

# **Hand book on Derivatives Trading**



**NATIONAL STOCK EXCHANGE  
OF INDIA LIMITED**

<b>QUESTIONS &amp; ANSWERS</b>
--------------------------------

**What are various types of derivatives?**

**Futures :** 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. Presently Index futures on S&P CNX NIFTY and CNX IT , Stock futures on certain specified Securities and Interest Rate Futures are available for trading at NSE. All the futures contracts are settled in cash.

**Options :** An Option is a contract which gives the right, but not an obligation, to buy or sell the underlying at a stated date and at a stated price. While a buyer of an option pays the premium and buys the right to exercise his option, the writer of an option is the one who receives the option premium and therefore obliged to sell/buy the asset if the buyer exercises it on him.

Options are of two types - Calls and Puts options :

"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 underlying asset at a given price on or before a given future date. Presently Index Options on S&P CNX Nifty and CNX IT and options on certain specified securities are available for trading at NSE. All the options contracts are settled in cash.

Further the Options are classified based on type of exercise. At present the Exercise style can be European or American.

**American Option** - American options are options contracts that can be exercised at any time upto the expiration date. Options on individual securities available at NSE are American type of options.

**European Options** - European options are options that can be exercised only on the expiration date . S&P CNX Nifty and CNX IT options available at NSE are European type of option.

**Why Should I trade in derivatives?**

Futures trading will be of interest to those who wish to:

- 1) Invest - take a view on the market and buy or sell accordingly.

- 2) **Price Risk Transfer- Hedging** - Hedging is buying and selling futures contracts to offset the risks of changing underlying market prices. Thus it helps in reducing the risk associated with exposures in underlying market by taking a counter- positions in the futures market. For example, the hedgers who either have security or plan to have a security is concerned about the movement in the price of the underlying before they buy or sell the security. Typically he would take a short position in the Futures markets, as the cash and futures price tend to move in the same direction as they both react to the same supply/demand factors.
- 3) **Arbitrage** - Since the cash and futures price tend to move in the same direction as they both react to the same supply/demand factors, the difference between the underlying price and futures price called as basis. Basis is more stable and predictable than the movement of the prices of the underlying or the Futures price. Thus arbitrageur would predict the basis and accordingly take positions in the cash and future markets.
- 4) **Leverage**- Since the investor is required to pay a small fraction of the value of the total contract as margins, trading in Futures is a leveraged activity since the investor is able to control the total value of the contract with a relatively small amount of margin. Thus the Leverage enables the traders to make a larger profit or loss with a comparatively small amount of capital.

Options trading will be of interest to those who wish to :

- 1) Participate in the market without trading or holding a large quantity of stock
- 2) Protect their portfolio by paying small premium amount

Benefits of trading in Futures and Options.

- 1) Able to transfer the risk to the person who is willing to accept them
- 2) Incentive to make profits with minimal amount of risk capital
- 3) Lower transaction costs
- 4) Provides liquidity, enables price discovery in underlying market
- 5) Derivatives market are lead economic indicators.
- 6) Arbitrage between underlying and derivative market.
- 7) Eliminate security specific risk.

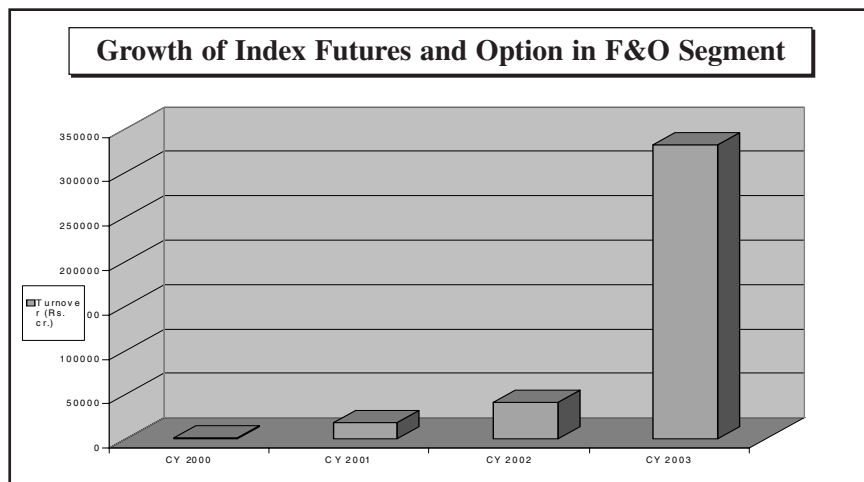
### **What are the benefits of trading in Index Futures compared to any other security ?**

An investor can trade the 'entire stock market' by buying index futures instead of buying individual securities with the efficiency of a mutual fund.

The advantages of trading in Index Futures are:

- The contracts are highly liquid
- Index Futures provide higher leverage than any other stocks
- It requires low initial capital requirement
- It has lower risk than buying and holding stocks
- It is just as easy to trade the short side as the long side
- Only have to study one index instead of 100's of stocks
- Settled in cash and therefore all problems related to bad delivery, forged, fake certificates, etc can be avoided.

The growth in turnover of index futures and options is depicted in the graph below:



### **How do I start trading in the derivatives market?**

Futures/ Options contracts in both index as well as stocks can be bought and sold through the trading members of National Stock Exchange. Some of the trading members also provide the internet facility to trade in the futures and options market. You are required to open an account with one of the trading members and complete the related formalities which include

signing of member-constituent agreement, constituent registration form and risk disclosure document. The trading member will allot to you an unique client identification number. To begin trading, you must deposit cash and/or other collaterals with your trading member as may be stipulated by him.

### **What is the Expiration Day ?**

It is the last day on which the contracts expire. Futures and Options contracts expire on the last Thursday of the expiry month. If the last Thursday is a trading holiday, the contracts expire on the previous trading day. For E.g The January 2004 contracts mature on January 29, 2004.

### **What is the contract cycle for Equity based products in NSE ?**

Futures and Options contracts have a maximum of 3-month trading cycle - the near month (one), the next month (two) and the far month (three). New contracts are introduced on the trading day following the expiry of the near month contracts. The new contracts are introduced for a three month duration. This way, at any point in time, there will be 3 contracts available for trading in the market (for each security) i.e., one near month, one mid month and one far month duration respectively. For example on January 26,2004 there would be three month contracts i.e. Contracts expiring on January 29,2004, February 26, 2004 and March 25, 2004. On expiration date i.e January 29,2004, new contracts having maturity of April 29,2004 would be introduced for trading.

### **What is the concept of In the money, At the money and Out of the money in respect of Options?**

**In- the- money options (ITM)** - An in-the-money option is an option that would lead to positive cash flow to the holder if it were exercised immediately. A Call option is said to be in-the-money when the current price stands at a level higher than the strike price. If the Spot price is much higher than the strike price, a Call is said to be deep in-the-money option. In the case of a Put, the put is in-the-money if the Spot price is below the strike price.

**At-the-money-option (ATM)** - An at-the money option is an option that would lead to zero cash flow if it were exercised immediately. An option on the index is said to be "at-the-money" when the current price equals the strike price.

**Out-of-the-money-option (OTM)** - An out-of-the-money Option is an option that would lead to negative cash flow if it were exercised immediately. A Call option is out-of-the-money when the current price stands at a level which is less than the strike price. If the current price is much lower than the strike price the call is said to be deep out-of-the money. In case of a Put, the Put is said to be out-of-the-money if current price is above the strike price.

**Is there any Margin payable?**

Yes. Margins are computed and collected on-line, real time on a portfolio basis at the client level. Members are required to collect the margin upfront from the client & report the same to the Exchange.

**How are the contracts settled?**

All the Futures and Options contracts are settled in cash on a daily basis and at the expiry or exercise of the respective contracts as the case may, be. Clients/Trading Members are not required to hold any stock of the underlying for dealing in the Futures / Options market. All out of the money and at the money option contracts of the near month maturity expire worthless on the expiration date.

**What are the Contract Specifications of Equity based derivatives traded in NSE.**

***Underlying***

- |    |  |  |
|----|--|--|
| 1. | Index Futures and Options                              | : S&P CNX Nifty and CNX IT                       |
| 2. | Futures/Options on Individual<br>Individual Securities | : Individual Securities, At<br>present 53 stocks |

***Exchange of Trade***

National Stock Exchange of India Limited

***Security descriptor***

- |    |   |
|----|---|
| 1. | S&P CNX Nifty Futures N FUTIDX NIFTY MATURITY DATE                                |
| 2. | S&P CNX Nifty Options N OPTIDX NIFTY MATURITY DATE<br>STRIKE PRICE OP TYP         |
| 3. | Futures on individual securities N FUTSTK ABC MATURITY DATE                       |
| 4. | Options on individual securitiesN OPTSTK ABC MATURITY DATE<br>STRIKE PRICE OP TYP |

***Contract Size***

- |    |   |   |
|----|---|---|
| 1. | S&P CNX Nifty Futures / S&P CNX Nifty Options | Permitted lot size 200 and multiples there of (minimum value Rs.2 lakh) |
| 2. | Futures / Options on individual securities    | Minimum value of Rs 2 Lakh for each Individual Security                 |

***Strike price interval***

- |    |                                    |   |
|----|------------------------------------|---|
| 1. | S&P CNX Nifty Options              | Rs. 10/-  |
| 2. | Options on individual securities : | Between Rs.2.50 and Rs. 100.00 depending on the price of underlying   |
|    | Price Steps                        | Rs. 0.05  |
|    | Price Bands                        | Not Applicable  |
|    | Trading Cycle                      | Maximum of three month trading cycle - near month(one), the next month (two) and the far month (three). New series of contract will be introduced on the next trading day following expiry of near month contract |
|    | Expiry date                        | The last Thursday of the expiry month or the Previous trading day if the last Thursday of the month is a trading holiday  |

***Settlement basis***

- |    |  |  |
|----|--|--|
| 1. | Index Futures / Futures on individual securities | Mark to Market and final settlement be settled in cash on T+1 basis          |
| 2. | Index Options                                    | Premium settlement on T+1 Basis and Final Exercise settlement on T+1 basis   |
| 3. | Options on individual securities                 | Premium settlement on T+1 basis and option Exercise settlement on T+2 basis. |

***Settlement price***

- |    |                                 |  |
|----|---------------------------------|--|
| 1. | S&P CNX Nifty Futures / Futures | Daily settlement price will be the closing price on individual securities of the |
|----|---------------------------------|--|

	futures contracts for the trading day and the final settlement price shall be the closing value of the underlying index/ security on the last trading day
Index Options /options on individual security	The settlement price shall be closing price of underlying security

What are the contract specifications of the Interest rate Derivatives traded in National Stock Exchange.

### **Contract Specification**

#### ***Security descriptor***

The security descriptor for the interest rate future contracts is:

Market type : N

Instrument Type : FUTINT

Underlying : Notional T- bills and Notional 10 year bond (coupon bearing and non-coupon bearing)

Expiry Date : Last Thursday of the Expiry month.

Instrument type represents the instrument i.e. Interest Rate Future Contract.

Underlying symbol denotes the underlying.

Expiry date identifies the date of expiry of the contract

#### ***Underlying Instrument***

Interest rate futures contracts are available on Notional T- bills , Notional 10 year zero coupon bond and Notional 10 year coupon bearing bond stipulated by the Securities & Exchange Board of India (SEBI).

#### ***Trading cycle***

The interest rate future contract shall be for a period of maturity of one year with three months continuous contracts for the first three months and fixed quarterly contracts for the entire year. New contracts will be introduced on the trading day following the expiry of the near month contract.



The schedule of contracts for the next one year will be as follows :

Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04
Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04
Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04
Sep-03	Dec-03	Dec-03	Dec-03	Mar-04	Mar-04	Mar-04	Jun-04	Jun-04	Jun-04	Sep-04	Sep-04
Dec-03	Mar-04	Mar-04	Mar-04	Jun-04	Jun-04	Jun-04	Sep-04	Sep-04	Sep-04	Dec-04	Dec-04
Mar-04	Jun-04	Jun-04	Jun-04	Sep-04	Sep-04	Sep-04	Dec-04	Dec-04	Dec-04	Mar-05	Mar-05

### ***Expiry day***

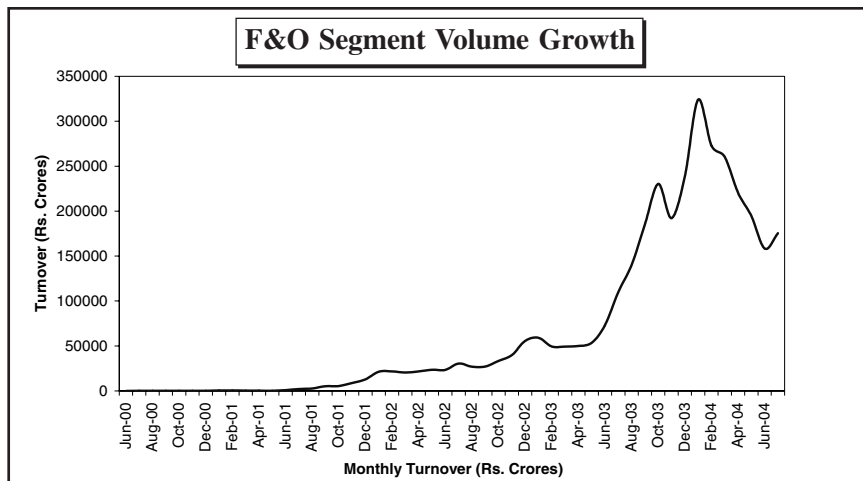
Interest rate future contracts shall expire on the last Thursday of the expiry month. If the last thursday is a trading holiday, the contracts shall expire on the previous trading day.

Further, where the last Thursday falls on the annual or half-yearly closing dates of the bank, the expiry and last trading day in respect of these derivatives contracts would be pre-poned to the previous trading day.

### ***Product Characteristics***

<b>Contract underlying</b>	<b>Notional 10 year bond (6 % coupon )</b>	<b>Notional 10 year zero coupon bond</b>	<b>Notional 91 day T-Bill</b>
Contract descriptor	N FUTINT NSE10Y06 26JUN2003	N FUTINT NSE10YZC 26JUN2003	N FUTINT NSETB91D 26JUN2003
Contract Value	Rs.2,00,000		
Lot size	2000		
Tick size	Re.0.01		
Expiry date	Last Thursday of the month		
Contract months	The contracts shall be for a period of a maturity of one year with three months continuous contracts for the first three months and fixed quarterly contracts for the entire year.		
Price limits	Not applicable		
Settlement Price	As may be stipulated by NSCCL in this regard from time to time.		

The trading volumes on NSE's Derivatives market has seen a steady increase since the launch of the first derivative contract. The average daily turnover now exceeds Rs. 8000 cr on daily basis.



## A FEW BASIC STRATEGIES

### Have a view on the market?

- A. Assumption: Bullish on the market over the short term

Possible Action by you: Buy Nifty calls

*Example:*

Current Nifty is 1880. You buy one contract of Nifty near month calls for Rs.20 each. The strike price is 1900, i.e. 1.06% out of the money. The premium paid by you will be (Rs.20 \* 200) Rs.4000. Given these, your break-even level Nifty is 1920 (1900+20). If at expiration Nifty advances by 5%, i.e. 1974, then

Nifty expiration level	1974.00
Less Strike Price	1900.00
Option value	74.00 (1974-1900)
Less Purchase price	20.00
Profit per Nifty	54.00
Profit on the contract	Rs.10800 (Rs. 54* 200)

**Note :**

- 1) If Nifty is at or below 1900 at expiration, the call holder would not find it profitable to exercise the option and would lose the entire premium, i.e. Rs.4000 in this example. If at expiration, Nifty is between 1900 (the strike price) and 1920 (breakeven), the holder could exercise the calls and receive the amount by which the index level exceeds the strike price. This would offset some of the cost.
  - 2) The holder, depending on the market condition and his perception, may sell the call even before expiry.
- B. Assumption: Bearish on the market over the short term  
Possible Action by you: Buy Nifty puts

*Example:*

Nifty in the cash market is 1880. You buy one contract of Nifty near month puts for Rs.17 each. The strike price is 1840, i.e. 2.12% out of the money. The premium paid by you will be Rs.3400 (17\*200). Given these, your break-even level Nifty is 1823 (i.e. strike price less the premium). If at expiration Nifty declines by 5%, i.e.1786, then

Put Strike Price	1840
Nifty expiration level	1786
Option value	54 (1840-1786)
Less Purchase price	17
Profit per Nifty	37
Profit on the contract	Rs.7400 (Rs.37* 200)

**Note :**

- 1) If Nifty is at or above the strike price 1840 at expiration, the put holder would not find it profitable to exercise the option and would lose the entire premium, i.e. Rs.3400 in this example. If at expiration, Nifty is between 1840 (the strike price) and 1823 (breakeven), the holder could exercise the puts and receive the amount by which the strike price exceeds the index level. This would offset some of the cost.

- 2) The holder, depending on the market condition and his perception, may sell the put even before expiry.

### **Use Put as a portfolio Hedge?**

Assumption: You are concerned about a downturn in the short term in the market and its effect on your portfolio. The portfolio has performed well and you expect it to continue to appreciate over the long term but would like to protect existing profits or prevent further losses.

Possible Action: Buy Nifty puts.

#### *Example:*

You held a portfolio with say, a single stock, HLL valued at Rs.10 Lakhs (@ Rs.200 each share). Beta of HLL is 1.13. Current Nifty is at 1880. Nifty near month puts of strike price 1870 is trading at Rs.15. To hedge, you bought 3 puts 600{Nifties, equivalent to Rs.10 lakhs\*1.13 (Beta of HLL) or Rs.1130000}. The premium paid by you is Rs.9000, (i.e.600 \* 15). If at expiration Nifty declines to 1800, and Hindustan Lever falls to Rs.195, then

Put Strike Price	1870
Nifty expiration level	1800
Option value	70 (1870-1800)
Less Purchase price	15
Profit per Nifty	55
Profit on the contract	Rs.33000 (Rs.55* 600)
Loss on Hindustan Lever	Rs.25000
Net profit	Rs. 8000

**Disclaimer**

Market conditions can lead to substantial profit or loss. Investors are advised to seek adequate product and market knowledge as well as proper investment advice before trading futures. The material provided here is for general information purposes only. While care has been taken to ensure accuracy, the information furnished to reader with no warranty as to the accuracy or completeness of its contents and on condition that any changes, omissions or errors shall not be made the basis for any claim, demand or cause for action. "Standard & Poor's" and "S&P" are trademarks of The McGraw-Hill Companies, Inc. and have been licensed for use by India Index Services & Products Limited, which has sublicensed such marks to NSE. The S&P CNX Nifty Index is not compiled, calculated or distributed by Standard & Poor's and Standard & Poor's makes no representation regarding the advisability of investing in the products that utilise any such Index as a component.



## **NATIONAL STOCK EXCHANGE OF INDIA LTD.**

"Exchange Plaza", Bandra - Kurla Complex,  
Bandra (East), Mumbai - 400 051. INDIA.

Tel. : 91-22-2659 8100-8114/56418100-08 • Fax : 91-22-26598120

Website : [www.nseindia.com](http://www.nseindia.com)

August 2004