

## **Introduction to Derivatives (Part one)**

A Derivative is an instrument whose value is derived from the value of underlying assets, which may be commodities, foreign exchange, bonds, stocks or even stocks indices, etc. For example, in the case of a rice derivative, say 'rice futures,' the underlying asset is rice, which is a commodity. The value of 'rice futures' will be derived from the current price of rice. Similarly, in the case of 'index futures,' say NSE Index Futures, the NSE Index (the nifty) is the underlying asset.

### **Forward Contracts**

In a forward contract, two parties agree to do a trade at some future date, at a stated price and quantity. However, no money is exchanged.

Forward markets worldwide are cited by several problems:-

- Lack of centralized trading.
- Illiquidity.
- Counter party Risk and Exposure.

### **Future Basics**

#### **Future Contracts**

A "futures" contract is an exchange traded forward contract to buy or sell a pre-determined quantity of an asset on a pre-determined future date at a pre-determined price. Contracts are standardized and there's centralized trading ensuring liquidity.

They encompass the sale of financial instruments or physical commodities for future delivery. Futures contracts try to predict what the value of an index or commodity will be at some date in the future. The futures contract will state the price that will be paid and the date of delivery.

Futures contracts are marked to market each day at their end-of-day settlement prices, and the resulting daily gains and losses are passed through to the gaining or losing accounts. Futures contracts can be terminated by an offsetting transaction (i.e., an equal and opposite transaction to the one that opened the position) executed at any time prior to the contract's expiration. The vast majority of futures contracts are terminated by offset or a final cash payment rather than by delivery.

*Did you know?* Trading in futures originated from Japan during the 18th century and was primarily used for the trading of rice and silk. It wasn't until the 1850s that the U.S. started using futures markets for grain and other agriculture entities. Futures on financial instruments came much later

## Features of Future Contracts

- **Contract Guarantee:** Guaranteed by the clearinghouse of the exchange on which the contracts are executed.
- **Cash Flows:** Futures contracts require daily payments of profits and losses.
- **Contract Terms:** All terms except for the underlying price of the commodity are standardized.
- **Liquidity:** Very easy to enter or exit a position because contracts are traded on an exchange.

## Process of Price Discovery

Futures prices increase or decrease largely because of the innumerable factors that influence buyers' and sellers' expectations about what a particular underlying will be worth at a given time in the future. As new supply and demand developments occur and as more current information becomes available, these judgments are reassessed and the price of a particular futures contract may be bid upward or downward. This process of reassessment of price discovery is continuous.

On any given day the price of a July futures contract will reflect the consensus of buyers' and sellers' current opinions about what the value of the underlying(index/stock/commodity) will be when the contract expires in July. As new or more accurate information becomes available or as expectations change, the July futures price may increase or decrease.

## Application of Futures

- **Speculation**
- **Hedging**
- **Risk Management**

## Basic Positions

There are two positions that you can take in a futures contract:

- **Long** - this is when you buy a futures contract, and agree to receive delivery of the underlying asset (stocks/indices/commodities).

**For e.g.:** If you buy a Satyam Computers 26jun2003 futures contract, then you have agreed to accept the delivery of the underlying asset at the agreed price on the expiration date.

- **Short** - this is when you sell a futures contract, and agree to make delivery of the underlying asset (stocks/indices/commodities).

**For e.g.:** If you sell a Satyam Computers 26jun2003 futures contract, then you have agreed to make the delivery of the underlying asset at the agreed price on the expiration date.

In India, we have two type of equity futures: -

- **Index Futures**
- **Individual Stock/Equity Futures**

### Index Futures

An index future is a derivative whose value is derived from the value of the underlying asset (e.g. S&P CNX NIFTY, BSE Sensex). While trading on index futures, the investors are basically buying and selling the basket of securities comprising the index in their relative weights. Index Future contracts are settled in cash.

### Individual Stock/Equity Futures

A stock future is a derivative whose value is derived from the value of the underlying asset (e.g. Reliance, Satyam). Stock Future contracts are settled in cash.

## **Expiration Date**

All Future contracts have specified date for maturity; known as expiration date. If the last Thursday is a trading holiday, the contracts expire on the previous trading day.

After this date, the future contracts are worthless. Future contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). On expiry of the near month contract, new contracts are introduced on the trading day following the expiry of the near month contract. The new contracts are introduced for three-month duration.

**In India, last Thursday of every month's contract is taken as the expiration date**

<b>Option Contract</b>	<b>Expiry Date</b>
Jan 2003	30Jan2003
Feb2003	27Feb2003
March2003	27Mar2003

At any given point of time, 3-month contracts would be available for trading. In the beginning of January; Jan, Feb and Mar future contracts are available. After the expiry of Jan future we would have Feb, Mar and Apr future contracts available and so on.

## **Size of the Futures Contract**

The contract size for all futures contracts was kept at Rs 2,00,000 (\*as per the base price). The permitted lot size for a nifty futures contract is 200(taking the base index price as 1000).

## Basic Trading Strategies

### Buying (Long Position) to Profit from an Expected Price Increase

Someone expecting the price of a particular underlying to increase over a given period of time can seek to profit by **buying** futures contracts. If correct in forecasting the direction and timing of the price change, the futures contract can be sold later for the higher price, thereby yielding a profit. If the price declines rather than increases, the trade will result in a loss.

For example, assume it's now July. The August index futures price is presently quoted at Rs1120 per unit and over the coming month you expect the price to increase. You decide to buy one August index futures contract. Further assume that by the beginning of August index futures price rise to Rs 1180 per unit and you decide to take your profit by selling. Since each contract is of 200-lot size, your Rs60 per unit profit would be Rs 12, 000 for the contract the less transaction costs.

		Price per unit	Value of 200 lot contract
June	Buy 1 august nifty futures contract	Rs 1120	Rs 2, 24, 000
August	Sell 1 august nifty futures contract t	Rs 1180	Rs 2, 36, 000
	Gain	Rs 60	Rs 12, 000*

\*Excluding transaction costs

In case the futures price goes below the price at which you entered the position, a loss would be incurred as shown in the table below: -

		Price per unit	Value of 200 lot contract
June	Buy 1 august nifty futures contract	Rs 1120	Rs 2, 24, 000
August	Sell 1 august nifty futures contract t	Rs 1020	Rs 2, 04, 000
	Loss	Rs 100	Rs 20, 000*

\*Excluding transaction costs

### Selling (Short Position) to Profit from an Expected Price Decrease

Here, Instead of first buying a futures contract, you first sell a futures contract. If, as you expect, the price does decline, a profit can be realized by later purchasing an offsetting futures contract at the lower price. The gain per unit will be the amount by which the purchase price is below the earlier selling price. Daily profits or losses are credited or debited to the account in the same way.

For example, assume it's now July. The August index futures price is presently quoted at Rs1120 per unit and over the coming month you expect the price to

decrease. You decide to sell one August index futures contract. Further assume that by the beginning of August index futures price fell to Rs 1020 per unit and you decide to take your profit by buying the futures contract. Since each contract is of 200-lot size, your Rs100 per unit profit would be Rs 20, 000 for the contract the less transaction costs.

		Price per unit	Value of 200 lot contract
June	Sell 1 august nifty futures contract	Rs 1120	Rs 2, 24, 000
August	Buy 1 august nifty futures contract t	Rs 1020	Rs 2, 04 000
	Profit	Rs 100	Rs 20, 000*

\*Excluding transaction costs

In case the futures price goes above the price at which you entered the position, a loss would be incurred as shown in the table below: -

		Price per unit	Value of 200 lot contract
June	Sell 1 august nifty futures contract	Rs 1120	Rs 2, 24, 000
August	Buy 1 august nifty futures contract t	Rs 1180	Rs 2, 36, 000
	Loss	Rs 60	Rs 12, 000*

\*Excluding transaction costs

We have covered only the basic trading strategies. There are other strategies like spreads, hedging strategies; arbitrage techniques and other advanced trading strategies. For more information please feel free to contact us at:

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