

Indian Capital Market

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What are Financial markets

Financial market is a market where financial instruments are exchanged or traded and helps in determining the prices of the assets that are traded in and is also called the price discovery process.

1. Organizations that facilitate the trade in financial products. For e.g. Stock exchanges (NYSE, Nasdaq) facilitate the trade in stocks, bonds and warrants.
2. Coming together of buyer and sellers at a common platform to trade financial products is termed as financial markets, i.e. stocks and shares are traded between buyers and sellers in a number of ways including: the use of stock exchanges; directly between buyers and sellers etc.

Financial markets may be classified on the basis of

- types of claims – debt and equity markets
- maturity – money market and capital market
- trade – spot market and delivery market
- deals in financial claims – primary market and secondary market

Indian Financial Market consists of the following markets:

- Capital Market/ Securities Market
 - Primary capital market
 - Secondary capital market
- Money Market
- Debt Market

Primary capital market- A market where new securities are bought and sold for the first time

Types of issues in Primary market

- Initial public offer (IPO) (in case of an unlisted company),
- Follow-on public offer (FPO),
- Rights offer such that securities are offered to existing shareholders,
- Preferential issue/ bonus issue/ QIB placement
- Composite issue, that is, mixture of a rights and public offer, or offer for sale (offer of securities by existing shareholders to the public for subscription).

| Difference between | |
|---|---|
| Primary market | Secondary market |
| Deals with new securities | Market for existing securities, which are already listed |
| Provides additional capital to issuer companies | No additional capital generated. Provides liquidity to existing stock |
| | |

Leading stock exchanges:

- Bombay Stock Exchange Limited
 - Oldest in Asia
 - Presence in 417 cities and towns in India
 - Trading in equity, debt instrument and derivatives
- National Stock Exchange
- New York Stock Exchange (NYSE)
- NASDAQ
- London Stock Exchange

Functions of Stock Exchanges

- Liquidity and marketability of securities
- Fair price determination
- Source of long-term funds
- Helps in capital formation
- Reflects general state of economy

Basics of Stock Market Indices:

A stock market index is the reflection of the market as a whole. It is a representative of the entire stock market. Movements in the index represent the average returns obtained by the investors. Stock market index is sensitive to the news of:

- Company specific
- Country specific

Thus the movement in the stock index is also the reflection of the expectation of the future performance of the companies listed on the exchange

Index Calculation:

Step 1: Calculate the weightage of each scrip

Weightage = $(Mcap_{it} / \text{total market cap}) * 100$

Step 2: Value of index

$$\sum_{I=1}^n \{Mcap_{it} * Weight_{it}\} / W_b$$

Where;

$Mcap_{it}$ = market cap of scrip “i” at time “t”

= price of the share * number of outstanding shares

W_b = Sum of all the market cap of all the scrips in the index during the base year

Settlement cycles:

Settlement is the process whereby the trader who has made purchases of scrip makes payment and the seller selling the scrip delivers the securities. This settlement process is carried out by Clearing Houses for the stock exchanges. The Clearing House acts like an intermediary in every transaction and acts as a seller to all buyers and buyer to all sellers.

Capital market and money market:

Financial markets can broadly be divided into money and capital market.

Money Market: Money market is a market for debt securities that pay off in the short term usually less than one year, for example the market for 90-days treasury bills. This market encompasses the trading and issuance of short term non equity debt instruments including treasury bills, commercial papers, bankers acceptance, certificates of deposits, etc.

Capital Market: Capital market is a market for long-term debt and equity shares. In this market, the capital funds comprising of both equity and debt are issued and traded. This also includes private placement sources of debt and equity as well as organized markets like stock exchanges. Capital market includes financial instruments with more than one year maturity

Significance of Capital Markets

A well functioning stock market may help the development process in an economy through the following channels:

1. Growth of savings,
2. Efficient allocation of investment resources,
3. Better utilization of the existing resources.

In market economy like India, financial market institutions provide the avenue by which long-term savings are mobilized and channelled into investments. Confidence of the

investors in the market is imperative for the growth and development of the market. For any stock market, the market Indices is the barometer of its performance and reflects the prevailing sentiments of the entire economy. Stock index is created to provide investors with the information regarding the average share price in the stock market. The ups and downs in the index represent the movement of the equity market. These indices need to represent the return obtained by typical portfolios in the country.

Generally, the stock price of any company is vulnerable to three types of news:

- Company specific
- Industry specific
- Economy specific

An all share index includes stocks from all the sectors of the economy and thus cancels out the stock and sector specific news and events that affect stock prices, (law of portfolio diversification) and reflect the overall performance of the company/equity market and the news affecting it.

The most important use of an equity market index is as a benchmark for a portfolio of stocks. All diversified portfolios, belonging either to retail investors or mutual funds, use the common stock index as a yardstick for their returns. Indices are useful in modern financial application of derivatives.

Capital Market Instruments – some of the capital market instruments are:

- Equity
- Preference shares
- Debenture/ Bonds
- ADRs/ GDRs
- Derivatives

Corporate securities

Shares

The total capital of a company may be divided into small units called shares. For example, if the required capital of a company is US \$5,00,000 and is divided into 50,000 units of US \$10 each, each unit is called a share of face value US \$10. A share may be of any face value depending upon the capital required and the number of shares into which it is divided. The holders of the shares are called share holders. The shares can be purchased or sold only in integral multiples.

Equity shares signify ownership in a corporation and represent claim over the financial assets and earnings of the corporation. Shareholders enjoy voting rights and the right to receive dividends; however in case of liquidation they will receive residuals, after all the

creditors of the company are settled in full. A company may invite investors to subscribe for the shares by the way of:

- Public issue through prospectus
- Tender/ book building process
- Offer for sale
- Placement method
- Rights issue

Stocks

The word stock refers to the old English law tradition where a share in the capital of the company was not divided into “shares” of fixed denomination but was issued as one chunk. This concept is no more prevalent, but the word “stock” continues. The word “joint stock companies” also refers to this tradition.

Debt Instruments

A contractual arrangement in which the issuer agrees to pay interest and repay the borrowed amount after a specified period of time is a debt instrument. Certain features common to all debt instruments are:

- **Maturity** – the number of years over which the issuer agrees to meet the contractual obligations is the term to maturity. Debt instruments are classified on the basis of the time remaining to maturity
- **Par value** – the face value or principal value of the debt instrument is called the par value.
- **Coupon rate** – agreed rate of interest that is paid periodically to the investor and is calculated as a percentage of the face value. Some of the debt instruments may not have an explicit coupon rate, for instance zero coupon bonds. These bonds are issued on discount and redeemed at par. Thus the difference between the investor’s investment and return is the interest earned. Coupon rates may be fixed for the term or may be variable.
- **Call option** – option available to the issuer, specified in the trust indenture, to ‘call in’ the bonds and repay them at pre determined price before maturity. Call feature acts like a ceiling for payments. The issuer may call the bonds before the stated maturity as it may recognize that the interest rates may fall below the coupon rate and redeeming the bonds and replacing them with securities of lower coupon rates will be economically beneficial. It is the same as the prepayment option, where the borrower prepays before scheduled payments or slated maturity
 - Some bonds are issued with ‘call protection feature, i.e they would not be called for a specified period of time
 - Similar to the call option of the issuer there is a put option for the investor, to sell the securities back to the issuer at a predetermined price and date. The investor may do so anticipating rise in the interest rates wherein the investor would liquidate the funds and alternatively invest in place of higher interest

- Refunding provisions – in case where the issuer may not have cash to redeem the debt instruments the issuer may issue new debt instrument and use the proceeds to repay the securities or to exercise the call option.

Debt instruments may be of various kinds depending on the repayment:

- Bullet payment – instruments where the issuer agrees to repay the entire amount at the maturity date, i.e lumpsum payment is called bullet payment
- Sinking fund payment – instruments where the issuer agrees to retire a specified portion of the debt each year is called sinking fund requirement
- Amortization – instruments where there are scheduled principal repayments before maturity date are called amortizing instruments

Debentures/ Bonds

The term Debenture is derived from the Latin word ‘debere’ which means ‘to owe a debt’. A debenture is an acknowledgment of debt, taken either from the public or a particular source. A debenture may be viewed as a loan, represented as marketable security. The word “bond” may be used interchangeably with debentures.

Debt instruments with maturity more than 5 years are called ‘bonds’

Yields

Most common method of calculating the yields on debt instrument is the ‘yield to maturity’ method, the formula is as under:

$$YTM = \text{coupon rate} + \text{prorated discount} / (\text{face value} + \text{purchase price})/2$$

Main differences between shares and debentures

- Share money forms a part of the capital of the company. The share holders are part proprietors of the company, whereas debentures are mere debt, and debenture holders are just creditors.
- Share holders get dividend only out of profits and in case of insufficient or no profits they get nothing and debenture holders being creditors get guaranteed interest, as agreed, whether the company makes profit or not.
- Share holders are paid after the debenture holders are paid their due first
- The dividend on shares depends upon the profit of the company but the interest on debentures is very well fixed at the time of issue itself.
- Shares are not to be paid back by the company whereas debentures have to be paid back at the end of a fixed period.
- In case the company is wound up, the share holders may lose a part or full of their capital but the debenture holders invariably get back their investment.
- Investment in shares is riskier, as it represents residual interest in the company. Debenture, being debt, is senior.

- Debentures are quite often secured, that is, a security interest is created on some assets to back up debentures. There is no question of any security in case of shares.
- Share holders have a right to attend and vote at the meetings of the share holders whereas debenture holders have no such rights.

Quasi debt instruments

Preference shares

Preference shares are different from ordinary equity shares. Preference share holders have the following preferential rights

- (i) The right to get a fixed rate of dividend before the payment of dividend to the equity holders.
- (ii) The right to get back their capital before the equity holders in case of winding up of the company.

Eligibility norms for public issue: ICDR Regulations

IPO

Conditions for IPO: (all conditions listed below to be satisfied)

- Net tangible assets of 3 crore in each of the preceding 3 full years, of which not more than 50% are held in monetary assets;
- Track record of distributable profits for 3 out of the immediately preceding 5 years;
- Net worth of 1 crore in each of the preceding three full years;
- Issue size of proposed issue + all previous issues made in the same financial year does not exceed 5 times its pre-issue net worth as per the audited balance sheet of the preceding financial year;
- In case of change of name within the last one year, 50% of the revenue for the preceding 1 full year earned by it from the activity indicated by the new name.

If the issuer does not satisfy any of the condition listed above, issuer may make IPO by satisfying the following:

| | | | |
|----|---|--------|---|
| 1. | Issue through book building subject to allotment of 50% of net offer to public to QIB failing which full subscription monies to be refunded | O R | <ul style="list-style-type: none"> • 15% of the cost of the project to be contributed by SCB or PFI of which not less than 10% from the appraisers + • allotment of 10% of the net offer to public to QIB failing which full subscription monies to be refunded |
|----|---|--------|---|

| | | | |
|----|--|--------|--|
| 2. | Minimum post-issue face value capital of the issuer is 10 crores | O R | Issuer to provide market-making for 2 yrs from the date of listing of the specified securities |
|----|--|--------|--|

- **Promoters' contribution:**
 - Cannot be less than 20% of the post issue capital
 - Maximum not defined, but in view of the required minimum public offer as per Rule 19 (2) (b) of Securities Contracts Regulations, promoters contribution plus any firm allotments cannot exceed 90% or 75% of the issue size as the case may be (see below).
- **Minimum Public offer:** By public offer is meant the securities being offered to public by advertisement, exclusive of promoters' contribution and firm allotments.
 - Rule 19(2)(b) of the Securities Contracts (Regulations) Rules, 1957 requires that the minimum public offer should be 25% of total issued securities should be offered to public through advertisement.
 - However, a lower public offer of 10% is allowed if the following conditions are satisfied:
 - The minimum public offer is Rs 100 crores ,and the number of securities being offered to public is at least 20 lakh securities.
 - The offer is made through mandatory book-building route, with minimum allocation of 60% to QIBs.
- **Firm allotment/ reservations:** Subject to the minimum public offer norms, issuers are free to make reservations on competitive basis (as defined hereinafter) and/or firm allotments (as defined hereinafter) to various categories of persons for the remaining part of the issue size.

Firm allotment: This implies allotment on a firm basis in public issues by an issuing company. Specified Categories for Firm allotment in public issues can be made to the following:

1. Indian and Multilateral Development Financial Institutions
2. Indian Mutual Funds
3. Foreign Institutional Investors (including non resident Indians and overseas corporate bodies)
4. Permanent / regular employees of the issuer company – *maximum 10 % of total proposed issue amount*
5. Scheduled Banks
6. Lead Merchant Banker- *subject to a ceiling of 5 % of the proposed issue.*

FPO

- **Promoters' contribution:**
 - In case of FPO, the promoters should ensure participation either to the extent of 20% of the proposed issue or their post-issue share holding must be to the extent of 20% of the post issue capital. Requirement to bring in contribution from promoters shall be optional for a company listed on a stock exchange for

at least 3 years and having a track record of dividend payment of 3 years immediately preceding the year of issue.

- As for maximum promoters' contribution, Rule 19 (2) (b) stated above shall be applicable.
- Participation by promoters in excess of above shall be treated as preferential allotment, to which preferential allotment rules will be applicable. As for preferential allotment rules, see Notes under sec. 81.
- **Net Public offer:**
 - The minimum net public offer shall be as per Rule 19 (2) (b) – see above..
- **Firm allotment / reservations:**
 - The issuer companies are free to make reservations on competitive basis (as defined above) and/or firm allotments to various categories of persons enumerated above, for the remaining issue size, that is, after considering promoters' contribution and public offer..
 - The reservation on competitive basis may also be made for retail individual shareholders (RIS). For meaning of the term RIS, see under 'categories of investors' below.

Composite Issue

- **Promoters' contribution:**
 - promoters have option to contribute either 20% of the proposed issue or 20% of post issue capital
 - the right issue component to be excluded while computing the post-issue capital
- **Others:**
 - The right issue component to be offered to the existing shareholders
 - Except the above, the rules of allotment under IPO as above shall apply

Qualified Institutional Placement

Another class of issue, not being a rights issue, which calls for resolution under sec. 81 (1A).

Condition for issue-

- The equity shares of the same class were listed on a stock exchange having nation-wide trading terminals for a period of at least one year as on the date of issuance of notice for issue of shares to QIBs
- The issue should not violate the prescribed minimum public shareholding requirements specified by the listing agreement.

Reservation

- Minimum of 10 percent of specified securities issued shall be allotted to mutual funds.
- In case the mutual funds do not agree to take shares issued under this chapter, such shares may be allotted to other QIBs.

- However, no allotment shall be made under this chapter, either directly or indirectly, to any QIB being a promoter or any person related to promoters.

Withdrawal of bid not permitted.- Investors shall not be allowed to withdraw their bids after the closure of issue.

Number of allottees.-

- minimum number of allottees shall not be less than:
 - Two, where the issue size is less than or equal to Rs. 250 crores;
 - Five, where the issue size is greater than Rs. 250 crores.
- No single allottee shall be allotted more than 50% of the issue size.

Restrictions.-

- Amount raised through the proposed placement + all previous placements made in the same financial year shall not exceed five times the net worth of the issuer as per the audited balance sheet of the previous financial year.
- Lock-in-period of one year from the date of allotment, except when sold on a recognised stock exchange.

Investments by Non- resident Investors

Provisions about investments by non-residents, non resident Indians, overseas bodies corporates and other foreign investors are made by the RBI in pursuance of FEMA provisions. An overview is as follows:

Foreign investment is freely permitted in almost all sectors in India. Under Foreign Direct Investments (FDI) Scheme, investments can be made by non-residents in the shares / convertible debentures of an Indian Company under two routes;

- Automatic Route; and
- Government Route.

Derivatives

What are derivatives? A derivative picks a risk or volatility in a financial asset, transaction, market rate, or contingency, and creates a product the value of which will change as per changes in the underlying risk or volatility. The idea is that someone may either try to safeguard against such risk (hedging), or someone may take the risk, or may engage in a trade on the derivative, based on the view that they want to execute. The risk that a derivative intends to trade is called *underlying*.

A derivative is a financial instrument, whose value depends on the values of basic underlying variable. In the sense, derivatives is a financial instrument that offers return based on the return of some other underlying asset, i.e the return is *derived* from another instrument.

The best way will be take examples of uncertainties and the derivatives that can be structured around the same.

- Stock prices are uncertain - Lot of forwards, options or futures contracts are based on movements in prices of individual stocks or groups of stocks.
- Prices of commodities are uncertain - There are forwards, futures and options on commodities.
- Interest rates are uncertain - There are interest rate swaps and futures.
- Foreign exchange rates are uncertain - There are exchange rate derivatives.
- Weather is uncertain - There are weather derivatives, and so on.

Derivative products initially emerged as a hedging device against fluctuations in commodity prices, and commodity linked derivatives remained the sole form of such products for almost three hundred years. It was primarily used by the farmers to protect themselves against fluctuations in the price of their crops. From the time it was sown to the time it was ready for harvest, farmers would face price uncertainties. Through the use of simple derivative products, it was possible for the farmers to partially or fully transfer price risks by locking in asset prices.

From hedging devices, derivatives have grown as major trading tool. Traders may execute their views on various underlyings by going long or short on derivatives of different types.

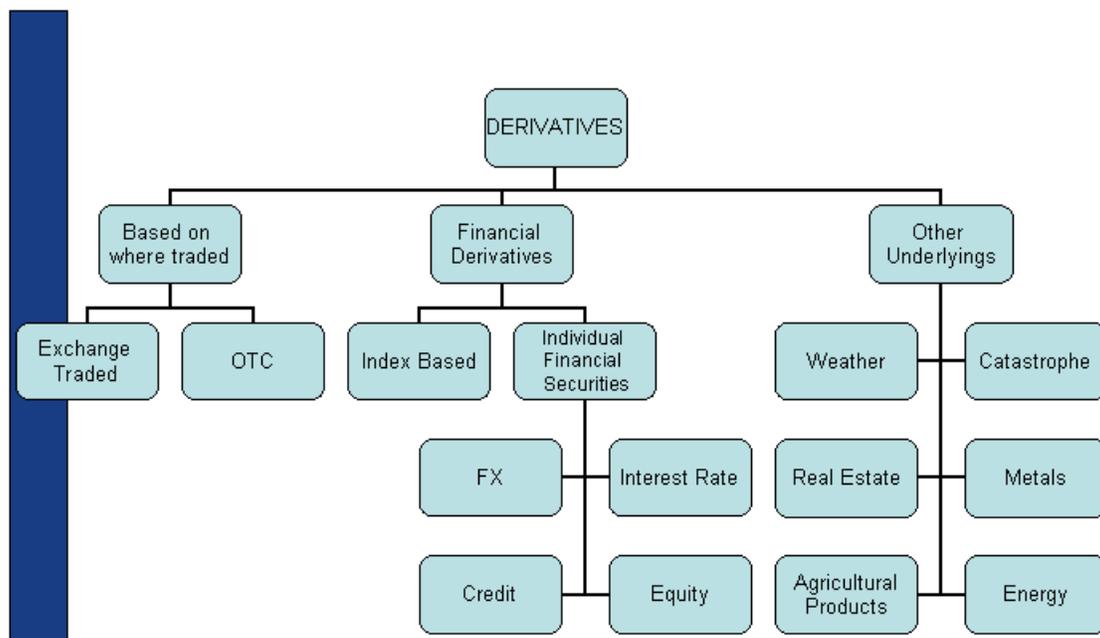
Financial derivatives:

Financial derivatives are financial instruments whose prices are derived from the prices of other financial instruments. Although financial derivatives have existed for a considerable period of time, they have become a major force in financial markets only since the early 1970s. In the class of equity derivatives, futures and options on stock

indices have gained more popularity than on individual stocks, especially among institutional investors, who are major users of index-linked derivatives. Even small investors find these useful due to high correlation of the popular indices with various portfolios and ease of use.

DERIVATIVES PRODUCTS

Some significant derivatives that are of interest to us are depicted in the accompanying graph:



Major types of derivatives

Derivative contracts have several variants. Depending upon the market in which they are traded, derivatives are classified as 1) exchange traded and 2) over the counter. The most common variants are forwards, futures, options and swaps.

Forwards:

A forward contract is a customized contract between two entities, where settlement takes place as a specific date in the future at today's predetermined price.

Ex: On 1st June, X enters into an agreement to buy 50 bales of cotton for 1st December at Rs.1000 per bale from Y, a cotton dealer. It is a case of a forward contract where X has to pay Rs.50000 on 1st December to Y and Y has to supply 50 bales of cotton.

Options:

Options are of two types – call and put. Calls give the buyer the right but not the obligation to buy a given quantity of the underlying asset, at a given price on or before a given future date. Puts give the buyer the right, but not the obligation to sell a given quantity of the underlying asset at a given price on or before a given date.

Warrants:

Options generally have maturity period of three months, majority of options that are traded on exchanges have maximum maturity of nine months. Longer-traded options are called *warrants* and are generally traded over-the-counter.

Leaps:

The acronym LEAPS means Long-term Equity Anticipation Securities. These are options having a maturity of up to three years.

Baskets:

Basket Options are currency-protected options and its return-profile is based on the average performance of a pre-set basket of underlying assets. The basket can be interest rate, equity or commodity related. A basket of options is made by purchasing different options. The payout is therefore the addition of each individual option payout

Swaps:

Swaps are private agreement between two parties to exchange cash flows in the future according to a pre-arranged formula. They can be regarded as portfolio of forward contracts. The two commonly used Swaps are

- i) *Interest Rate Swaps*: - A interest rate swap entails swapping only the interest related cash flows between the parties in the same currency.
- ii) *Currency Swaps*: - A currency swap is a foreign exchange agreement between two parties to exchange a given amount of one currency for another and after a specified period of time, to give back the original amount swapped.

FUTURES, FORWARDS AND OPTIONS

An option is different from futures in several ways. At practical level, the option buyer faces an interesting situation. He pays for the options in full at the time it is purchased. After this, he only has an upside. There is no possibility of the options position generating any further losses to him. This is different from futures, where one is free to enter, but can generate huge losses. This characteristic makes options attractive to many market participants who trade occasionally, who cannot put in the time to closely monitor their futures position.

Buying put options is like buying insurance. To buy a put option on Nifty is to buy insurance which reimburses the full amount to which Nifty drops below the strike price of the put option. This is attractive to traders, and to mutual funds creating “guaranteed return products”.

Distinction between futures and options

| Futures | Options |
|-----------------------------------|-------------------------------------|
| Exchange traded, with novation | Same as futures. |
| Exchange defines the product | Same as futures. |
| Price is zero, strike price moves | Strike price is fixed, price moves. |
| Price is zero | Price is always positive. |
| Linear payoff | Nonlinear payoff. |
| Both long and short at risk | Only short at risk. |

FORWARDS

A forward contract is an agreement to buy or sell an asset on a specified date for a specified price. One of the parties to the contract assumes a long position and agrees to buy the underlying asset on a certain specified future date for a certain specified price. The other party assumes a short position and agrees to sell the asset on the same date for the same price, other contract details like delivery date, price and quantity are negotiated bilaterally by the parties to the contract. The forward contracts are normally traded outside the exchange.

The salient features of forward contracts are:

- They are bilateral contracts and hence exposed to counter-party risk
- Each contract is custom designed, and hence is unique in terms of contract size, expiration date and the asset type and quality.
- The contract price is generally not available in public domain
- On the expiration date, the contract has to be settled by delivery of the asset, or net settlement.

The forward markets face certain limitations such as:

- Lack of centralization of trading
- Illiquidity and
- Counterparty risk

FUTURES

Futures contract is a standardized transaction taking place on the futures exchange. Futures market was designed to solve the problems that exist in forward market. A futures contract is an agreement between two parties, to buy or sell an asset at a certain time in the future at a certain price, but unlike forward contracts, the futures contracts are standardized and exchange traded To facilitate liquidity in the futures contracts, the exchange specifies certain standard quantity and quality of the underlying instrument that can be delivered, and a standard time for such a settlement. Futures’

exchange has a division or subsidiary called a clearing house that performs the specific responsibilities of paying and collecting daily gains and losses as well as guaranteeing performance of one party to other. A futures' contract can be offset prior to maturity by entering into an equal and opposite transaction. More than 99% of futures transactions are offset this way.

Yet another feature is that in a futures contract gains and losses on each party's position is credited or charged on a daily basis, this process is called daily settlement or marking to market. Any person entering into a futures contract assumes a long or short position, by a small amount to the clearing house called the margin money

The standardized items in a futures contract are:

- Quantity of the underlying
- Quality of the underlying
- The date and month of delivery
- The units of price quotation and minimum price change
- Location of settlement

Distinction between futures and forwards

| Futures | Forwards |
|--|--|
| Trade on an organized exchange | OTC in nature |
| Standardized contract terms hence more liquid | Customised contract terms hence less liquid |
| Requires margin payments | No margin payment |
| Follows daily settlement | Settlement happens at end of period |

FUTURES TERMINOLOGY

1. SPOT PRICE: The price at which an asset trades in the spot market.
2. FUTURES PRICE: The price at which the futures contract trades in the futures market.
3. CONTRACT CYCLE: The period over which a contract trades. The index futures contracts on the NSE have one month, two months and three months expiry cycles that expires on the last Thursday of the month. Thus a contract which is to expire in January will expire on the last Thursday of January.
4. EXPIRY DATE: It is the date specified in the futures contract. This is the last day on which the contract will be traded, at the end of which it will cease to exist.
5. CONTRACT SIZE: It is the quantity of asset that has to be delivered under one contract. For instance, the contract size on NSE's futures market is 200 Nifties.
6. BASIS: In the context of financial futures, basis can be defined as the futures price minus the spot price. There will be different basis for each delivery month,

for each contract. In a normal market, basis will be positive; this reflects that the futures price exceeds the spot prices.

7. **COST OF CARRY:** The relationship between futures price and spot price can be summarized in terms of what is known as the cost of carry. This measures the storage cost plus the interest paid to finance the asset less the income earned on the asset.
8. **INITIAL MARGIN:** The amount that must be deposited in the margin account at the time when a futures contract is first entered into is known as initial margin.
9. **MARK 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.
10. **MAINTENANCE MARGIN:** This is somewhat lower than the initial margin. This is set to ensure that the balance in the margin account never becomes negative. If the balance in the margin account falls below the maintenance margin, the investor receives a margin call and is expected to top up the margin account to the initial margin level before trading commences on the next day.

Stock futures contract

It is a contractual agreement to trade in stock/ shares of a company on a future date. Some of the basic things in a futures trade as specified by the exchange are:

- Contract size
- Expiration cycle
- Trading hours
- Last trading day
- Margin requirement

Advantages of stock futures trading

- Investing in futures is less costly as there is only initial margin money to be deposited
- A large array of strategies can be used to hedge and speculate, with smaller cash outlay there is greater liquidity

Disadvantages of stock futures trading

- The risk of losses is greater than the initial investment of margin money
- The futures contract does not give ownership or voting rights in the equity in which it is trading
- There is greater vigilance required because futures trades are marked to market daily

INDEX DERIVATIVES

Index derivatives are derivative contracts that has index as the underlying. The most popular index derivatives contract is index futures and index options. NSE's market index - the S&P CNX Nifty are examples of exchange traded index futures.

An index is a broad-based weighted average of prices of selected constituents that form part of the index. The rules for construction of the index are defined by the body that creates the index. Trading in stock index futures was first introduced by the Kansas City Board of Trade in 1982.

Advantages of investing in stock index futures

- Diversification of the risks as the investor is not investing in a particular stock
- Flexibility of changing the portfolio and adjusting the exposures to particular stock index, market or industry

OPTIONS

An option is a contract, or a provision of a contract, that gives one party (the option holder) the right, but not the obligation, to perform a specified transaction with another party (the option issuer or option writer) according to the specified terms. The owner of a property might sell another party an option to purchase the property any time during the next three months at a specified price. For every buyer of an option there must be a seller. The seller is often referred to as the writer. As with futures, options are brought into existence by being traded, if none is traded, none exists; conversely, there is no limit to the number of option contracts that can be in existence at any time. As with futures, the process of closing out options positions will cause contracts to cease to exist, diminishing the total number.

Thus an option is the right to buy or sell a specified amount of a financial instrument at a pre-arranged price on or before a particular date.

There are two options which can be exercised:

- Call option, the right to buy is referred to as a call option.
- Put option, the right to sell is referred as a put option.

OPTION TERMINOLOGY

1. **INDEX OPTION:** These options have the index as the underlying. Some options are European while others are American. European style options can be exercised only on the maturity date of the option, which is known as the expiry date. An American style option can be exercised at any time upto, and including, the expiry date. It is to be noted that the distinction has nothing to do with geography. Both type of the option are traded all over the world
2. **STOCK OPTION:** Stock options are options on individual stocks. A contract gives the holder the right to buy or sell shares at the specified price.

3. **BUYER OF AN OPTION:** The buyer of an option is the one who by paying the option premium buys the right but not the obligation to exercise the options on the seller/writer.
4. **WRITER OF AN OPTION:** The writer of a call/put option is the one who receives the option premium and is thereby obliged to sell/buy the asset if the buyer exercised on him.
5. **STRIKE PRICE:** The price specified in the option contract is known as the strike price or the exercise price.
6. **'IN THE MONEY' OPTION:** An 'in the money' option is an option that would lead to a positive cash flow to the holder if it was exercised immediately. A call option on the index is said to be in-the-money (ITM) when the current index stands at a level higher than the strike price (i.e. spot price > strike price). If the index is much higher than the strike price, the call is said to be deep ITM. In the case of a put, the put is ITM if the index is below the strike price.
7. **'AT THE MONEY' OPTION:** An 'at the money' option is an option that would lead to zero cash flow to the holder if it were exercised immediately. An option on the index is at the money when the current index equals the strike price (i.e. spot price = strike price).
8. **'OUT OF THE MONEY' OPTION:** An 'out of the money' (OTM) option is an option that would lead to a negative cash flow for the holder if it were exercised immediately. A call option on the index is out of the money when the current index stands at a level lower than the strike price (i.e. spot price < strike price). If the index is much lower than the strike price, the call is said to be deep OTM. In the case of a put, the put is OTM if the index is above the strike price.
9. **INTRINSIC VALUE OF AN OPTION:** The option premium can be broken down into two components - intrinsic value and time value. The intrinsic value of a call is the ITM value of the option that is if the call is OTM, its intrinsic value will be zero.
10. **TIME VALUE OF AN OPTION:** The time value of an option is the difference between its premium and its intrinsic value. Usually maximum time value exists when the option is ATM. The longer the time to expiration, the greater is an option's time value, or else equal. At expiration, an option should have no time value.

Factors affecting value of options – you would understand this while using the valuation techniques, but the terms are introduced below:

- Price – value of the call option is directly proportionate to the change in the price of the underlying. Say for example
- Time – as options expire in future, time has an effect on the value of the options.
- Interest rates and Volatility – in case where the underlying asset is a bond or interest rate, interest rate volatility would have an impact on the option prices. The statistical or historical volatility (SV) helps measure the past price

movements of the stock and helps in understanding the future volatility of the stock during the life of the option

Commodity Derivatives

Commodity Derivatives are the first of the derivatives contracts that emerged to hedge against the risk of the value of the agricultural crops going below the cost of production. Chicago Board of Trade was the first organized exchange, established in 1848 to have started trading in various commodities. Chicago Board of Trade and Chicago Mercantile Exchange are the largest commodities exchanges in the world

It is important to understand the attributes necessary in a commodity derivative contract:

- a) Commodity should have a high shelf life – only if the commodity has storability, durability will the carriers of the stock feel the need for hedging against the price risks or price fluctuations involved
- b) Units should be homogenous – the underlying commodity as defined in the commodity derivative contract should be the same as traded in the cash market to facilitate actual delivery in the cash market. Thus the units of the commodity should be homogenous
- c) Wide and frequent fluctuations in the commodity prices – if the price fluctuations in the cash market are small, people would feel less incentivised to hedge or insure against the price fluctuations and derivatives market would be of no significance. Also if by the inherent attributes of the cash market of the commodity, the cash market of the commodity was such that it would eliminate the risks of volatility or price fluctuations, derivatives market would be of no significance. Taking an oversimplified example, if an investor had purchased 100 tons of rice @ Rs. 10/ kg in the cash market and is of the view that the prices may fall in the future, he may short a rice future at Rs. 10/ kg to hedge against the fall in prices. Now if the prices fall to Rs. 2/ kg, the loss that the investor makes in the cash market may be compensated by squaring of the short position thus eliminating the risk of price fluctuations in the commodity market

Commodity derivative contracts are standardized contracts and are traded as per the investors needs. The needs of the investor may be instrumental or convenience, depending upon the needs, the investor would trade in a derivative product. Instrumental risks would relate to price risk reduction and convenience needs would relate to flexibility in trade or efficient clearing process.

Commodity Derivatives in India

Commodity derivatives in India were established by the Cotton Trade Association in 1875, since then the market has suffered from liquidity problems and several regulatory dogmas. However in the recent times the commodity trade has grown significantly and today there are 25 derivatives exchanges in India which include four national commodity exchanges; National Commodity and Derivatives Exchange (NCDEX), National Multi-

Commodity Exchange of India (NCME), National Board of Trade (NBOT) and Multi Commodity Exchange (MCX)

NCDEX

It is the largest commodity derivatives exchange in India and is the only commodity exchange promoted by national level institutions. NCDEX was incorporated in 2003 under the Companies Act, 1956 and is regulated by the Forward Market Commission in respect of the futures trading in commodities. NCDEX is located in Mumbai

MCX

MCX is recognised by the government of India and is amongst the world's top three bullion exchanges and top four energy exchanges. MCX's headquarter is in Mumbai and facilitates online trading, clearing and settlement operations for the commodities futures market in the country.

Over the Counter Derivatives (OTC Derivatives)

Derivatives that are privately negotiated and not traded on the stock exchange are called OTC Derivatives.

Interest Rate Derivatives (IRD)

In the OTC derivatives segment, interest rate derivatives (IRDs) are easily the largest and therefore the most significant globally. In markets with complex risk exposures and high volatility Interest Rate Derivatives are an effective tool for management of financial risks. In IRDs, the parties are trying to trade in the volatility of interest rates. Interest rates affect a whole spectrum of financial assets – loans, bonds, fixed income securities, government treasuries, and so on. In fact, changes in interest rates have major macro economic implications for various economic parameters – exchange rates, state of the economy, and thereby, the entire spectrum of the financial sector.

Definition of IRDs

Interest Rate Derivatives (IRD) are derivatives where the underlying risk interest rates. Hence, depending on the type of the transaction, parties either swap interest at a fixed or floating rate on a notional amount, or trade in interest rate futures, or engage in forward rate agreements. As in case of all derivatives, the contract is mostly settled by net settlement, that is payment of difference amount.

Types:

The basic IRDs are simple and mostly liquid and are called *vanilla* products, whereas derivatives belonging to the least liquid category are termed as *exotic* interest rate derivatives. Some vanilla products are:

- 1) Interest Rate Swaps
- 2) Interest Rate Futures
- 3) Forward Rate Agreements
- 4) Interest rate caps/floors

Interest Rate Swaps – These are derivatives where one party exchanges or swaps the fixed or the floating rates of interest with the other party. The interest rates are calculated on the notional principal amount which is not exchanged but used to determine the quantum of cashflow in the transaction. Interest rate swaps are typically used by corporations to typically alter the exposure to fluctuations on interest rates by swapping fixed rate obligations for floating and vice-a-versa or to obtain lower rates of interest than otherwise available.

Interest rate swaps can be a) *fixed-for-fixed rate swap*, b) *fixed-for-floating rate swap*, c) *floating-for-floating rate swap* and so on. As the names suggest interest rates are being

swapped, either in the same currency or different currency and there could be as many customized variations of the swaps, as desired.

This can be further explained simply. For instance if there are two borrowers in the market where Borrower A has borrowed at a fixed rate but wants a floating rate of interest and Borrower B has borrowed with floating and wants a fixed rate of interest. IN such a scenario they can swap their existing interest rates without any further borrowing. This would make the transaction of the two borrowers independent of the underlying borrowings. For instance if a company has investments with a floating rate of interest of 4.7% and can obtain fixed interest rate of 4.5% then the company may enter into a fixed-for-floating swap and earn a profit of 20 basis points.

Forward Rate Agreements (FRAs) – These are cash settled forward contracts on interest rate traded among international banks active in the Eurodollar market.

These are contracts between two parties where the interest rates are to be paid/ received on an obligation at a future date. The rate of interest, notional amount and expiry date is fixed at the time of entering the contract and only difference in the amount is paid/ received at the end of the period. The principal is called notional because while it determines the amount of payment, actual exchange of principal never takes place. For instance if A enters an FRA with B and receives a fixed rate of interest say 6% on principal, say P for three years and B receives floating rate on P. If at the end of contract period of C the LIBOR rate is 6.5% then A will make a payment of the differential amount, (that is .5% on the principal P) to B. The settlement mechanism can be further explained as follows:

For instance at a notional principal of USD 1 million where the borrower buys an FRA for 3 months that carries an interest rate of 6% and the contract run is 6 months. At the settlement date the settlement rate is at 6.5%. Then the settlement amount will be calculated in the following manner:

Settlement amount = [(Difference between settlement rate and agreed rate)* contract run* principal amount]/[(36,000 or 36500) + (settlement rate*contract period)]

That is, in the above problem

Settlement amount = [(6.5-6)*180*USD 1 million]/[36,000 + (6.5%* 90)

(Note: 36,000 is used for currencies where the basis of calculation is actual/360 days and 36,500 is used for currencies where the basis of calculation of interest is actual/365 days)

Interest Rate Caps/Floors: Interest rate caps/floors are basically hedging instruments that can give the investor both benefits of fixed rate interest and fluctuating rate interest. The person providing an interest rate cap is the protection seller. The seller assures the borrower or the buyer that in case of high volatility in the interest rates, if interest rate moves beyond the cap the borrower will be paid amount beyond the cap. In case the market rates do not go beyond the cap limit, the seller need not pay anything to the

borrower. In such a situation as long as the interest rates are within the cap limit borrower enjoys the floating rates and if rates move above the cap limit he will be compensated with the requisite amount by the protection seller and the borrower will pay fixed to the capped rate of interest. The same is the case when a person enters a Interest Rate Floor transaction.

In case of Interest Rate Cap transaction the borrower is expects the market interest rates to go up in the future and hedge against the movement of the market rates. Interest Rate Caps/Floors transactions are ideally of one, two, five or ten years and the desired level of protection the buyer seeks are 6%, 8% or 10%.