is completed within 30 days from the date of receipt of application for appellate arbitration. The appeal should be disposed of within three months from the date of appointment of appellate panel of such appeal by way of issue of an appellate arbitral award. The Managing Director/Executive Director of the stock exchange may for sufficient cause extend the time for issue of appellate arbitral award by not more than two months on a case to case basis after recording the reasons for the same. A party aggrieved by the appellate arbitral award may file an application to the Court of competent jurisdiction in accordance with Section 34 of the Arbitration and Conciliation Act, 1996. Members shall convey their intention to Stock Exchanges within 7 days of receipt of the award, as regards whether such Members desire to challenge the arbitration award/appellate arbitration award in Court or not.

SEBI advised Stock Exchanges to use hybrid mode (i.e., online and offline) for conducting GRC and arbitration / appellate arbitration process.

10.5 Execution of Power of Attorney (PoA) by the Client in favour of the Stock Broker / Stock Broker and Depository Participant

SEBI vide circular no. CIR/MRD/DMS/13/2010 dated April 23, 2010, and circular no. CIR/MRD/DMS/28/2010 dated August 31, 2010, has issued guidelines and clarification for execution of Power of Attorney (PoA) by the client favouring Stock Broker / Stock Broker and Depository Participant to standardize the norms to be followed by stock brokers/ stock broker and depository participants while obtaining PoA from the clients. However, it has been observed that PoA is invariably obtained from the investor as part of the KYC and account opening process. Such PoA executed by clients has further found to have been misused by the stock brokers by taking authorization even for activities other than activities specified in SEBI circular. SEBI vide circular "Execution of Power of Attorney (PoA) by the Client in favour of the Stock Broker / Stock Broker and Depository Participant" dated August 27, 2020, has reiterated the following:

I. PoA is optional and should not be insisted upon by the stock broker / stock broker depository participant for opening of the client account.

II. PoA executed in favour of stock broker / stock broker depository participant by the client shall be utilized
    a. For transfer of securities held in the beneficial owner accounts of the client towards Stock Exchange related deliveries / settlement obligations arising out of trades executed by clients on the Stock Exchange through the same stock broker.
    b. For pledging / re-pledging of securities in favour of trading member (TM) / clearing member (CM) for the purpose of meeting margin requirements of the clients in connection with the trades executed by the clients on the Stock Exchange.
    c. For limited purpose to apply for various products like Mutual Funds, Public Issues (shares as well as debentures), rights, offer of shares, tendering shares in open offers etc.

III. For limited purpose to transfer of funds from the bank account(s) of the clients for the following:
    a. For meeting the settlement obligations of the client(s)/ margin requirements of the client(s) in connection with the trades executed by the clients on the stock exchange through the same Stock Broker.
    b. For recovering any outstanding amount due from the client(s) arising out of clients trading activities on the stock exchanges through the same Stock Broker.
    c. For meeting obligations arising out of the client subscribing to such other products/facilities/services through the Stock Broker like Mutual Funds, Public Issues (shares as well as debentures), rights, offer of shares etc.
    d. Towards monies/fees/charges, etc. due to the Stock Broker/Depository Participant/ Principal payable by virtue of the client using/subscribing to any of the facilities/services availed by the client at his/her instance.

IV. All off-market transfer of securities shall be permitted by the Depositories only by execution of Physical Delivery Instruction Slip (DIS) duly signed by the client himself or by way of electronic DIS.

10.5.1 Execution of 'Demat Debit and Pledge Instruction' (DDPI) for transfer of securities towards deliveries / settlement obligations and pledging / re-pledging of securities[51]

In order to make the process more transparent and simpler, the two conditions as specified in paragraphs II (a) & (b) of section 10.5, is made part of a separate document viz. 'Demat Debit and Pledge Instruction'(DDPI), under which the clients shall explicitly agree to authorize the stock broker/stock broker and depository participant to access their BO account for the limited purpose of meeting pay-in obligations for settlement of trades executed by them. The DDPI shall serve the same purpose of PoA and significantly mitigate the misuse of PoA. The use of DDPI shall be limited only for the two purposes as mentioned in paragraph II (a) & (b) of section 10.5. The client may use the DDPI or opt to complete the settlement by issuing physical Delivery Instruction Slip (DIS) or electronic Delivery Instruction Slip (eDIS) themselves. Hence, with the implementation of this circular, PoA shall no longer be executed for the conditions specified in paragraph II (a) & (b) of section 10.5. For further information participants may refer SEBI circular.

10.6 Risk Disclosure to Client and KYC

10.6.1 Client Onboarding and KYC

This refers only to the opening of accounts for new clients. There are certain procedures to be followed before the account can be opened and the broker can execute the orders of the client. The standard documents which form a part of the account opening kit are:

1) **Client Account Opening Form** which is in two parts. a) Know Your Client (KYC) form capturing the basic information about the client and instruction/check list to fill up the form and b) Additional Document capturing additional information about the client related to trading account.
2) Document stating the **Rights & Obligations of stock broker** and client for trading on Exchanges (including additional rights & obligations in case of internet/wireless technology based trading).
3) Uniform Risk Disclosure Documents (RDD) for all segments/Exchanges detailing risk associated with dealing in the securities market.
4) Guidance Note detailing Do's and Don'ts for trading on Exchanges for the education of the investor.
5) Document describing the Policies and Procedures of the stock broker

[51] https://www.sebi.gov.in/legal/circulars/apr-2022/execution-of-demat-debit-and-pledge-instruction-ddpi-for-transfer-of-securities-towards-deliveries-settlement-obligations-and-pledging-re-pledging-of-securities_57546.html

6) A tariff sheet specifying various charges, including brokerage, payable by the client to avoid any disputes at a later date.

KYC is an acronym for "Know your Client", a term commonly used for Customer Identification Process. SEBI has prescribed certain requirements relating to KYC norms for Financial Institutions and Financial Intermediaries including Mutual Funds and Stock Brokers to 'know' their clients. This entails verification of identity and address, financial status, occupation and such other personal information as may be prescribed by guidelines, rules and regulation.

SEBI in consultation with Unique Identification Authority of India (UIDAI) also allows brokers to accept e-KYC service provided by UIDAI as a valid process for KYC verification. The information containing relevant client details and photograph made available from UIDAI as a result of e-KYC process shall be treated as sufficient Proof of Identity and Address of the client. However, the client shall have to authorize the intermediary to access his data through UIDAI system. The intermediary shall perform verification of the client with UIDAI through biometric authentication (fingerprint or iris scanning). Accessing the details enabling client identification and authentication from UIDAI based on client authorization on voluntary basis intermediaries who utilizes the services of KYC Services Agencies would be registered as KYC User Agencies with UIDAI.

Know Your Customer (KYC) and Customer Due Diligence (CDD) policies as part of KYC are the foundation of an effective Anti-Money Laundering process. The KYC process requires every SEBI registered intermediary to collect and verify the Proof of Identity (PoI) and Proof of Address (PoA) from the investor. The provisions as laid down under the Prevention of Money-Laundering Act, 2002, Prevention of Money-Laundering (Maintenance of Records) Rules, 2005, SEBI Master Circular on Anti Money Laundering (AML) dated October 15, 2019, and relevant KYC / AML circulars issued from time to time shall continue to remain applicable. Further, the SEBI registered intermediary shall continue to ensure to obtain the express consent of the investor before undertaking online KYC. The broker must ensure that the clients fill-up the KYC form and submit it to them. There are separate forms for individuals and non-individuals. Brokers must also ensure that the documents like PAN, proof of address document, proof of identity, bank account details, authority letter to settle account etc. are submitted along with the KYC forms by the clients. PAN is the sole identification number for all participants transacting in securities market, irrespective of the amount of transactions. The Broker while onboarding a client should satisfy himself about Know your Customer (KYC) norms and KYC documents of the client.
With a view to allow ease of doing business in securities market, SEBI vide its circular has allowed use of technology innovations which can facilitate online KYC.[52] Some of them are given below:

[52]https://www.sebi.gov.in/legal/circulars/apr-2020/clarification-on-know-your-client-kyc-process-and-use-of-technology-for-kyc_46565.html

- The eSign mechanism of Aadhaar shall be accepted in lieu of wet signature on the documents provided by the investor. Even the cropped signature affixed on the online KYC form under eSign shall also be accepted as valid signature.
- Investor's KYC can be completed through online/App based KYC, in-person verification through video, online verification of Officially Valid Document (OVD) / other document under eSign as per procedure laid down the in the above circular.
- SEBI registered intermediaries are allowed to implement their own Application (App) for undertaking online KYC of investors.
- To enable ease of completing IPV (In person verification) of an investor, intermediary may undertake the VIPV (Video IPV) of an individual investor through their app.
- IPV/ VIPV would not be required when the KYC of the investor is completed using the Aadhaar authentication / verification of UIDAI. IPV / VIPV shall not be required by the Registered Intermediaries when the KYC form has been submitted online, documents have been provided through digi-locker or any other source which could be verified online.

The stock broker shall have documentary evidence of financial details provided by the clients who opt to deal in the derivative segment. In respect of other clients, the stock broker shall obtain the documents in accordance with its risk management system.
List of Illustrative documents

- Copy of ITR Acknowledgement
- Copy of Annual Accounts
- In case of salary income - Salary Slip, Copy of Form 16
- Net-worth certificate
- Bank account statement for last 6 months
- Copy of Holding statement of de-mat account
- Any other relevant documents substantiating ownership of assets
- Self-declaration along with relevant supporting

SEBI Master Circular on Anti Money Laundering (AML) dated October 15, 2019, has advised member to categorized client as Low Risk, Medium Risk and High Risk based on the due diligence or KYC documents. By classifying the clients under various risk categories, effective monitoring and due diligence can be applied to thwart any illegal/unlawful transactions. The risk category of the client is based on several parameters such as location of client, nature of business activity, volume and value of turnover, nature of transaction, manner of payments, etc. Low risk clients are those who have a respectable social and financial standing and transactions and dealings are satisfactory with timely payment and delivery. Medium risk clients are generally those who indulge in speculative transactions in excess of their known sources of income. High

risk clients are those with a history of default and their financial status is suspect. The following clients' onboarding need enhanced due diligence and close monitoring:
(1) Non-face to face client
(2) Clients with multiple accounts in similar names and large number of accounts having common parameters such as common partners/ directors/ promoters/ address/ email address/ telephone numbers or authorized signatory
(3) Unexplained transfers between such multiple accounts
(4) Unusual activity compared to past transactions and use of different accounts by client alternatively
(5) Sudden activity in dormant accounts.
The list is not exhaustive. It is upon member to have a robust framework to identify clients with high risk which may need to go through enhanced due diligence.

Following are the additional requirements as per current regulatory framework of SEBI (KYC Registration Agency) Regulations, 2011:

- All members have to be registered with any one or more KRAs registered by SEBI as per the SEBI KRA Regulations 2011.
- KYC for New Clients: a) The Member is to perform the initial due diligence of the new client whose KYC data are not available with the KRAs, upload the KYC information for both individuals and non-individuals with proper authentication on the system of the KRA, furnish the scanned images of the KYC documents to the KRA, and retain the physical KYC documents.
- The Member is to furnish the physical KYC documents or authenticated copies thereof to the KRA, whenever so desired by the KRA.
- A new client can be allowed to start trading / dealing on the exchange platforms through the member as soon as the client is registered by completing the necessary KYC documentation process. However, the Member shall be under obligation to upload KYC details with proper authentication on the system of the KRA, within 10 days of receipt of the KYC documents from the client.
- KYC for existing Clients: (a) With respect to the existing clients, who are presently registered with the members but whose KYC data are not available with any of the KRAs, the member shall upload the KYC information with proper authentication on the system of the KRA, furnish the scanned images of the KYC documents to the KRA and retain the physical KYC documents.
- The members shall also upload the KYC details about their existing clients which are missing/not available with them by calling for the same from their clients.
- The member shall not use the KYC data of a client obtained from the KRA for purposes other than it is meant for; nor shall it make any commercial gain by sharing the same with any third party including its affiliates or associates.
- The Member shall have the ultimate responsibility for the KYC of its clients, by undertaking enhanced KYC measures commensurate with the risk profile of its clients.
- The member shall, at all times, have adequate internal controls to ensure the security and authenticity of data uploaded.

Central Know Your Client (CKYC)

Government of India has authorized the Central Registry of Securitization and Asset Reconstruction and Security interest of India (CERSAI), set up under subsection (1) of Section 20 of Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002, to act as, and to perform the functions of, the Central KYC Records Registry under the PML Rules 2005, including receiving, storing, safeguarding and retrieving the KYC records in digital form of a "client", as defined in clause (ha) sub-section (1) of Section 2 of the Prevention of Money Laundering Act, 2002 . As per the 2015 amendment to PML (Maintenance of Records) Rules, 2005 (the rules), every reporting entity shall capture the KYC information for sharing with the Central KYC Records Registry in the manner mentioned in the Rules, as per the KYC template for "individuals" finalised by CERSAI. CKYC refers to Central KYC (Know Your Customer), an initiative of the Government of India which aims to have a system which allows investors to complete their KYC only once before interacting with various entities across the financial sector. CKYC is managed by CERSAI (Central Registry of Securitization Asset Reconstruction and Security Interest of India), which is authorized by Government of India to function as the Central KYC Registry (CKYCR). Thus, CKYCR will act as centralized repository of KYC records of investors in the financial sector with uniform KYC norms and inter-usability of the KYC records across the sector. CKYC requires additional information (for e.g. - investor's maiden name, mother's name, FATCA information etc.) to be collected and submitted to CERSAI for completion of the CKYC formalities of an investor. Initially, CKYC is applicable only to Individuals (both Resident Individuals and Non-Resident Individuals (NRIs)). CKYCR, in its communication no. CKYC/2020/11 dated January 04, 2021, has specified that since CKYCR is fully operational for individual clients, it has been decided to extend CKYCR to Legal Entities (LE) as well. Accordingly, trading members required to upload the KYC records of LE accounts opened on or after April 01, 2021 on to CKYCR in terms of Rule 9 (1A) of the Prevention of Money Laundering (Maintenance of Records) Rules, 2005.

Unique Client Code (UCC)

In 2001, SEBI made it mandatory for brokers to use unique client codes for all clients.[53] Once the formalities of KYC and other details thereon are complete, each client is assigned a unique client code (UCC) by the broker. This acts as an identity for the client with respect to the broker. SEBI has made it mandatory for all the brokers to use unique client codes for all clients while entering orders on their behalf. It is also mandated by SEBI, that the unique client code should be mapped with the PAN number of the client.

The broker has to provide the Stock Exchange(s) with the UCC and the PAN details of the client(s) before entering into any trade for the client. The Stock Exchanges provide an upload facility to the brokers through which the UCC and other client details are uploaded on the stock exchange platform on a regular basis. If the broker fails to register the unique client code with the Exchange, he is liable to be penalized.

[53] SEBI Circular no: SMDRP/Policy/CIR-39/2001 dated July 18, 2001

10.6.2 Risk Disclosure

There are many risks involved while trading in Exchange traded derivatives market. It is very important that client should undertake transactions only if understand the nature of the relationship into which you are entering and the extent of their exposure to risk. Client should make aware that trading in Equity shares, derivatives contracts have varying element of risk and is generally not an appropriate avenue for someone of limited resources/limited investment and/or trading experience and low risk tolerance. Client needs to carefully consider whether such trading is suitable for him in the light of his financial condition. Further, client is solely responsible for adverse consequences or loss while trading on stock Exchanges. Client should aware that there can be no guarantee of profits or no exception from losses while executing orders for purchase and/or sale of a derivative contract being traded on stock exchanges. Hence, it is very important that before onboarding client, member should ensure that the client signs a Risk Disclosure Document. By signing, client agrees that he is aware of all the risks involved in derivatives trading.

The Risk Disclosure Document should specify broadly all the key risks while dealing / trading in derivatives markets, specifically mentioning about the following:

a. Price Fluctuation / Market Risk in Spot, Futures, Options or any other derivatives markets
b. Macroeconomic scenarios leading to unexpected price movement arising out of foreign exchange movement, government / central bank policy, global scenario's, etc.
c. Sudden liquidity dries down on any contract leading to adverse movement in prices or higher transaction costs or inability to unwind the position
d. Basis risk vis-à-vis spot prices/rates
e. Risks of position remaining unhedged
f. Risk in short positions in options
g. Broker's credit risk i.e., Counterparty risk
h. Risks arising out of technical snags, operational issues or technology related issues at the brokers' end, Exchange's servers or connectivity related issues in web trade
i. Other penalties which may arise due to open position limit breaches or margin short fall arising out of sharp fluctuation in market prices

10.6.3 Risks faced by investors trading in Exchange Traded Currency Derivatives Markets

- Market Risk: Market risk is the risk of losses on financial investments caused by adverse movement of currency prices.
- Liquidity Risk: Liquidity refers to the ability of market participants to buy and/or sell securities / derivatives contracts expeditiously at a competitive price and with minimal price difference. There may be a risk of lower liquidity in some derivatives contracts as a result, client order may only be partially executed, or may be executed with relatively greater price difference or may not be executed at all.
- Leverage Risk: In Exchange Traded Currency Derivatives (ETCD), the amount of margin is small relative to the value of the derivatives contract, so the transactions are

'leveraged'. ETCD, which is conducted with a relatively small amount of margin, provides the possibility of great profit or loss in comparison with the margin amount. Due to which transactions in derivatives carry a high degree of risk.

- Execution Risk: There is risk that the buy or sell order placed in ETCD may not get executed at the desired price due to higher price volatility or due to type of order place. This may result in slippages.
- Basis risk: Basis risk is the potential risk that arises from mismatches in a hedged position. Basis risk occurs when a hedge is imperfect, so that losses are not exactly offset by the hedge. Basis risk can arise from standardization of derivatives contract for amount and expiry date. For example, you need to hedge an exposure of USD 9500, which requires the futures contracts of 9500 / 1000 = 9.5. Since we can buy or sell only in integral multiples, we need to buy or sell either nine or ten contracts. The former leads to under-hedging and the latter, to over-hedging. Second, the derivatives contract expires on every Friday day of the week or two working days prior to the last business day of the expiry month. If the exposure to be hedged has maturity of some other day in the month, there will be mismatch in the maturity. The discrepancy in the amount and maturity of exposure and the derivatives contract leaves a residual risk called basis risk. The basis risk may also arise in case the price movement in derivatives contract is not in proportionate to price movement in underlying asset.
- Risk due to cash settlement: Current ETCD contracts are cash settled, leads to imperfect hedging or arbitrage.

The list is not exhaustive. It is upon member / client to have a robust framework to identify various risk which may need to go through enhanced due diligence.

10.6.4 Suspicious Transaction Reporting (STR) to Financial Intelligence Unit (FIU)

SEBI Intermediaries including brokers shall monitor transactions of the client to ensure that those are not suspicious from money laundering or tax evasion point of view. The trades like reversal trade, profit transfer trades or trades associated with dabba trades are some of the examples of suspicious trades. FIU is a separate intelligence arm under finance ministry. The brokers are expected to report such transactions to FIU through online mechanism provided by FIU. Though, the Exchange through its surveillance mechanism raise a suspicion about a client's transactions, it is the duty of concerned broker to identify those suspicious transactions through its regular monitoring and report them to FIU. The brokers are not supposed to inform the client about this reporting, as it will lead to tipping-off information to client, which is illegal and not allowed. At the same time, members should not depend solely upon the direction from Exchanges' surveillance mechanism but are required to have their own robust controls and procedures.

Intermediaries shall carefully go through all the reporting requirements and formats that are available on the website of FIU – IND under the Section Obligation of Reporting Entity – furnishing information–reporting format. (https://fiuindia.gov.in/files/downloads/Filing_Information.html). These documents

contain detailed directives on the compilation and manner/procedure of submission of the reports to FIU-IND. The Suspicious Transaction Report (STR) shall be submitted within 7 days of arriving at a conclusion that any transaction, whether cash or non-cash, or a series of transactions integrally connected are of suspicious nature. The Principal Officer shall record his reasons for treating any transaction or a series of transactions as suspicious. It shall be ensured that there is no undue delay in arriving at such a conclusion. The Non-Profit Organization Transaction Reports (NTRs) for each month shall be submitted to FIU-IND by 15th of the succeeding month.

Appendix A: Sample Questions

1. Which term best describes EUR currency?
    a. Managed float
    b. Pegged to USD
    c. Pegged to gold
    d. Free floating

2. Which of the following is true?
    a. Base currency is the first currency in a currency pair
    b. Base currency is the second currency in a currency pair
    c. Quotation currency is the first currency in a currency pair
    d. Exchange rates are quoted in per unit of quotation currency

3. Assume you are an exporter, and you want to sell USD that you have received as export remittance. The bank quotes a price of 75.10 / 75.12 for USDINR. At what price can you sell one unit of USD?
    a. 75.12
    b. 75.11
    c. 75.09
    d. 75.10

4. Internationally following is the most traded currency pair.
    a. EURGBP
    b. EURUSD
    c. USDJPY
    d. GBPUSD

5. GBPUSD price as 1.3300 / 1.3325 and USDINR as 75.64 / 75.65, the price for GBPINR works out to be.

    a. 100.6012 / 100.8036
    b. 100.7903 / 100.6145
    c. 56.76/56.88
    d. 56.88/56.76

6. Which of the following is the role of derivatives?
    a. Financing
    b. Cash or liquidity management
    c. Risk management
    d. All of the above

7. Participant who take position in Currency Derivatives to reduce currency risk
    a. Hedgers

b. Speculators
c. Arbitragers
d. None of the above

8. Which of the following is derivatives?
    a. Currency Forward
    b. Currency Swaps
    c. Currency Futures
    d. All of the above

9. Following derivatives contracts are traded only on Exchanges?
    a. Currency Options
    b. Currency Swaps
    c. Currency Futures
    d. FX Swaps

10. Which of the following derivatives have the largest market size globally?
    a. Equity derivatives
    b. Interest rate derivatives
    c. Currency derivatives
    d. Commodity derivatives

11. What is the settlement method for USDINR futures?
    a. Cash
    b. Physical / Based on Delivery
    c. Can be cash or physical
    d. None of the above

12. Which of the following is the last trading day for EURINR monthly futures contract?
    a. One business days after the first business day of the Expiry Month
    b. Two working days prior to the last business day of the expiry month
    c. Seven business days before the last business day of the Expiry Month
    d. Last Thursday of Contract Month

13. One year interest rate is 4% in US and 1% in UK. If current GBPUSD spot rate is 1.5, which of the following could be closest to one year future rate of GBPUSD?
    a. 1.5446
    b. 1.6005
    c. 1.7325
    d. 1.6500

14. Person goes short in a GBPINR futures contract at Rs.99.75 and on expiry GBPINR reference rate is Rs. 100.75, he will _____?
    a. Make profit of Rs. 1

b. Make loss of Rs. 1
c. No profit no loss
d. None of the above

15. If participant buy 10 lot of JPYINR futures at Rs. 65 then contract value _____?
a. Rs. 6,50,000
b. Rs. 13,00,000
c. JPY 65000
d. JPY 130000

16. The price which option buyer pays to option seller to acquire the right is called as _____.
a. Agreed Price
b. Strike Price
c. Sell Price
d. Premium

17. Option buyer faces _____ risk and option seller faces _____ risk.
a. Limited, Unlimited
b. Limited, Limited
c. Unlimited, Limited
d. Unlimited, Unlimited

18. An option is _____, if on exercising it, the option buyer gets positive cash flow.
a. In the money
b. At the money
c. Out of the money
d. None of the above

19. The difference between option premium and intrinsic value is _____.
a. Strike Price
b. Time Value
c. Expiry Value
d. Option Value

20. A client buys a USD call option at strike of 75.5 and pays a premium of INR 0.3. What would be the breakeven point for the transaction?
a. 75.2
b. 75.6
c. 76.1
d. 75.8

21. In OTC market, one month USDINR is quoting at 74.75/75.00 and futures for same maturity is quoting at 75.50/75.60. Which of the following describes possible arbitrage trade and possible arbitrage profit per USD if the arbitrage trade is carried until maturity?
    a. Sell USDINR forward in OTC and buy in futures, 85 paise
    b. Buy USDINR forward in OTC and sell in futures, 60 paise
    c. Buy USDINR forward in OTC and sell in futures, 75 paise
    d. Buy USDINR forward in OTC and sell in futures, 50 paise

22. In Bullish vertical spread using put strategy, trader _____?
    a. buy put option with lower strike and sell a put option with higher strike
    b. buy put option with higher strike and sell a put option with lower strike
    c. buy call with lower strike and sell a put option with higher strike
    d. None of the above

23. If you expect the USD will appreciate against INR in future, today you should _____.
    a. Buy USDINR futures
    b. Sell USDINR futures
    c. Buy USDINR put option
    d. Sell USDINR call option

24. A person has invested INR 100,000 in an Indian corporate bond for a year giving a return of 16% in one year. The person plans to use the proceeds from the maturity of corporate bond to fund his son's education on US. At the time of investing in the corporate bond, USDINR spot rate was 70 and one year premium was 4%. The person decides to hedge currency risk using USDINR one year futures. At the end of one year, how many USD can this person remit to his son.
    a. 1320
    b. 1417
    c. 1083
    d. 1593

25. 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 120,000. The investor decided to sell off his portfolio and repatriate the capital and profits to India. At the time of investing abroad the exchange rate was 74.5 and at the time of converting USD back into INR, he received an exchange rate of 76.00. How much is the return on investment in USD and in INR respectively?
    a. 20%, 16.65%
    b. 20%, 21.42%
    c. 20%, 20%
    d. 20%, 18%

26. Client can place order through following options _____?
    a. Phone
    b. Internet
    c. Direct Market Access
    d. All of the above

27. A Buy or a Sell order(s) which is/ are lying unmatched in the order book are known as _____.
    a. Active Orders
    b. Passive Orders
    c. Best Orders
    d. None of the above

28. A _____ order is classified as price related condition.
    a. Market
    b. Day
    c. IOC
    d. None of the above

29. Due to denial of matched orders by client/s, which type of risk arises?
    a. Operational
    b. Market
    c. Regulatory
    d. None of the above

30. If the base rate of GBPINR one month future is Rs. 100 then its operating range will be _____.
    a. 103 & 97
    b. 104 & 96
    c. 105 & 95
    d. 106 & 96

31. In the clearing corporation, clearing is carried out by a process called _____ netting?
    a. Multilateral
    b. Closed
    c. Open
    d. Gross

32. Interoperability of clearing corporation framework is allowed all the products available in the Indian securities markets, EXCEPT:
    a. Commodity Derivatives
    b. Interest rate derivatives

c. Currency Derivatives
d. Cash Market

33. Daily Mark to market settlement of Exchange traded currency future contract is …….
    a. Cash settled
    b. Adjusted to liquid asset
    c. Both a & b
    d. None of the above

34. Position limit for EURUSD at trading member level is?
    a. Higher of 15% of the total open interest or EUR 100 million
    b. Lower of 15% of the total open interest or EUR 100 million
    c. Higher of 6% of the total open interest or EUR 10 million
    d. Higher of 15% of the total open interest or EUR 50 million

35. As a Risk Reduction Measure, all unexecuted orders shall be cancelled once stock broker breaches ____ collateral utilization level.
    a. 90 percent
    b. 75 percent
    c. 50 percent
    d. 80 percent

36. What is the Base Minimum Capital requirement specified by the SEBI for only Proprietary trading without Algorithmic trading (Algo)?
    a. Rs. 25 Lakhs
    b. Rs. 20 Lakhs
    c. Rs. 50 Lakhs
    d. Rs. 10 Lakhs

37. Which of the following acts is mainly responsible for governing the securities trading in India?
    a. FEMA, 1999
    b. SC(R)A, 1956
    c. SEBI Act
    d. RBI Act

38. Which of the following segments of market participants are allowed to trade in currency futures?
    a. Individual
    b. NRIs
    c. Corporates
    d. All of the above

39. Which of the following segments of market participants are allowed to become member of Currency Derivatives of Exchange?
    a. Individual
    b. AD Category I Bank
    c. Corporates
    d. All of the above

40. Position limits guideline for Exchange traded interest rate derivatives is provided by _____
    a. FEMA
    b. SEBI
    c. Ministry of Finance
    d. Stock Exchanges

41. Guidance Notes on Accounting for Derivatives Contract recognise following type of hedging for hedge accounting.
    a. fair value hedge accounting model
    b. The cash flow hedge accounting model
    c. The hedge of a net investment in a foreign operation
    d. All of the above

42. Which of the following accounting standards of Institute of Chartered Accountants of India (ICAI) defines the accounting for derivatives?
    a. AS 6
    b. AS 10
    c. AS 9
    d. AS 30

43. Usually, income from Exchange traded derivatives is treated as _____.
    a. Business income
    b. Income from other sources
    c. Salary income
    d. None of the above

44. Loss on derivative transactions which are carried out in a "recognized stock exchange" can be set off against any other income during the year except _____.
    a. Business income
    b. Income from other sources
    c. Salary income
    d. None of the above

45. Loss on derivative transactions which are carried out in a "recognized stock exchange" can be carried forward for period _____ assessment years
    a. 5
    b. 6
    c. 7
    d. 8

46. Investors can have grievances against _____.
    a. Brokers
    b. Intermediaries
    c. Company
    d. All of the above

47. Fund created to take care of legitimate investment claims
    a. Investor protection fund
    b. Investor grievance fund
    c. member default fund
    d. Core settlement guarantee fund

48. Arbitration is a _____ judicial process.
    a. Quasi
    b. Fully
    c. Non
    d. None of the above

49. Execution of Power of attorney by the client in favour of stock broker is _____.
    a. Mandatory
    b. Mandatory at the time of KYC
    c. Optional
    d. Not applicable

50. Subsequent to KYC, broker has to upload the KYC information in following system
    a. Depository
    b. KRA
    c. Clearing Bank
    d. SEBI

PLEASE NOTE THAT THESE ARE ONLY SAMPLE QUESTIONS PROVIDED AS A GUIDE TO CANDIDATES AND MAY NOT BEAR ANY RESEMBLANCE TO QUESTIONS IN THE CERTIFICATION EXAMINATION.

About NISM

National Institute of Securities Markets (NISM) is an educational institution established by the Securities and Exchange Board of India (SEBI), the securities market regulator, in 2006. The Institute was established in pursuant to the Union Finance Minister's proposal, in his 2005-06 Budget Speech, to set up an institution 'for teaching and training intermediaries in the securities markets and promoting research'.

NISM is committed to its vision 'to lead, catalyze and deliver educational initiatives to enhance the quality of securities markets'. The Institute conducts a wide range of capacity building programmes in securities markets - from basic financial literacy to full-time post-graduation programmes. The Institute's six Schools of Excellence, viz., School for Certification of Intermediaries, School for Securities Education, School for Investor Education and Financial Literacy, School for Regulatory Studies and Supervision, School for Corporate Governance and School for Securities Information and Research upholds NISM's vision and works in synergy towards professionalizing the markets.

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About the Workbook

This workbook has been developed to assist candidates in preparing for the National Institute of Securities Markets (NISM) Currency Derivatives Certification Examination. NISM-Series-I: Currency Derivatives Certification Examination seeks to create common minimum knowledge benchmark for associated persons functioning as approved users and sales personnel of the trading member of currency derivative segment of a recognized stock exchange.

The book covers basics of the currency derivatives, trading strategies using currency futures and currency options, clearing, settlement and risk management as well as the regulatory environment in which the exchange-traded currency derivatives markets operate in India.

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