

# CHAPTER - 1

## Barter System.

### → Introduction:-

• Foreign Exchange  $\Rightarrow$  Forex.

• Foreign Reserve ↑  $\propto$  Stronger currency ↑

- Initially, the trading of goods and services was by barter system where in goods were exchanged for each other. Such system had its difficulties primarily because of non-divisibility of certain goods, cost in transporting such goods for trading and difficulty in valuing of services. People tried various commodities as the medium of exchange ranging from food items to metals. The process of evolution of medium of exchange further progressed into development of paper currency. People would deposit gold/silver coins with bank and get a paper promising that value of that paper at any point of time would be equal to certain number of gold coins. With time, and the growth in international trade resulted in evolution of foreign exchange (FX) i.e., value of one currency of one country versus value of currency of other country. Whenever there is a cross-border trade, there is need to exchange one brand for another, and this exchange of two currencies is called "foreign exchange" or simply "forex" (FX).
- The smooth functioning of international trade required a universally accepted foreign currency to settle the internal trade and a way to balance the trade imbalances amongst countries. The documented history suggests that sometime in 1870 countries agreed to value their currencies against value of currency of other country using gold as the benchmark for valuation.
- During 1944-1971, countries adopted a system called Bretton Woods System. As part of the system currencies were pegged to USD at a fixed rate and USD value was pegged to gold. With adoption of this system USD became the dominant currency of the world. Finally Bretton Woods system was suspended and adopted system of free floating or managed float method of valuing the currency. Developed countries gradually moved to a market determined exchange rate and developing countries adopted either a system of pegged currency or a system of managed rate.



• Value/Rate of countries' currency  $\Rightarrow$  Gold, Silver, Reserves with the Central Bank of Country  $\rightarrow$  RBI / goods and services.

• Its note/coins is printed by Govt. India if critical financial conditions arise but yet not issued by govt.

↳ Other all notes/coins are printed by RBI.

The foreign exchange market has evolved over centuries from simple barter trade to today's complex global system. The journey began with the **barter system**, where goods were directly exchanged, leading to problems of **divisibility, valuation, and transportation**. To overcome these, **money** was introduced — first as metal coins (gold and silver) and later as **paper currency**, backed by gold or silver reserves.

With **international trade** expanding, nations needed a method to value one currency against another. This gave rise to the **foreign exchange (forex or FX) market**.

Historically, several systems have been used to determine exchange rates:

1. **Gold Standard (1870s–World War I)** – Currencies were valued based on a fixed amount of gold held by central banks.
2. **Bretton Woods System (1944–1971)** – All currencies were pegged to the **US Dollar (USD)**, which was in turn convertible into gold. This made USD the world's dominant currency.
3. **Post-Bretton Woods Era (After 1971)** – The system shifted to **floating exchange rates**, where currency values are determined by market forces. Countries adopted either:
  - **Free float** (market-determined rates),
  - **Pegged systems** (fixed to another currency or a basket), or
  - **Managed float systems** (central bank interventions to control volatility).

## 💡 Important Points

### 1. Barter System → Metal Coins → Paper Currency → Modern FX Market

- Trade difficulties in barter led to invention of money.
- Metals (especially gold/silver) were preferred for their divisibility, portability, and universal acceptance.

### 2. Introduction of Currency

- Each country's money became a "currency" — a branded medium of exchange.
- Foreign exchange (FX) refers to exchanging one currency for another in cross-border trade.

### 3. Gold Standard (1870–1914)

- Currencies were linked to gold reserves.
- Exchange rate between two currencies derived from their gold values.
- Example: If 1 unit of gold = ₹10,000 and = \$500, then \$1 = ₹20.

### 4. Bretton Woods System (1944–1971)

- USD pegged to gold; other currencies pegged to USD.
- USD became the world's reserve and intervention currency.
- Countries maintained rates within ±1% of fixed parity with USD.

### 5. Floating Exchange Rate System (Post-1971)

- Bretton Woods system collapsed in 1971.
- Developed nations moved to free-floating exchange rates.
- Developing nations adopted pegged or managed float systems.

### 6. Central Bank Role

- Central banks intervene by buying/selling local currency to stabilize or influence its value and maintain trade competitiveness.

### 7. Pegged vs. Managed Float

- **Pegged System:** Fixed to another currency; provides stability but hard to maintain.
- **Managed Float:** Market-driven with central bank interventions to control volatility.

∴ How the currency conversion takes place?

↳ Nov.

Curr. value of Gold for 10gm (24k) in INR = ₹ 1,26,603.20 /10gm.

Curr. value of Gold for 10gm (24k) in USA = \$ 1,315 /10gm.

Currency conversion Rate =  $\frac{1,26,603}{1,315} = ₹ 96.27$

∴

#### Interpretation:

- Based on the current gold prices, the implied exchange rate is ₹96.27 per USD.
- If the actual market rate differs, that means gold is slightly more/less expensive in one country due to local taxes, import duties, or market demand.

Imp. Dates:-

## → Major Currency Pairs:-

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

1) **USD:** The US Dollar is by far the most widely traded currency. In part, the widespread use of the US Dollar reflects its substantial international role as "investment" currency in many capital markets, "reserve" currency held by many central banks, "transaction" currency in many international commodity markets, "invoice" currency in many contracts, and "intervention" currency employed by monetary authorities in market operations to influence their own exchange rates.

2) **EUR:** Like the US Dollar, the Euro has a strong international presence and over the years has emerged as a premier currency, second only to the US Dollar.

3) **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.

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

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



∴ USD used as →

- investment currency.
- Capital market.
- Reserve currency.
- Transaction currency.
- Invoice currency.
- Intervention currency in market operations.
- Monetary ops.

∴ EUR → premier currency.

The **major currency pairs**, commonly called "the Majors", represent the most traded currencies globally.

They include:

- Euro (EUR)
- US Dollar (USD)
- Japanese Yen (JPY)
- Pound Sterling (GBP)
- Australian Dollar (AUD)
- Canadian Dollar (CAD)
- Swiss Franc (CHF)

These currencies are **freely floating** and form the backbone of global forex trading. The **US Dollar** plays a central role as the world's dominant "vehicle" currency — meaning most transactions involve USD as one of the two currencies being exchanged.

### ◆ Major Currency Pairs

The most actively traded pairs in the world are:

Pair	Description	% Share in Global Daily Volume (BIS, 2010)
EUR/USD	Euro vs US Dollar	28%
USD/JPY	US Dollar vs Japanese Yen	14%
GBP/USD	Pound Sterling vs US Dollar	9%
AUD/USD	Australian Dollar vs US Dollar	6%
USD/CHF	US Dollar vs Swiss Franc	4%
USD/CAD	US Dollar vs Canadian Dollar	5%
USD/others	—	18%
Others/others	—	16%

✓ Together, USD is involved in about 85–90% of all forex transactions worldwide.

### US Dollar (USD)

- Most traded and influential currency.
- Acts as:
  - **Investment currency** in global capital markets,
  - **Reserve currency** for central banks,
  - **Transaction currency** for commodities (like oil, gold),
  - **Invoice currency** in trade contracts,
  - **Intervention and vehicle currency** in FX markets.
- Most currency pairs use USD as a reference or intermediary currency.

### Euro (EUR)

- Second most traded currency after USD.
- Represents multiple European economies under the **Eurozone**.
- Has a strong global financial and trade presence.

### Japanese Yen (JPY)

- Third most traded currency.
- Highly liquid and traded 24 hours globally.
- Often used as a funding currency in carry trades (borrowing in low-interest yen to invest in higher-yield currencies).

### British Pound (GBP)

- Known as "**Cable**", from the telegraph cables used to transmit GBP/USD rates historically.
- Traded mainly against **USD** and **EUR**.
- Less liquid against other currencies but still one of the majors.

### Swiss Franc (CHF)

- Currency of Switzerland — not part of EU or G7.
- Considered a "**safe-haven currency**" due to Switzerland's stable economy and strong banking system.
- Closely follows the Euro's pattern but has lower liquidity.

### Australian Dollar (AUD) & Canadian Dollar (CAD)

- AUD: Strongly linked to commodity exports (iron ore, coal).
- CAD: Influenced by oil prices and trade with the US.
- Both serve as **commodity currencies**.

### Vehicle Currency Concept

- Traders often use USD as a **common intermediary** to exchange two non-USD currencies.
  - Example: To convert INR → PHP (Philippine Peso), trader sells INR for USD, then USD for PHP.
- This reduces complexity:
  - With **10 currencies**, using a vehicle currency (USD) means 9 exchange rates.
  - Without one, 45 direct rates are needed.
  - With **100 currencies**, it reduces from 4,950 to just 99 rates.

### Conclusion

The **USD** dominates global trade and finance, acting as the central currency in the world's financial system. The **Majors** — led by EUR, JPY, GBP, AUD, CAD, and CHF — form the core of the forex market, offering high liquidity, tight spreads, and global acceptance.

## → Overview of International currency markets

- ▶ For currency market, the concept of a 24-hour market has become a reality. In financial centers around the world, business hours overlap; as some centers close, others open and begin to trade. Given this uneven flow of business around the clock, market participants often will respond less aggressively to an exchange rate development that occurs at a relatively inactive time of day, and will wait to see whether the development is confirmed when the major markets open.
- ▶ At any moment, the exchange rates of major currencies tend to be virtually identical in all the financial centers where there is active trading. Rarely are there such substantial price differences among major centers as to provide major opportunities for arbitrage. In pricing, the various financial centers that are open for business and active at any one time are effectively integrated into a single market.

The international currency market operates 24 hours a day across global financial centers. As trading in one region closes, another opens, creating a continuous and interconnected global market.

This round-the-clock system enables real-time price discovery, global liquidity, and quick responses to geopolitical or economic events.

The market's immense scale — with daily turnover around USD 3.9 trillion (as per BIS 2010 survey) — makes it the largest financial market in the world, far surpassing equity or bond markets.

### 💡 Important Points

#### 🌐 1. 24-Hour Global Market

- The forex market functions 24 hours due to time zone overlaps between major trading centers.
- Typical trading sequence (in Indian time context):
  - Japan & Australia open first → Europe & UK → US → back to Asia.
- The most active period is when US and European sessions overlap, offering maximum liquidity and volatility.

#### ⌚ 2. Trading Activity by Region

- In the New York market, nearly two-thirds of the daily trading volume occurs during morning hours.
- Activity slows in the late afternoon after Europe closes and before Asian markets reopen.
- Price movements and reactions to news are often stronger during active hours and weaker during quiet market sessions.

### 3. Market Integration and Real-Time Pricing

- With constant global trading, exchange rates of major currencies remain nearly identical across financial centers.
- Arbitrage opportunities (price differences between centers) are rare and short-lived due to high market efficiency.
- Traders worldwide receive market updates **instantly** via modern communication systems — allowing **real-time monitoring** and decision-making.

### 4. Cross-Border Trading and Connectivity

- Forex markets are **fully globalized** — dealers and participants can trade with counterparts anywhere in the world.
- Massive volumes of data, quotes, and orders are shared **simultaneously and instantaneously** across markets.
- This high connectivity ensures **transparent and competitive pricing**.

### 5. Market Participants

- Include banks, financial institutions, hedge funds, corporations, central banks, and individual traders.
- Both **inter-dealer** (bank-to-bank) and **client** (bank-to-customer) trading happen continuously.

### 6. Daily Turnover

- According to the **Bank for International Settlements (BIS, April 2010)**:
  - Daily global FX turnover ≈ USD 3.9 trillion.
  - Makes forex the largest and most liquid asset class in the world.

→ Basics of currency markets and peculiarities in India:-

Currency Pairs: Two currencies paired together for comparison:  
Ex:- USD/INR.

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

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

USD / INR  
Base Currency      ↗  
Quotation Currency      ↘

## 1. Currency Pair Concept

- A currency pair consists of:
  - **Base Currency (BC):** The currency being priced (fixed at one unit).
  - **Quote/Quotation Currency (QC):** The currency used to express the price.
- Example:
  - USD/INR = 45 means 1 USD = ₹45.
  - If you want to express INR in USD, you'd use INR/USD.
- Exchange rate movements reflect **strengthening (appreciation)** or **weakening (depreciation)** of one currency relative to another.

Base currency ↗

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## 2. Base Currency & Quotation Currency

- Standard notation: **Base currency first, quote currency second.**
- Common global convention: **USD is usually the base currency** (except for pairs like EUR/USD, GBP/USD, AUD/USD, NZD/USD, CAD/USD).
- In **USD/INR**, USD is base; INR is quote.
  - Example: **USD/INR = 45.05** → \$1 = ₹45.05.

## 3. Interbank Market vs. Merchant Market

- **Interbank Market:** Trading among banks; dealers quote **two-way prices** (buy/sell).
  - Example: **USD/INR = 45.05 / 45.06**
    - **Bid (Buy) = 45.05** (bank buys USD)
    - **Ask (Sell) = 45.06** (bank sells USD)
- **Merchant Market:** Corporates or customers dealing with banks; banks act as **price givers**, merchants as **price takers**.

## 4. Two-Way Quotes & Spread

- **Two-way quote:** Includes both bid and ask prices.
- **Spread = Ask – Bid**, shows **market liquidity and efficiency**.
  - Narrow spread → High liquidity.
- Example:
  - Quote: **USD/INR = 45.05 / 45.06**
  - Spread = ₹0.01 (1 paisa)

## 5. Appreciation / Depreciation

- **Appreciation:** Base currency buys more of quote currency.
- **Depreciation:** Base currency buys less.
  - Example: **USD/INR moves from 44 → 44.25**
    - USD appreciated; INR depreciated.

## 6. Market Timings (India)

- **OTC market hours:** 9:00 AM – 5:00 PM (Indian time)
  - **Merchant trading:** 9:00 AM – 4:30 PM
  - **Interbank trading:** 4:30 PM – 5:00 PM (banks square off positions)
- **RBI imposes overnight position limits** on banks to control risk.

## 7. Price Benchmarks

- **Interbank Rate (IBR):** Real-time rate for large transactions among banks.
- **Card Rate:** Standard daily rate published by banks for smaller merchant transactions.
  - Revised multiple times on volatile days.
  - Card rate > IBR to cover risk.

#### **8. Price Discovery**

- Indian market opening levels depend on **overnight global market developments**.
- Early hours are less liquid until an **equilibrium price** is discovered through trading activity.
- Known as the **price discovery process**.

#### **9. RBI Reference Rate**

- Published **daily** by RBI around **12:30 PM** (Mon–Fri).
- Based on the **average of bid-offer rates** from select banks during **11:45 AM – 12:15 PM**.
- Acts as a **transparent and official benchmark** for pricing and settlements.
- Increasingly used for large transactions even in OTC markets.

#### **Conclusion**

The Indian currency market is becoming progressively aligned with global FX systems while maintaining its unique structure under RBI regulation.

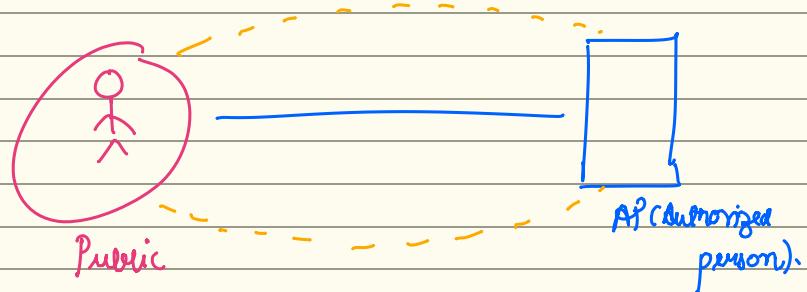
It features two-way quoting, distinct interbank and merchant segments, defined trading hours, and benchmark rates (like the RBI reference rate).

Understanding these peculiarities helps traders, corporates, and investors navigate India's evolving forex landscape efficiently.

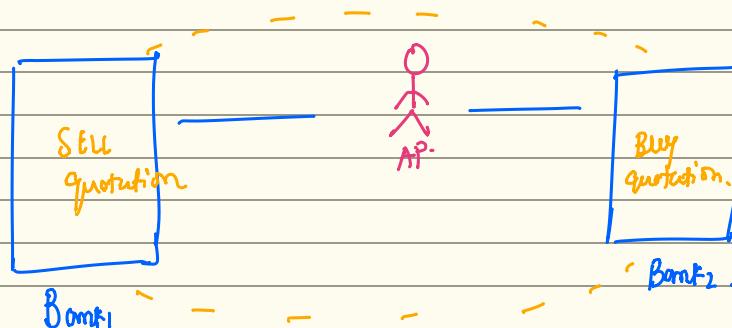


## **Interbank Market and merchant Bank market:-**

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



### **Merchant Market .**



### **Interbank Merchant.**

- ▶ Two Way Quote: In a two way quote, the prices quoted for buying is called bid price and the price quoted for selling is called as offer or ask price. There are certain market norms for quoting the two way quotes. Some of the important norms are as follows:
  - ▶ 1. The bid price (lower price) is quoted first followed by offer price (higher price)
  - ▶ 2. The offer price is generally quoted in abbreviated form. In case the currency pair is quoted upto four decimal places then offer price is quoted in terms of last two decimal places and if the currency pair is quoted in two decimal places then offer price is quoted in terms of two decimal places.

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

*Base currency ↑ Quot currency ↓*

*∴ If Base currency appreciates, quote currency depreciates.*

- ▶ **Market Timing:** In India, OTC market is open from 9:00 AM to 5:00 PM. However, for merchants the market is open from 9:00 AM to 4:30 PM and the last half hour is meant only for interbank dealings for banks to square off excess positions.
- ▶ **Price Benchmarks:** Banks price large value merchant transactions from **interbank rate (IBR)**. IBR is the price available to the bank in the interbank market. Therefore IBR could differ from bank to bank. For small value transactions, banks publish a standard price for the day called as **card rate**. On most days for most banks, the card rate is same for the whole day.
- ▶ **Price Discovery:** Gradually, market discovers an equilibrium price at which market clears buy and sell orders. This process of discovering an equilibrium price is called as price discovery.
- ▶ **RBI Reference Rate:** RBI reference rate is the rate published daily by RBI for spot rate for various currency pairs. The Reserve Bank periodically reviews the procedure for selecting the banks and the methodology of polling so as to ensure that the reference rate is a true reflection of the market activity. There is an increasing trend of large value FX transaction done at RBI rate even outside market.



→ Settlement date or value date.

OTC.

- ▶ Unlike currency futures market, the settlement in the OTC spot market happens by actual delivery of currency. The mechanism of settlement where each counterparty exchange the goods traded on the maturity of contract is called as gross settlement and the mechanism where market participants only settle the difference in value of goods is called as net settlement. Please note that value date is different from trade date. On trade date, the two counterparties agree to a transaction with certain terms (currency, price, and amount and value date). The settlement of the transaction, when counterparties actually exchange currency, is called as value date.
- ▶ The most important value date is the "spot" value date, which is settlement after two business days. The price at which settlement takes before spot date is a derived price from spot price and is not a traded price.

"Make all types of deals clear"

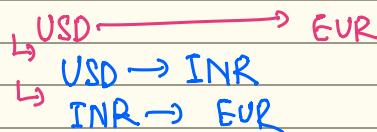
- On the day transaction is made → Transaction date
- Maturity date → Settlement or value date.
- SPOT value date → The date after 2 days.

### → OTC Forward Market :-

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

### → Exchange Rate Arithmetic - Cross Rate:-

- For some currency pairs prices are not directly available and are rather derived by crossing the prices of underlying currency pairs. Crossing the prices to arrive at price of the currency pair could involve either multiplication or division of the underlying prices. In market parlance, the price of currency pair for which direct prices is not available is called as cross rate.
- Let us start the computation of cross rate, using the buy side argument i.e. price of buying 1 EUR in terms of INR. As understood from underlying currency pairs, the price of EUR is directly available only in terms of USD. Therefore you need to sell INR to buy USD; and further sell the USD received to buy EUR. It is important to identify this FX conversion path of selling one currency and buying another to calculate the cross rate.



### → Impact of Economic factors on currency 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.
- 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.

## Important Points

### 1. Local and Global Factors Affecting Currency

#### • Domestic Factors:

- GDP growth
- Balance of Payments (BoP)
- Trade and fiscal deficit
- Inflation rate
- Interest rate levels
- Policies on foreign capital inflow/outflow

#### • Global Factors:

- Commodity prices (especially crude oil)
- Global USD strength or weakness
- Geopolitical tensions and risk sentiment

■  Currency value = combined effect of local economic strength + global market dynamics.

### 2. Example: INR vs USD

- If India's economy is strong → foreign capital inflows → INR appreciation.
- But if the USD strengthens globally due to global uncertainty → INR may still depreciate.
- Hence, traders must analyze which factors dominate (local or global) at a particular time.

### 3. Demand-Supply Dynamics

- Short-term currency movements often depend on demand and supply mismatches in the market.
  - Example: Large USD inflows (FDI, ECB, remittances) → INR appreciates temporarily.
  - Once inflow subsides, INR can depreciate again.
- Demand-supply effects are stronger in low-liquidity periods or in thinly traded currencies.

## → Economic Indicators:-

- ▶ **GDP:** GDP represents the total market value of all final goods and services produced in a country during a given year. A GDP growth rate higher than expected may mean relative strengthening of the currency of that country, assuming everything else remaining the same.
- ▶ **Retail Sales:** It is a coincident indicator and shows how strong is consumer spending. A retail sales number higher than expected may mean relative strengthening of the currency of that country.
- ▶ **Consumer Price Index (CPI):** CPI is a statistical time-series measure of a weighted average of prices of a specified set of goods and services purchased by consumers. The indicator measures level of inflation in the economy for the basket of goods and services which are generally brought by the people
- ▶ **Non-Farm Payrolls:** Nonfarm payrolls represent the number of jobs added or lost in the economy over the last month, not including jobs relating to the farming industry, government jobs, household jobs and employees of non-profit organization that provide assistance to individuals.
- ▶ **Import/Export Growth:** For a country like India, the figures pertaining to import / export, current account deficit and balance of payments are very important. During periods of risk aversion, any development resulting in widening current account deficit results in weakening of INR.
- ▶ **Central Bank Meeting and Key Decisions:** Market also tracks minutes of the central bank meetings and the key policy decisions. Some of the important announcements from central bank meetings are their interest rate decisions, CRR (cash reserve ratio). Market also actively looks forward to central bank's perspective on state of the economy.

## 1. Meaning and Importance

- Economic indicators **measure economic activity**, revealing whether an economy is expanding or contracting.
- They help determine:
  - Market sentiment toward a currency,
  - Policy actions by central banks,
  - Investor decisions on capital inflows/outflows.
- Their impact on currency prices depends on:
  - **Actual figures vs. expected figures**
  - **Frequency and credibility** of the data source

## 2. Categories of Economic Indicators

Indicators are broadly classified into three types:

Type	Timing	Description
Leading Indicators	Change <i>before</i> the economy changes	Predict future trends (e.g., stock market, interest rate spreads)
Lagging Indicators	Change <i>after</i> economic shifts occur	Confirm long-term trends (e.g., unemployment rate, inflation)
Coincident Indicators	Change <i>along with</i> the economy	Indicate the current phase of the economy (e.g., GDP, industrial production)

## 3. Key Economic Indicators Affecting Currency Markets

### ◆ (a) Gross Domestic Product (GDP)

- Measures total value of goods & services produced in a country.
- **Higher GDP growth → stronger currency**, as it reflects economic strength and attracts foreign investment.

### ◆ (b) Inflation

- Measured by CPI (Consumer Price Index) or WPI (Wholesale Price Index).
- **High inflation → weaker currency** (reduces purchasing power).
- However, moderate inflation with growth can lead to **higher interest rates**, supporting the currency short-term.

### ◆ (c) Interest Rates

- Set by the **central bank (RBI in India)**.
- **Higher interest rates** attract foreign capital (FII inflows), leading to **currency appreciation**.
- **Lower rates** make a currency less attractive, leading to **depreciation**.

### ◆ (d) Employment Data

- Indicates the economy's overall health.
- **High employment → economic expansion → stronger currency**.
- In the US, the **Non-Farm Payroll (NFP)** report is a major market mover.

### ◆ (e) Trade Balance (Exports - Imports)

- **Trade Surplus**: Exports > Imports → currency appreciates.
- **Trade Deficit**: Imports > Exports → currency depreciates (more demand for foreign currency).

### ◆ (f) Fiscal Balance (Budget Deficit/Surplus)

- Reflects government's revenue and expenditure.
- **High fiscal deficit → weak investor confidence → weaker currency**.

### ◆ (g) Balance of Payments (BoP)

- Overall record of all financial transactions between residents and the world.
- **BoP Surplus → currency appreciation; BoP Deficit → depreciation**.

#### ◆ (h) Foreign Exchange Reserves

- High reserves boost market confidence in a country's ability to manage volatility → supports currency stability.

#### ◆ (i) Industrial Production / Manufacturing Index

- Reflects production trends and overall economic momentum.
- Rising production → economic growth → potential currency appreciation.

#### ◆ (j) Consumer Confidence Index (CCI)

- Measures consumers' optimism about income and economic conditions.
- High CCI → increased spending → growth → currency appreciation.

### ⚖ 4. Relative Impact

- FX traders compare indicators across countries to determine which economy is performing better.
  - Example: If US GDP rises faster than India's, USD may strengthen against INR.
- The degree of surprise (difference between actual and expected data) determines how sharply currencies react.

### 💡 5. Role in Forex Trading

- Traders use these indicators to:
  - Anticipate central bank actions (like rate hikes or cuts).
  - Time entries and exits in currency trades.
  - Manage risk from upcoming economic data releases.
- Economic calendars list scheduled releases to  traders prepare for volatility.

## CHAPTER - 2 Foreign Exchange Derivative.

→ What are derivatives.

A derivative is a financial security with a value that is reliant upon, or derived from, an underlying asset or group of assets



Stocks



Bonds



Commodities



Currencies



Interest Rates



Market Indices

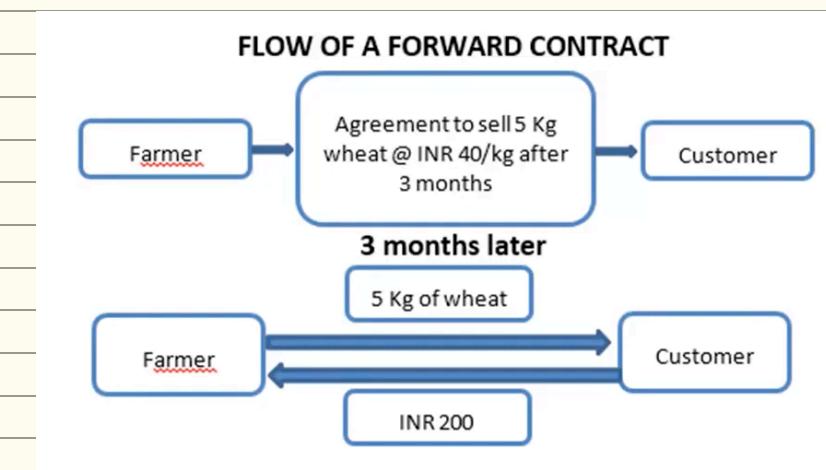
- ▶ Derivative is a product whose value is derived from the value of one or more basic variables, called bases. The underlying asset can be equity, foreign exchange, commodity or any other asset. Derivative products initially emerged as hedging devices against fluctuations in commodity prices, and commodity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

Hedging :-

→ Derivative Product:-

↳ Forward Contract:-

- (i). FORWARD CONTRACT:- It is a custom or a customized OTC contract b/w two parties, where settlement takes place on a specific date in the future at today's preagreed price.



(ii). Futures Contracts:-

It is similar to forward except that it is an Exchange - trade product.

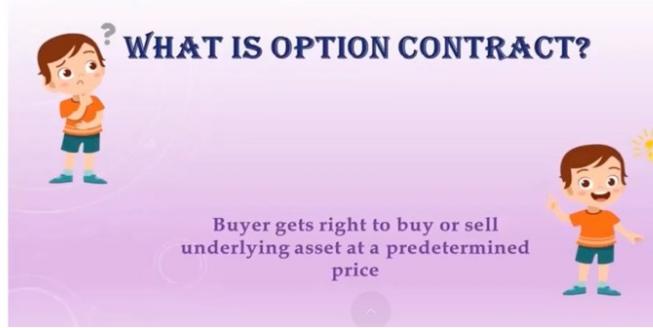
The term "futures" refer to the derivative and the term "future" refer to a later point in time.

Thus the "futures price" is the current price of derivatives and the "future" price is the price that will prevail on a later point of time.



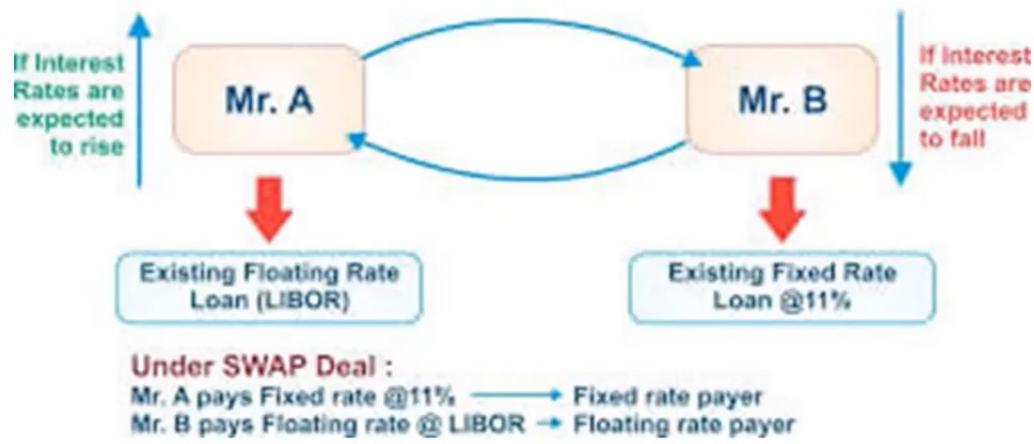
(iii).

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



(iv).

- **Swaps contract**: Swaps are agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are:
- **1. Interest rate swaps**: These entail swapping only the interest related cash flows between the parties in the same currency.
  - **2. Currency swaps**: These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.



## → Growth Drivers of derivative products:-

(i). Increased Volatility.

(ii). Increased Integration of markets.

(iii). Market improvement in communication facilities and sharp decline in their costs.

(iv). Development of more sophisticated risk tools.

(v). Innovations in the derivatives market.

## → Market Players :-

Broad categories of participants

Hedgers

Speculators

Arbitrageurs.

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

### (i). Hedgers:-

Objective:- Protection from adverse price or exchange rate movements.

Nature:- Risk reducers - use derivatives to offset potential losses in their underlying position.

Example:

- An importer expecting to pay USD 1 million after 3 months fears the USD might appreciate (making payment costlier).
- 👉 He buys USD-INR futures today to lock in the exchange rate.
- A hedger sacrifices potential extra profit to gain certainty and stability.

Key Takeaway:

Hedgers transfer risk to others — they use derivatives as insurance tools against price volatility.

### (ii). Speculators:-

Objective:- Profit from anticipated movements in prices or exchange.

Nature:- Risk takers - they assume the risk that hedgers wish to avoid.

Example:

- A trader expects INR to depreciate against USD → buys USD/INR futures to sell later at a higher price.
- If INR actually weakens, the trader profits; if not, they incur a loss.

Key Takeaway:

Speculators bring liquidity to the market by taking opposite positions to hedgers and ensuring continuous trading activity.

### (iii). Arbitrageurs:-

Objective:- Profit from price discrepancies of the same or related instruments in different markets or forms.

Nature:- Risk-free profit seekers - they exploit small mispricing until prices align.

**Example:**

- If USD/INR is quoted as ₹83.00 in the spot market and ₹83.20 in the futures market, an arbitrageur can:
  - Buy in spot at ₹83.00, and
  - Sell futures at ₹83.20, earning a risk-free profit when the prices converge.

**Key Takeaway:**

Arbitrageurs ensure price efficiency and alignment between markets.

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

## CHAPTER - 3

### Exchange Traded currency futures.

#### Future Contract:-

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

• NIFTY expiry → 3 months.

• currency expiry → 12 months

(i). Future contract must be listed on stock market. (listed on exchange)

(ii). Forward Contract:- made physically contract.



#### NIFTY and BANK NIFTY.

↓  
weekly  
↓

↓  
Monthly

Expires on every Thursday of  
every week

→

## Currency

weekly

Expires Friday.

Monthly.

Last Friday.

(Month ends 2 working days prior).

Tick size. (increases / decreases by this amount).

NIFTY / BANK NIFTY

0.05

Currency falls

100 25

Tick:- minimum up/down value allowed by currency or NIFTY.

## Futures Terminology:-

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

Spot price = current price (Ex:- Gold today). (cash price today)

Futures price = spot price (current price) + time value of money.

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

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

↓  
last business date → settlement date.



- ▶ **Expiry date:** Also called Last Trading Day, it is the day on which trading ceases in the contract; and is two working days prior to the final settlement date.  
*↳ 2 days prior Settlement date.*
- ▶ **Contract size:** The amount of asset that has to be delivered under one contract. It is also called as lot size.
- ▶ **Initial margin:** The amount that must be deposited in the margin account at the time a futures contract is first entered into is known as initial margin.
- ▶ **Marking-to-market:** In the futures market, at the end of each trading day, the margin account is adjusted to reflect the investor's gain or loss depending upon the futures closing price. This is called marking-to-market.



### → **Distinction between futures and forward Contract:-**

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

### → **Advantages of futures:-**

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

### → **Limitations of futures**

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

### → **Interest Rate Parity:-**

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

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

Spot Rate

futures

Respective interest rates

### 3.1 Currency Futures – Definition

A **currency futures contract** is a standardized exchange-traded agreement to buy or sell a specific amount of a currency at a predetermined price on a future date.

- Traded on an exchange (unlike OTC forwards).
- Obligatory for both parties at settlement.
- Example: USDINR futures contract has a **tick size** of ₹0.0025 (0.25 paise).
- Profit/loss per tick = tick size × contract size (e.g., ₹2.5 per tick for USDINR).

### 3.2 Futures Terminology

Key terms:

- **Spot Price:** Price of the underlying in the spot market.
- **Futures Price:** Current price of the futures contract.
- **Contract Cycle:** Duration for which a futures contract is traded (monthly up to 12 months).
- **Value/Settlement Date:** Last business day of the month (same as interbank settlement day).
- **Expiry Date:** Two working days prior to the final settlement date.
- **Initial Margin:** Deposit required to enter a contract.
- **Mark-to-Market (MTM):** Daily adjustment of profits/losses in the margin account.

### 3.3 Rationale Behind Currency Futures

- Introduced to **hedge currency risk** due to exchange rate fluctuations.
- Beneficial for both residents and non-residents dealing in foreign currency assets or liabilities.
- Provides **price transparency, low transaction cost**, and eliminates **counterparty credit risk** compared to OTC forwards.
- Enhances **market depth, liquidity**, and contributes to **better price discovery**.
- Facilitates economic growth by stabilizing trade and investment decisions affected by currency volatility.

### 3.4 Futures vs. Forwards

**Similarities:** Both used for hedging against currency fluctuations.

**Differences:**

Aspect	Futures	Forwards
Trading Venue	Exchange-traded	OTC (customized)
Standardization	Standardized	Tailor-made
Counterparty Risk	None (clearing house guarantee)	Exists
Liquidity	High	Low
Cost	Lower	May be higher
Flexibility	Less (fixed size/date)	More

**Advantages of Futures:**

#### **Advantages of Futures:**

- Transparent pricing
- Lower counterparty risk
- Accessible to all participants

#### **Limitations:**

- Standardization may not fit specific hedge needs
- Requires daily margin settlements

### **3.5 Interest Rate Parity and Pricing of Currency Futures**

- Futures prices depend on **interest rate differentials** between two currencies.
- Formula:

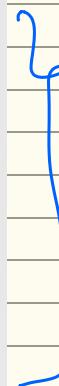
$$F = S \times \frac{(1 + R_{INR})}{(1 + R_{USD})}$$

where F = Futures price, S = Spot rate, R = respective interest rates.

- Ensures **no arbitrage opportunity** between spot and futures markets.
- The currency with the **higher interest rate** will trade at a **discount** in futures.

## **CHAPTER - 4**

### **Strategies using currency Futures.**



**Audio recording.**

**Usage Of Currency Futures  
By Exporter & Importer**

## → Market Participants :-

- ▶ Hedgers: These types of participants have a real exposure to foreign currency risk on account of their underlying business and their objective is to remove the FX risk using currency futures. The objective of hedgers is to reduce the volatility in future cash flows by locking in the future currency rates.
- ▶ Speculators: Speculators play a vital role in the futures markets. Futures are designed primarily to assist hedgers in managing their exposure to price risk; however, this would not be possible without the participation of speculators. Speculators, or traders, assume the price risk that hedgers attempt to lay off in the markets.
- ▶ Arbitragers: This set of market participants identify mispricing in the market and use it for making profit. They have neither exposure to risk and nor do they take the risk. Arbitrageurs lock in a profit by simultaneously entering opposite side transactions in two or more markets.

2 different markets.

## → Computing Payoffs from portfolio of futures and trade remittances.

- ▶ The market participants may undertake various kinds of currency positions and it is important to understand the payoff from these positions. There are different combinations of positions in futures market on standalone basis and futures positions combined with cash position in OTC market.  
Examples of such positions would be:
  - (i) Combined position of futures and underlying export trade remittance
  - (ii) Combined position of futures and underlying import trade remittance

## → Currency purposes:-      Futures are used for hedging for the following.

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

### 1. Hedging Import Payments

- Who: Importers who must pay in foreign currency (e.g., USD).
- Risk: If the foreign currency **appreciates**, imports become costlier in INR.
- Hedging Strategy:
  - Buy (**go long**) currency futures (e.g., buy USDINR).
  - This locks in today's exchange rate for future payment.
  - If USD rises, the loss on actual payment is offset by a gain in futures.

#### Example:

An Indian importer must pay \$100,000 in 3 months. If USDINR rises from ₹83 to ₹85, his payment increases by ₹2 lakhs — but his long futures position gains the same amount.

## 2. Hedging Export Receipts

- **Who:** Exporters who will receive foreign currency in the future.
- **Risk:** If the foreign currency **depreciates**, they get fewer rupees on conversion.
- **Hedging Strategy:**
  - **Sell (go short)** currency futures (e.g., sell USDINR).
  - If USD weakens later, the exporter's loss in conversion is offset by a profit on futures.

### Example:

An exporter expects to receive \$100,000 after 2 months. If USDINR falls from ₹84 to ₹82, his revenue drops by ₹2 lakhs — but his short futures gains ₹2 lakhs.

## 3. Hedging Foreign Currency Loans

- **Who:** Companies that borrowed in foreign currency.
- **Risk:** If the foreign currency **appreciates**, the loan repayment (in INR) becomes costlier.
- **Hedging Strategy:**
  - **Buy (go long)** currency futures.
  - The gain on futures offsets the increased repayment cost due to currency appreciation.

## 4. Hedging Foreign Investments

- **Who:** Investors with assets abroad (e.g., US stocks or bonds).
- **Risk:** If the foreign currency **depreciates**, investment returns fall when converted to INR.
- **Hedging Strategy:**
  - **Sell (go short)** the foreign currency futures.
  - Protects INR value of returns even if the foreign currency weakens.

## 5. Hedging Future Commitments or Bids

- **Who:** Companies that submit foreign currency bids or contracts (e.g., construction or supply tenders).
- **Risk:** Exchange rate movement between bidding and payment date.
- **Hedging Strategy:**
  - **Take appropriate futures position** (buy or sell depending on exposure).
  - Locks in the rate and removes currency uncertainty.

## 6. Portfolio Hedging (for Investors and Funds)

- **Who:** Portfolio managers with multi-currency holdings.
- **Risk:** Currency fluctuation affects overall returns.
- **Hedging Strategy:**
  - Use **currency futures** to neutralize exchange rate impact, maintaining only asset risk.

### 🔒 Key Takeaway

Currency futures are a **cost-effective and transparent** way to hedge exchange rate risk.

They:

- ✓ Lock in exchange rates in advance
- ✓ Eliminate uncertainty of future cash flows
- ✓ Protect profits and costs from forex volatility
- ✓ Are settled daily (mark-to-market) on recognized exchanges (e.g., NSE, BSE)

## → Investment in Gold:-

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

### ● Investment in Gold – Explained

#### 1. What Is Gold Investment?

Investment in gold means **putting money into gold assets** with the expectation of earning a return or preserving wealth.

Gold is both a **commodity** and a **monetary asset** — it has been used as money, a store of value, and a hedge against inflation and currency depreciation for centuries.

#### 2. Why People Invest in Gold

Gold is seen as a “**safe haven**” asset because it maintains value even when markets are volatile.

Investors buy gold to:

- **Protect against inflation:** When currency loses value, gold usually rises.
- **Hedge currency risk:** Gold prices often move opposite to the US dollar.
- **Diversify portfolio:** Gold's low correlation with equities reduces overall risk.
- **Preserve wealth:** It's a tangible asset that holds long-term value.
- **Crisis protection:** In times of war, recession, or market crashes, gold demand increases.

#### 3. Forms of Gold Investment

Type	Description	Key Points
Physical Gold	Buying gold in the form of jewellery, coins, or bars.	Tangible but involves storage, purity risk, and making charges.
Gold ETFs (Exchange Traded Funds)	Traded on stock exchanges; each unit represents fixed grams of gold.	Easy to buy/sell like shares; low cost; high liquidity.
Sovereign Gold Bonds (SGBs)	Issued by RBI on behalf of Govt. of India.	Earn 2.5% annual interest + price appreciation; no storage issue; capital gains exempt on redemption.
Digital/Online Gold	Buy small quantities via fintech apps.	Convenient but should ensure regulated provider.
Gold Mutual Funds	Funds that invest in gold ETFs or gold-related securities.	Managed by professionals; small ticket size.
Gold Mining Stocks	Shares of companies engaged in gold mining.	Indirect exposure; influenced by both gold price and company performance.

## → Investment Capital in assets outside India and repatriation of profit

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

In currency,  
1 lot = 1000

### 1. What is Speculation?

Speculation means taking positions in the market to profit from expected price movements, without having any underlying exposure (like trade or investment in that currency).

A speculator accepts the risk of adverse price movement in the hope of making a profit from a favorable one.

### 2. Working of speculation:-

#### 3. How Speculation Works

A speculator forms an opinion on how a currency's value will move and takes a position accordingly:

##### ● (a) Long Position – Expecting Appreciation

- If a trader expects the **foreign currency to rise** against the rupee,  
→ He **buys (goes long)** a currency futures contract (e.g., USDINR).
- If the price actually rises, he sells later at a higher price and **makes a profit**.
- If it falls, he incurs a **loss**.

**Example:**

Trader buys 1 USDINR contract at ₹83.00 and sells at ₹83.50.

→ Profit = ₹0.50 × 1000 = ₹500 per contract.

##### ● (b) Short Position – Expecting Depreciation

- If a trader expects the **foreign currency to fall**,  
→ He **sells (goes short)** currency futures now and **buys back** later at a lower price.
- Profit if price falls; loss if it rises.

**Example:**

Sells USDINR at ₹84.00 and buys back at ₹83.60.

→ Profit = ₹0.40 × 1000 = ₹400 per contract.

## → Use of currency futures for arbitrageurs.

price of buyer.  
price of seller.

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

### Use of Currency Futures by Arbitrageurs

#### 1. Who Are Arbitrageurs?

Arbitrageurs are traders who exploit **price differences** of the **same asset** in **different markets** to earn **risk-free profits**.

In the context of currency markets, arbitrageurs look for **discrepancies between the spot market, forward market, and currency futures market prices** — and take offsetting positions to lock in a guaranteed profit.

#### 2. Objective of Arbitrage

- ◆ To earn **risk-free profit** from temporary mispricing between:
  - Spot and Futures prices of a currency pair, or
  - Currency futures across two different exchanges.
- ◆ They **do not speculate** on currency movement — they only act when prices deviate from the theoretical fair value.

#### 3. How Currency Futures Arbitrage Works

Let's assume:

- Spot rate (**S**) of USDINR = ₹83.00
- 1-month futures price (**F**) = ₹83.60
- Interest rate in India (**R<sub>1</sub>**) = 6% p.a.
- Interest rate in the U.S. (**R<sub>2</sub>**) = 3% p.a.

The theoretical futures price should be:

$$F = S \times \frac{(1 + R_1)}{(1 + R_2)} = 83 \times \frac{1.06}{1.03} \approx ₹85.36$$

But the market futures price is ₹83.60, which is **lower than fair value**, so there's an **arbitrage opportunity**.

##### ● (a) Cash-and-Carry Arbitrage

Used when **futures are undervalued relative to spot**.

**Steps:**

1. Buy the currency in the **spot market**.
2. Sell the same currency in the **futures market**.
3. Hold until expiry → lock in profit.

**Example:**

If spot USDINR = ₹83.00, futures = ₹83.60

→ Buy USD in spot, sell in futures → gain ₹0.60 per dollar (less carrying cost).

**Result:** Profit = (Futures Price – Spot Price) – Carrying Cost

### ● (b) Reverse Cash-and-Carry Arbitrage

Used when futures are overvalued relative to spot.

Steps:

1. Sell the currency in the **spot market** (or borrow it).
2. Buy the same currency in the **futures market**.
3. Repay at expiry and keep the difference.

Example:

If futures = ₹85.50 and spot = ₹83.00

→ Sell USD at ₹83.00 (borrowed), buy futures at ₹85.50 → profit if difference > interest cost.

### ● (c) Inter-exchange Arbitrage

If the same currency futures trade at different prices on NSE and BSE,

→ Arbitrageurs buy low on one exchange and sell high on the other simultaneously.

They exit when prices converge, booking a **risk-free spread**.

## 5. Role of Arbitrageurs

Ensure price alignment between spot and futures markets.

Add liquidity to the market.

Promote market efficiency by removing mispricing quickly.

## 6. Risks in Arbitrage

⚠ Execution risk: Prices may converge before both trades are executed.

⚠ Transaction costs: Brokerage, taxes, and margins may reduce profit.

⚠ Interest rate changes: Unexpected rate movement can alter theoretical pricing.

⚠ Liquidity risk: Difficulty in squaring off positions.

Example explanation:-

### Given Data

Market	Type	6-Month USDINR Rate
Currency Futures	65.98 / 66.00	
OTC Forward	65.85 / 65.86	

### 💡 Step 1: Identify the Price Difference

- The futures rate (65.98–66.00) is higher than the OTC forward rate (65.85–65.86).
- So the **futures are overpriced** relative to the forward market.

👉 This means:

Sell (short) the **overpriced futures** and buy (long) the **underpriced forward** — a **reverse cash-and-carry arbitrage**.

### Step 2: Decide the Trading Action

- Short Futures at ₹65.98 (sell higher price).
- Go Long in Forward at ₹65.86 (buy lower price).

This locks in the price difference between the two markets.

### Step 3: Settlement Outcome

At the time of settlement:

- Loss on Futures = ₹1.02 per USD
- Profit on Forward = ₹1.14 per USD

Now, net them out:

$$\text{Net Arbitrage Profit} = 1.14 - 1.02 = ₹0.12 \text{ per USD}$$

 So, the trader earns ₹0.12 profit per dollar — without taking any directional risk on currency movement.

### Step 4: Logic Behind Profit

This profit arises because the **same currency (USDINR)** for the same maturity is priced differently:

- Futures market quoted **higher** than fair value.
- Forward market quoted **lower** than fair value.

By **selling high (futures)** and **buying low (forwards)**, the trader locks in the difference — that's the essence of **arbitrage**.

### Step 5: Key Takeaway

- This is a **reverse cash-and-carry arbitrage**.
- The trader:
  - Shorted currency **futures** at ₹65.98
  - Went long **OTC forward** at ₹65.86
  - Earned **risk-free profit** = ₹0.12 per USD

Such opportunities are **rare and short-lived**, because once traders exploit them, the price difference quickly disappears — restoring **market efficiency**.



Trading spreads using currency futures.

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



## → Limitations of currency futures for hedgers.

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

## CHAPTER : 5

### Trading in currency Futures.

In India, they are  
4 Indian currency  
pair  
8  
total are F

( 3 from currency.)

- Currently currency futures contracts on four INR pairs i.e., USDINR, EURINR, GBPINR and JPYINR and on three cross currency pairs i.e., EURUSD, GBPUSD and USDJPY are being traded on the recognized stock exchanges.
- **Base price** of the futures contracts on the first day of its life shall be the theoretical futures price. The base price of the contracts on subsequent trading days will be the **daily settlement price of the previous trading day**.
- The **closing price** for a futures contract is currently calculated as the last half an hour weighted average price of the contract.
- The **tenor of a contract** means the period when the contract will be available for futures trading, i.e. the "cycle" of the contract.

duration of the contract.

## → Entities in Trading System:-

(i)



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

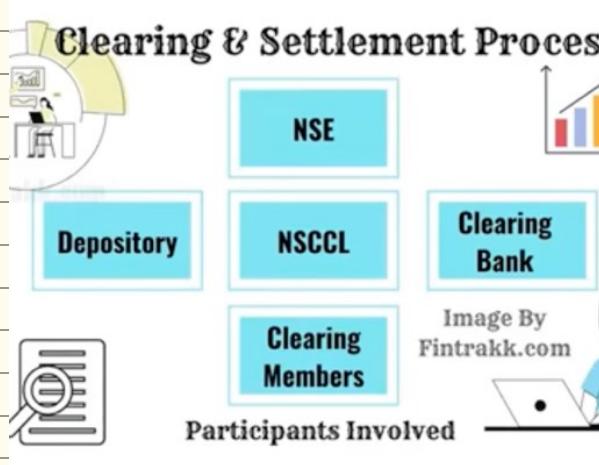
Example:- Zerodha, Motilal Oswal, Chelar securities.

CLI account → Client account.  
Own Account → Pro Account

(ii).

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

→ clearing account



Settlement of trades / process of settle  
named.

(iii).

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

↳ Can do both trading and clearing.

Eg:- ICIC Securities, Kotak, HDFC SEC.

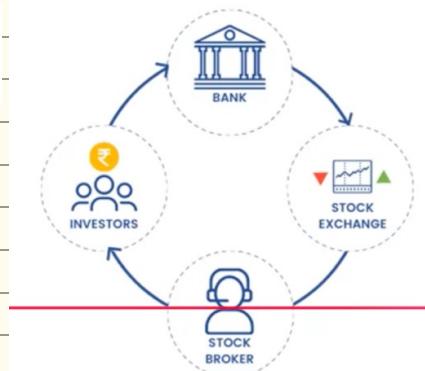
(iv).

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

Eg :- Standard Chartered Bank or big custodians.

(v).

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



Participants.

BUY/SELL → BROKER → NHDL/CDSL

NSE / BSE ← MGR OF CUSTODIAN

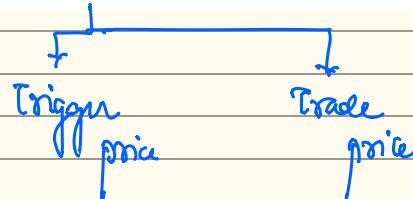
## → Types of order :-

### (i). Timeline Conditions.

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

### (ii). Price Conditions.

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



## → Price Limit Circuit Filter.

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

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

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

# CHAPTER-6 -

## Currency Future Trading Strategies.

### 6.1 Introduction

Currency futures can be used in various ways — mainly for **hedging, speculation, and arbitrage**.

The chapter explains how traders design strategies to manage risk or earn profits from movements in exchange rates.

### 6.2 Hedging Strategies

Hedging is used to **protect against exchange rate risk**.

Different participants use different strategies based on their exposure:

#### ● (a) Hedging for Importers

- Importers pay in foreign currency (e.g., USD).
- If USD appreciates, payments become costlier.
- **Hedging Action:** Go long (buy) currency futures to lock in current rate.

#### ● (b) Hedging for Exporters

- Exporters receive foreign currency later.
- If USD depreciates, they earn fewer rupees.
- **Hedging Action:** Go short (sell) currency futures to fix exchange rate.

#### ● (c) Hedging Foreign Currency Loans

- Borrowers with foreign loans face the risk of appreciation in that currency.
- **Hedging Action:** Go long futures to offset higher repayment costs.

#### ● (d) Hedging Investments Abroad

- Investors in foreign assets lose if that currency weakens.
- **Hedging Action:** Go short futures to protect investment value.

### 6.3 Speculative Strategies

Speculators try to **profit from price movements** in currency futures.

Expectation	Strategy	Action	Profit If
Currency appreciates	Go long	Buy futures	Price rises
Currency depreciates	Go short	Sell futures	Price falls

- Speculators benefit from **leverage** — small margin, large exposure.
- However, they face **high risk** due to volatility and daily mark-to-market.

### 6.4 Arbitrage Strategies

Arbitrage involves taking **opposite positions** in different markets to earn **risk-free profits** from mispricing.

#### (a) Cash-and-Carry Arbitrage

- When futures are **undervalued** compared to spot.
- **Action:** Buy in spot market, sell in futures.
- **Profit:** Difference between futures and spot after cost.

#### (b) Reverse Cash-and-Carry Arbitrage

- When futures are **overvalued** relative to spot.
- **Action:** Sell in spot market (or borrow currency), buy in futures.
- **Profit:** Difference between prices after financing cost.

#### (c) Inter-Market Arbitrage

- Exploit differences in the same currency pair across exchanges (e.g., NSE vs. BSE).
- **Buy lower, sell higher** to lock in profit.

### 6.5 Interest Rate Parity (IRP) in Futures Pricing

- Theoretical futures price = Spot  $\times$  (1 + Domestic rate) / (1 + Foreign rate)
- If actual futures price deviates from IRP, **arbitrage opportunities arise.**
- Arbitrage brings prices back in line with fair value.

### 6.6 Example of Arbitrage

A trader finds USDINR futures at 65.98/66.00 and OTC forward at 65.85/65.86.

He shorts futures and goes long in forward.

At settlement:

- Loss on futures = ₹1.02
  - Profit on forward = ₹1.14
- Arbitrage profit = ₹0.12 per USD.

### 6.7 Summary of Participants' Use

Participant	Purpose	Strategy
Hedger	Protect against currency risk	Long/Short Futures
Speculator	Profit from currency movement	Long if bullish, Short if bearish
Arbitrageur	Exploit mispricing	Buy low, Sell high between markets

# CHAPTER - 7

## Exchange Traded Currency Options.

### 7.1 Types of Market Participants

There are three main participants in the currency futures market:

#### 1. Hedgers:

- Use futures to protect against exchange rate risk.
- Aim to reduce uncertainty rather than earn profit.

#### 2. Speculators:

- Take positions based on expected price movements.
- Aim to profit from volatility in currency prices.

#### 3. Arbitrageurs:

- Exploit temporary price differences between spot, forward, and futures markets.
- Their trades help align prices and improve market efficiency.

### 7.2 Trading System and Market Timings

- Currency futures in India trade on recognized exchanges like NSE, BSE, and MCX-SX.
- **Trading hours:** 9:00 a.m. to 5:00 p.m. (Monday to Friday).
- Trades are executed through **electronic order-matching systems** — anonymous and fully automated.

### 7.3 Order Types

- **Limit Order:** Executed at a specified or better price.
- **Market Order:** Executed immediately at the best available price.
- **Stop-Loss Order:** Triggered once price crosses a defined level — helps manage losses.
- **Good Till Date (GTD):** Remains valid until specified date.
- **Immediate or Cancel (IOC):** Executes instantly or gets cancelled.

### 7.4 Margins in Currency Futures

Margins are required to ensure contract performance and manage risk:

1. **Initial Margin:** Paid upfront to enter a position.
2. **Exposure Margin:** Collected to cover potential losses due to volatility.
3. **Mark-to-Market (MTM) Margin:** Daily settlement of gains/losses based on closing prices.
4. **Variation Margin:** Adjusted based on daily price movement in open positions.

All margin payments are made in cash or collateral through the clearing house.

### 7.5 Daily Settlement and Final Settlement

- **Daily (MTM) Settlement:**
  - Positions are marked-to-market at the end of each day.
  - Profits credited and losses debited daily.
- **Final Settlement:**
  - Happens on the contract expiry date (two working days before the last business day of the month).
  - Final rate = RBI reference rate on that day.
  - Open positions are cash-settled based on this rate.

### 7.6 Trading and Position Limits

- **Client Level Limit:** Maximum USD 10 million equivalent across all contracts.
- **Trading Member Limit:** Higher limit set by the exchange (e.g., USD 100 million).
- **Banks & Institutional Participants:** Need RBI approval to exceed prescribed limits.

### 7.7 Clearing and Settlement Mechanism

- The **Clearing Corporation** acts as the counterparty to all trades — removing counterparty risk.
- It handles:
  - Margin collection,
  - Trade confirmation,
  - Daily MTM settlement,
  - Final settlement on expiry.

#### **7.8 Role of SEBI and RBI**

- **SEBI:** Regulates currency futures trading and protects investor interests.
- **RBI:** Regulates participation by banks and oversees the underlying currency markets.

#### **7.9 Benefits of Exchange-Traded Currency Futures**

- Transparent pricing and efficient market operations.
- Low default risk due to clearinghouse guarantee.
- Efficient hedging, speculation, and arbitrage opportunities.
- Lower transaction costs and easy access for all market participants.

## CHAPTER - 8 Accounting Taxation.

### → Introduction to Accounting Taxation:-

- ▶ Client has to maintain two separate accounting heads for initial margin and mark to market margin. These heads could be called as:
  1. Initial margin-currency futures
  2. Mark to market- currency futures

### → Accounting entries for live 'positions':-

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

- ▶ **For pay-out:** Any cash lay out on account of initial margin or mark to market has to be debited to respective heads i.e., Initial margin-currency futures or Mark to market- currency futures and bank account has to be credited.
- ▶ **For pay-in:** Any cash inflow on account of mark to market settlement, mark to market- currency futures has to be credited and Bank account has to be debited.  
*CR:= Credit.*



### → Accounting entries for expired or cancelled positions .

- ▶ At the expiry of a series of currency futures, the profit/loss should be calculated as the difference between final settlement and contract prices of all the contracts in the series and it should be passed through the profit and loss statement of the client. However, where a balance exist in the provision account created for any anticipated loss, any loss arising on final settlement should be first charged to the provision account and the balance to the profit and loss account.
- ▶ When a client defaults in making payments in respect of a daily settlement, the contract is closed out. The amount not paid by the client is adjusted against the initial margin. In the books of client, the amount so adjusted should be debited to "Mark to market currency futures accounts" with a corresponding credit to "Initial margin- currency futures account".

### → Disclosure Requirements:-

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

## CHAPTER : 9

# Regulatory frameworks for currency derivatives.

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

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

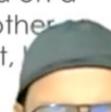
### → RBI - SEBI Standing Technical Committee on exchange traded currency and interest rate derivatives.

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



### → Foreign Exchange Management Act

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



### → Regulatory framework for exchanges.

- A recognized stock exchange having nationwide terminals or a new exchange recognized by SEBI may set up currency futures segment after obtaining SEBI's approval. The currency futures segment should fulfill the following eligibility conditions for approval:
  1. The trading should take place through an online screen-based trading system.
  2. The clearing of the currency derivatives market should be done by an independent Clearing Corporation.
  3. The exchange must have an online surveillance capability which monitors positions, prices and volumes in real time so as to deter market manipulation.



## → Regulatory framework for exchanges:-

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



## → Regulatory framework for clearing corporation.

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

## CHAPTER 10. Code of Conduct and investor protection measures.

### → General:-

(i). Integrity.

(ii). Exercise of due skill and care.

(iii). Manipulation:- A broker should not indulge in manipulative, fraudulent or deceptive transactions or schemes or spread rumours with a view to distorting market equilibrium, or making personal gains.

(iv). Malpractice:- A broker should not create false market either singly or in concert with others or indulge in any act detrimental to the investors' interest or which leads to interference with the fair and smooth functioning of the market.

(v). Compliance with statutory requirements'

## → Duty to client:-

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

## → Important Note

- ▶ A broker should extend fullest cooperation to other brokers in protecting the interests of his clients.
- ▶ A broker should carry out his transactions with other brokers and should comply with his obligations in completing the settlement of transactions with them.
- ▶ The code of conduct of sub-brokers is majorly similar to that of brokers

## Adherence to codes of conduct specific to currency derivatives segment

### General Principles

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



## → Trading Principles :-

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

## → General Guidelines :-

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

## → SEBI Complaints Redress System (SCORES)

→ online web based platform

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

## → Arbitration :-

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

