Demystifying Derivatives

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for WIN (Wise Investors Network), Chennai

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DERIVATIVE

- Financial Instrument
- derives its value from an underlying security
- legally binding agreements (made on the trading screen of Stock Exchanges)
- to buy or sell an asset in future.
- The asset can be **Share, Index, interest rate, bond, rupee dollar exchange, sugar, oil, cotton, coffee** etc.

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Securities Contracts (Regulation) Act, 1956

- "Derivatives" 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.

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Derivatives Explanation

- An easy way to think of derivatives is as a "side bet" on interest rates, exchange rates, commodity prices, and practically ANYTHING that you can think of.

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Terminologies

- Long
- Short
- Write = Sell

- All Stock Names – illustrative purpose ONLY

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Derivatives – History

- Finds existence in Mahabharata.
- Traces of derivative contracts date back to the ages before Jesus Christ.
- The first 'futures' contracts can be traced to the Yodoya rice market in Osaka, Japan around 1650.
- These were evidently standardised contracts which made them much like today's futures.

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Derivatives – History [India]

- The commodity derivative market has been functioning in India since the 19th century with organized trading in cotton through the establishment of Cotton Trade Association in 1875.
- Since then contracts on various other commodities have been introduced as well.
- Exchange traded financial derivatives were introduced in India in June 2000 at the two major stock exchanges, NSE and BSE. There are various contracts currently traded on these exchanges.

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Types of Derivatives

- Forwards
- **Futures**
- **Options**
- Swaps

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Forwards

- A forward contract is **customized** contract between two entities where settlement takes place on a specific date in the future at today's pre-agreed price.
- Drawbacks :
  1. Counter Party Risk
  2. Liquidity & Transparency
  3. Squaring off
  4. Lack of Centralization of trading

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What are Futures ?

- An agreement between two parties to buy or sell an asset at a certain time in the future at a certain price .
- Futures contracts are special types of forward contracts
- Standardized Exchange-traded contracts.

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Futures – Standard Terms / Specifications

- Contract Cycle : 3 months
- Contract size [Market Lot / Quantity]
  Nifty – 50 ; SBIN - 1500
- Expiration Date – Last Thursday of Every Month
  Jun Series **30-Jun-22**; Jul **28-Jul-22**; Aug **25-Aug-22**
- Minimum Price Quotation [Tick size] – Re. 0.05
- Active contracts - 3 nearest months
- Settlement basis – Stocks (where underlying is Stock)

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Futures – Other Terminologies

- Spot Price, Future Price
- Cost of Carry
- Initial Margin
- Maintenance Margin
- Marking to Market

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Futures

- Theoretical Price of a Future = Spot Price + Cost of Carry (which comes down as future approaches expiry)
- Margin / Leverage Trading
- Index Futures and Stock Futures



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Trading Terminal

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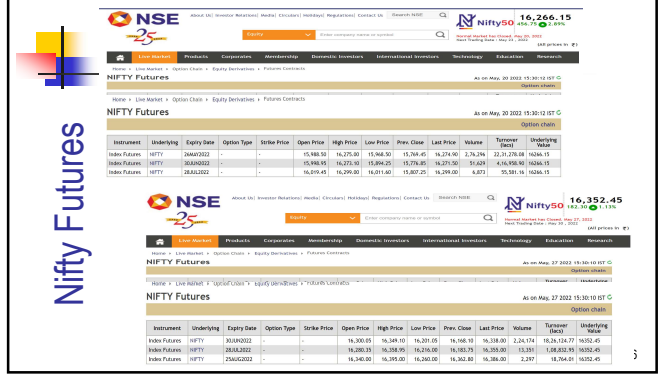
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Nifty Futures

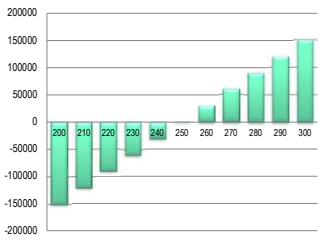


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Cash Market (Long)

Investment of Rs. 1,00,000 @ Rs. 250 a share = 400 shares	
Share price (Rs.)	Total Gain / Loss (Rs.)
200	-20000
210	-16000
220	-12000
230	-8000
240	-4000
250	0
260	4000
270	8000
280	12000

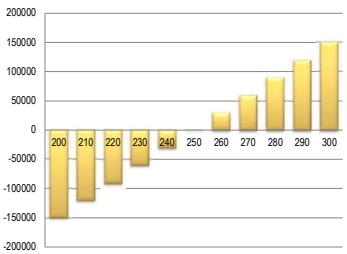


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Futures (Long)

Investment of Rs. 1,00,000 @ 1 lot (of 3000 Qty.) @ Rs. 250	
Share price (Rs.)	Total Gain / Loss (Rs.)
200	-150000
210	-120000
220	-90000
230	-60000
240	-30000
250	0
260	30000
270	60000
280	90000
290	120000
300	150000



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Futures – other aspects

- Need not wait for the Expiry
- Square off any time
- Square off on the same day/Next day
- Buy Futures – you do not become a shareholder
- Mark to Market [M2M]

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Futures – Bonus, Stock-split, Dividends

- Bonus
- Stock Split
- Dividends

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Futures - Advantages & Risks

- Short Sell
- Long & carry the position w/o taking delivery.
- Pay only MARGIN MONEY + M2M
- Future positions = Leveraged positions ;
  Risk of losing all your capital / investment in case the price goes against your position.

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Futures – How priced?

- Suppose SBIN is quoting at Rs. 250 and interest rate is 9% p.a.
- Cost of Carry = Rs. 250*9%*1/12 = Rs.1.875
- SBIN Future contract ONE MONTH maturity contract will quote at Rs. 251.85 / Rs.251.90
- But often it is observed that FUTURES quote at discount or premium to the theoretical price due to demand-supply pressures.
- Arbitragers – reduce extra premium commanded by buying in cash and selling equal amount in future and vice-versa.

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Index

- NIFTY (50 companies)
- SENSEX (30 Companies)
  - Banks, Metals, Pharma, Telecom, Power, cement
- Covers 65% of total trades & represents 65% of total market capitalisation
- Companies having > 10% Floating stocks

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Index - Relevancy

- Captures behaviour of a large variety of different portfolios in the market. (Non-vulnerable to individual stock)
- Stocks included in the Index are highly liquid. (Impact Cost - Tight bid-ask rate i.e. 0.5%)
- Professionally maintained. (reviewed regularly)

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Futures – Index Futures - Advantages

- News – Market would go up.
- Buy XYZ Stock.
- Market goes up as expected but XYZ falls due to bad news related to the company.
- VIEW = CORRECT ; EXPRESSION = WRONG
- Using Nifty / Sensex Futures, express your View broadly
- Returns not high but risk is limited
  as index movements are smooth, less volatile without unwarranted swings.

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Futures – Volume & Open Interest

- Total number of Futures and Options – Contracts that are not closed or delivered on a particular day.
- Open Interest is NOT the volume of Futures & Options.

Time	Trading Activity	Open Interest
Jan 1	**A** buys 1 option and **B** sells 1 option contract	1
Jan 2	**C** buys 5 options and **D** sells 5 options contracts	6
Jan 3	**A** sells his 1 option and **D** buys 1 options contract	5
Jan 4	**E** buys 5 options from **C** who sells 5 options contracts	5

- On Jan 1, A buys an option, which leaves an open interest and also creates trading volume of 1
- On Jan 2, C and D create trading volume of 5 and there are also 5 more options left open
- On Jan 3, A takes an offsetting position and therefore open interest is reduced by 1, and trading volume is 1
- On Jan 4, E simply replaces C and therefore open interest does not change, trading volume increases by 5.

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Futures –Open Interest & Price

- A contract has both a buyer and a seller, so the two market players combine to make one contract.

Open Interest	Price	Trend
Increase	Increase	Upward
Increase	Decrease	Downward
Flat	Inc / Dec	Reversal of trend

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Futures – Hedging

- Hold a Stock in Cash Market (that has futures)
- For 2 to 3 weeks the stock does not look good.
- Sell Stock and buy after 3 weeks (resulting in heavy transaction costs and Capital gains taxes)
- Alternatively, you can sell FUTURES and hedge your position.
- Transaction – Economical
- Hedging – does not maximise profits ; but minimises losses.

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Futures – Hedging…

- Hold a Stock in Cash Market (that does not have futures)
- Use Index Futures
- Beta = "Movement of the stock related to the index"
- Stock DCJ moves up 2% when Nifty moves up by 1% and goes down by 2% when Nifty falls by 1%, Beta = 2.
- Stock DCJ – Rs. 2,00,000 ; Sell Nifty worth Rs. 4,00,000

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Futures – Closing Bell

- Ban on Futures Trading
- F&O Trades dominate prices in Cash Market.
- Zero sum game

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Options

- Options are contracts that gives the buyers the right, not the obligation to buy or sell an underlying instrument at specified price on specified date.
- On the other hand, the seller is under obligation to perform the contract (buy or sell the underlying instrument).

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Options

- Options are of two types – Calls and Puts.
- **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 obligation to sell a given quantity of the underlying asset at a given price on or before a given date.

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Options – Standard Terms / Specifications

- Contract Cycle : 3 months to 3 years
- Contract size [Market Lot / Quantity]
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- Expiration Date – Last Thursday of Every Month / Weekly for index
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- Minimum Price Quotation [Tick size] – Re. 0.05
- Active contracts - 3 nearest months to 3 years
- Settlement basis – Stocks (where underlying is Stock)
- Strike Price / Exercise Price (decided by Exchange)
- Options Premium

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Options – Other Terminologies

- Index Options / Stock Options
- Buyer of an option
- Seller/Writer of an option

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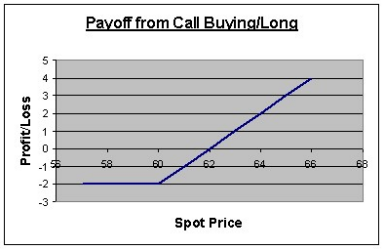
Call Options

- Long a call. Person buys the right (a contract) to buy an asset at a certain price. They feel that the price in the future will exceed the strike price. This buyer is *bullish* on the asset.
- Short a Call. Person sells the right (a contract) to someone that allows them to buy a asset at a certain price. The seller/writer feels that the asset will devalue over the time period of the contract. This seller is *bearish* on the asset.

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Call Option (Example - Payoff)



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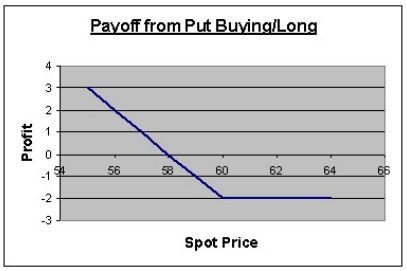
Put Options

- Long a Put : Buy the right to sell an asset at a pre-determined price. You feel that the asset will devalue over the time of the contract. Therefore you can sell the asset at a higher price than the current market value. This buyer is *bearish* on the asset.
- Short a Put : Sell the right to someone else. This will allow them to sell the asset at a specific price. They feel the price will go down and you do not. This seller is *bullish* on the asset.

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Put Option (Example - Payoff)



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Options - CALL / PUT

- In-the-money
- At-the-money
- Out-of-money
- The options are not permanently in, at, out of money, they keep changing on the basis of change in price.

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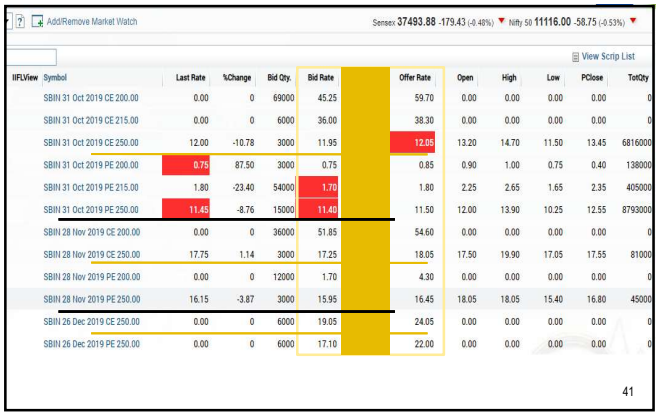
Options

- Premium = Intrinsic Value + Time Value
- CMP = 55
- 50 Call = Rs.7 {5+2} – in the money
- 60 Call = Rs. 3 {0+3} – out of money
- 50 Put = Rs. 2 {0+2} – out of money
- 60 Put = Rs. 8 {5+3} – in the money
- Time value CANNOT BE negative



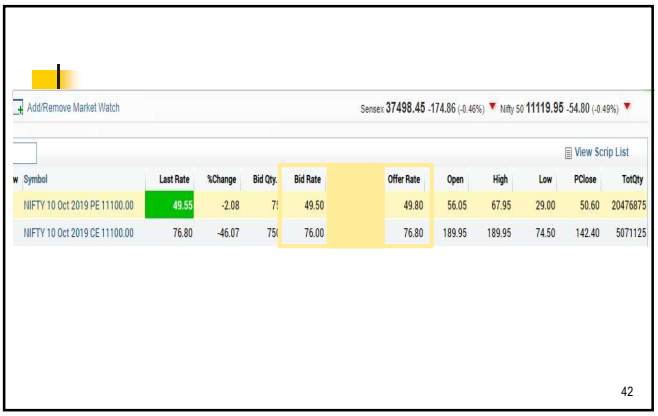
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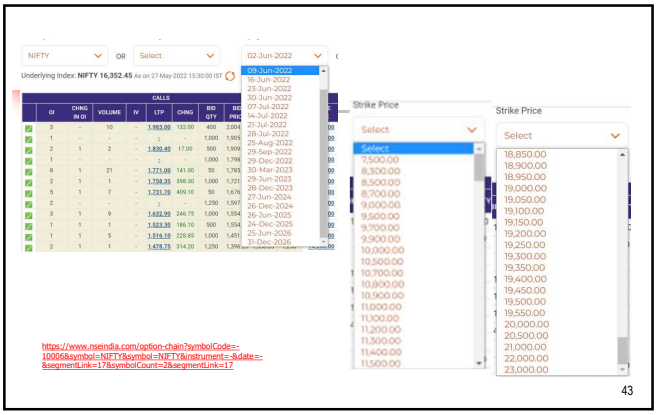
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Sum up: CALL + PUT

Options - Stocks & Index	CALL	Buyer	Bullish	----	Limited loss ; Unlimited Profits
		Seller	Bearish	----	Unlimited loss ; Limited Profits
	PUT	Buyer	Bearish	----	Limited loss ; Unlimited Profits
		Seller	Bullish	----	Unlimited loss ; Limited Profits

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Operators in the derivatives market

- Hedgers - Operators who want to transfer a risk component of their portfolio.
- Speculators - Operators who intentionally take the risk from hedgers in pursuit of profit.
- Arbitragers - Operators who operate in the different markets simultaneously in pursuit of profit and eliminate disparity in pricing.

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Futures Vs. Options

Futures	Options

Similarities :

Exchange Traded
Exchange defines the product
STT on Selling Leg only

Differences :

Price - zero, Strike price moves on	Strike price is fixed, price moves
Price is zero	Price is always positive
Both long and short at risk	Only short at risk

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Strategies - Using Futures & Options…

Hedging
- 1. Long security, short Futures
- 2. Short security, long Nifty Futures
- 3. Have portfolio, short Nifty Futures

Speculation
- 1. Bullish > Long Futures
- 2. Bearish > Short Futures

Arbitration
- 1. Overpriced futures - Buy Shares, Short Futures
- 2. Underpriced futures – Buy Futures, Sell Shares (if having)

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Derivatives & Income Tax

- Futures and Options in Capital Markets / Commodities
- Dealt in Recognised Stock Exchange
  NSE / BSE / MCX Stock Exchange / United Stock Exchange of India
  Or recognized association s.t. CTT
- Sec. 43 (5) (d) (e)
  – not a speculative transaction

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ICAI Guidance Note - Turnover

(b) **Derivatives, futures and options**: Such transactions are completed without the delivery of shares or securities. These are also squared up by payment of differences. The contract notes are issued for the full value of the asset purchased or sold but entries in the books of account are made only for the differences. The transactions may be squared up any time on or before the striking date. The buyer of the option pays the premia. The turnover in such types of transactions is to be determined as follows:

(i) The total of favourable and unfavourable differences shall be taken as turnover.

(ii) Premium received on sale of options is also to be included in turnover.

(iii) In respect of any reverse trades entered, the difference thereon, should also form part of the turnover.

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44AB – Turnover

SUMMARY		
	Rs.	Rs.
Sale of Future "ABC"		3,20,000
Sale of Options "WHO"		35,000
Sale of Future "XYZ"		3,35,000
Purchase of Future "ABC"	3,00,000	
Purchase of Options "WHO"	34,000	
Purchase of Future "XYZ"	3,40,000	
Net Profit	16,000	
	6,90,000	6,90,000

A. Rs. 6,90,000 B. Rs.16,000 C. Rs. 60,000 D. Rs. 26,000

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F & O Bill

Futures & Option Day Bill

Trade Date 08/08/2014

Date	Scrip Sym	Exp.Date	Qty	Net Rate	Debit	Credit
Brokerage 08/08/2014					20.00	
					20.00	**.00**
					.00	**.00**
Regular Trade 08/08/2014 Bought For You	NIFTY - XX - 0.00	25-Sep-2014	50	7643.90	382195.00	
			50.00		**382195.00**	**.00**
Carry Forward 08/08/2014	NIFTY - XX - 0.00	25-Sep-2014	50	7629.55		381477.50
			50.00		**.00**	**381477.50**
					382195.00	**381477.50**
					717.50	
	Scrip Total				382215.00	381477.50
	Net				**737.50**	
	Education CESS				0.09	
	High Education CESS				0.01	
	Service Tax				3.36	
	Trans. Charges				8.03	
	Sebi Charges				0.76	
	STT					
	Stamp Charges				38.22	
	Grand Total				**787.97**	
	Due To Us				**787.97**	

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Tips for F&O

- Understanding Concepts, Don't be a Abimanyu
- Play it on paper
- Stick a Toe in the water – Don't Plunge
- Do your home work
- Beware of Lady Luck
- Use the laws of demand & supply
- Act like a Market Maker
- Avoid Analysis Paralysis

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Market – Myth / Reality



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