



Demystifying Derivatives

- CA Dungar Chand U Jain, Madurai
 - SIRC of ICAI; 11-Oct-2019
- dungarchand@hotmail.com | www.cadcjain.in

ATTENTION !!!





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.



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.



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.



- Write = Sell

- Long

- Short

- All Stock Names – illustrative purpose ONLY



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.



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.



Types of Derivatives

- Forwards
- Futures
- Options
- Swaps



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



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.



Futures – Standard Terms / Specifications

- Contract Cycle : 3 months
- Contract size [Market Lot / Quantity]
Nifty – 75 ; SBIN - 3000
- Expiration Date – Last Thursday of Every Month
Oct Series **31-Oct-19**; Nov **28-Nov-19**; Dec **26-Dec-19**
- Minimum Price Quotation [Tick size] – Re. 0.05
- Active contracts - 3 nearest months
- Settlement basis – Cash



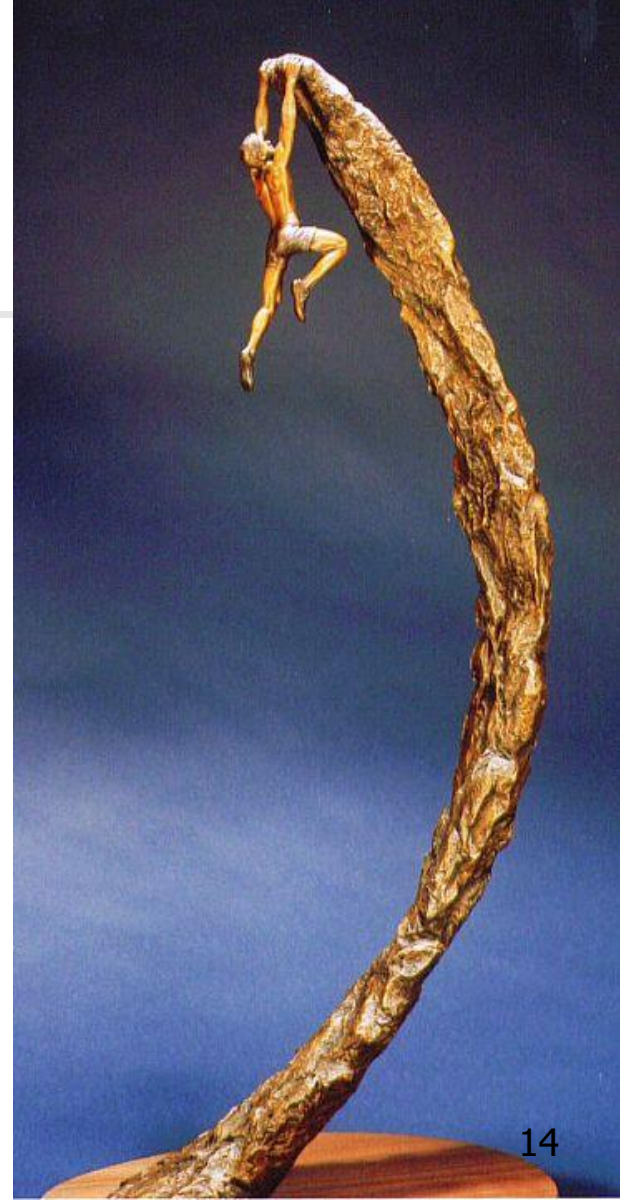
Futures – Other Terminologies

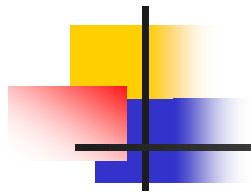
- Spot Price, Future Price
- Cost of Carry
- Initial Margin
- Marking to market
- Maintenance Margin
- Long Vs. Short



Futures

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





Trading Terminal

Market Watch

Default

Sensex **37533.51** -139.80 (-0.37%) Nifty 50 **11126.80** -47.95 (-0.43%)

Script is successfully added to your current Market Watch.

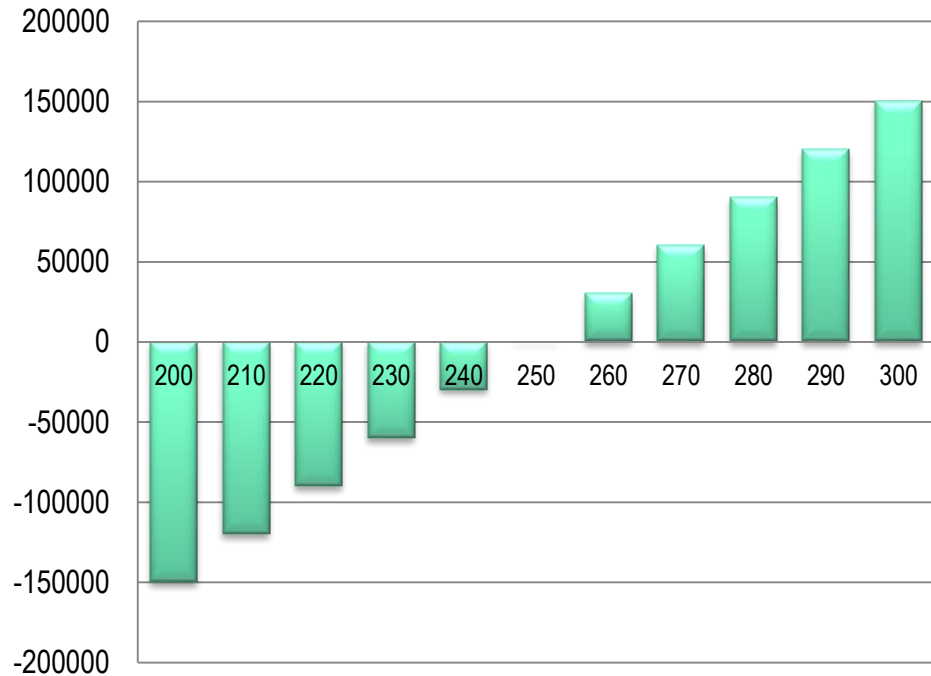
Buy	Sell	R	E	+/-	Sr	IIFLView	Symbol	Last Rate	%Change	Bid Qty.	Bid Rate	Offer Qty.	Offer Rate	Open	High	Low	PClose	TotQty
			N		EQ		NIFTY	11126.80	-0.43	0	0.00	0	0.00	11196.20	11233.85	11117.85	11174.75	0
			N		XX		NIFTY 31 Oct 2019	11163.65	-0.46	75	11162.65	150	11164.00	11224.85	11262.00	11156.90	11215.15	8825100
			N		XX		NIFTY 26 Dec 2019	11260.45	-0.46	75	11255.35	75	11260.45	11348.35	11350.80	11255.55	11313.00	44850
			N		XX		NIFTY 28 Nov 2019	11209.45	-0.48	375	11210.05	300	11212.90	11203.45	11308.40	11203.45	11263.35	264900
			N		EQ		SBIN	249.70	-0.10	7	249.75	116	249.80	251.50	253.40	246.85	249.95	37208614
			B		EQ		SBIN	249.75	-0.06	565	249.60	200	249.75	251.10	253.40	246.60	249.90	1944661
			N		XX		SBIN 31 Oct 2019	250.45	-0.14	3000	250.45	60000	250.50	251.80	254.30	247.60	250.80	70170000
			N		XX		SBIN 28 Nov 2019	251.50	-0.16	6000	251.50	6000	251.70	252.00	255.30	249.00	251.90	1506000
			N		XX		SBIN 26 Dec 2019	251.00	-0.71	3000	252.40	6000	252.70	250.50	256.25	250.20	252.80	72000

INFY		
CASH	BSE : INFY 31 OCT 2019	+ Add
FUTURES	BSE : INFY 24 OCT 2019	+ Add
	BSE : INFY 17 OCT 2019	+ Add
OPTIONS	BSE : INFY 14 NOV 2019	+ Add
	BSE : INFY 10 OCT 2019	+ Add
CURRENCY FUTURES	BSE : INFY 07 NOV 2019	+ Add
	BSE : INFY 21 NOV 2019	+ Add
CURRENCY OPTIONS	BSE : INFY 26 DEC 2019	+ Add
	BSE : INFY 05 DEC 2019	+ Add
COMMODITY FUTURES	BSE : INFY 28 NOV 2019	+ Add
	NSE : INFY 26 DEC 2019	+ Add
COMMODITY OPTIONS	NSE : INFY 28 NOV 2019	+ Add

BUY ▲ ▼ SELL ▲ ▼ N ▲ ▼ EQ ▲ ▼ L&TEH ▲ ▼ 80.45 -0

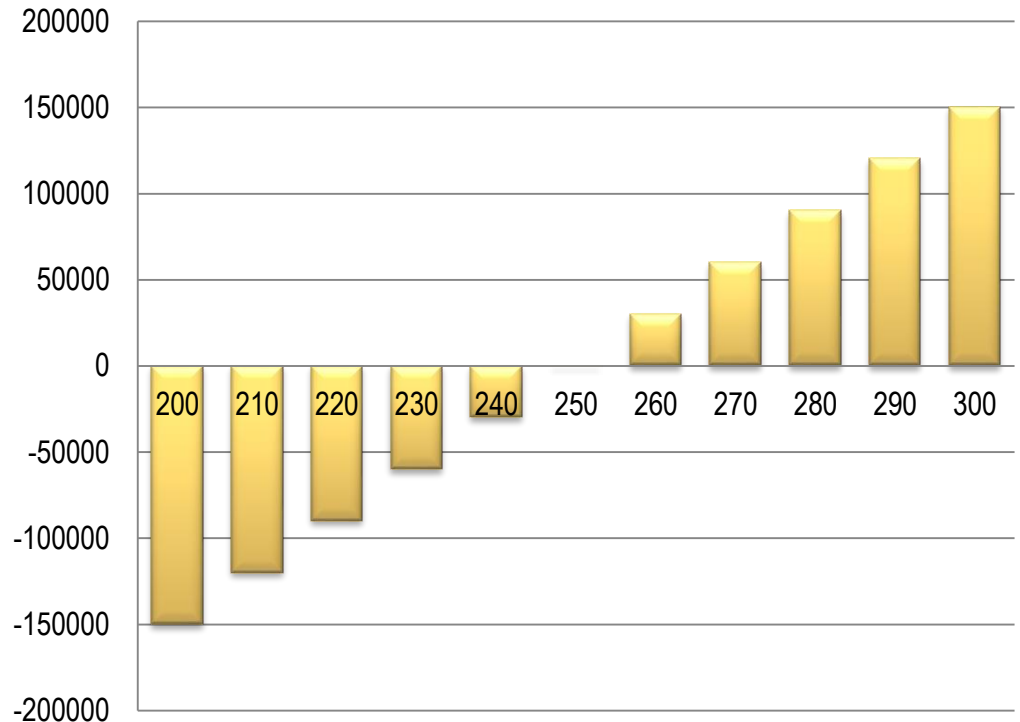
Cash Market (Long)

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



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





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]



Futures – Bonus, Stock-split, Dividends

- Bonus
- Stock Split
- Dividends



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.



Futures – How priced?

- Suppose SBIN is quoting at Rs. 250 and interest rate is 9% p.a.
- Cost of Carry = $250 * 9\% * 1/12 = \text{Rs.}1.875$
- 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.



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



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)



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.

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.



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



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.



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



Futures – Is hedging with Nifty futures Perfect?

- Hedging is like marriage and one should not expect it to be perfect.
- Beta = Historical
- If the Beta of Stock DCJ becomes volatile and goes up high as 3, Hedging = not sufficient.
- Difficult (impossible) to get perfect hedge but one can improve the perfection by adjusting the position in Nifty futures from time to time.



Futures – Closing Bell

- Ban on Futures Trading
- F&O Trades dominate prices in Cash Market.
- Market Lot – Minimum Rs.2,00,000 – Rs.3,00,000
- Zero sum game



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).





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.



Options – Standard Terms / Specifications

- Contract Cycle : 3 months to 3 years
- Contract size [Market Lot / Quantity]
Nifty – 75 ; SBIN - 3000
- Expiration Date – Last Thursday of Every Month / Weekly for index
Oct Series **31-Oct-19**; Nov **28-Nov-19**; Dec **26-Dec-19** & beyond for Index
- Minimum Price Quotation [Tick size] – Re. 0.05
- Active contracts - 3 nearest months to 3 years
- Settlement basis – Cash
- Strike Price / Exercise Price (decided by Exchange)
- Options Premium



Options – Other Terminologies

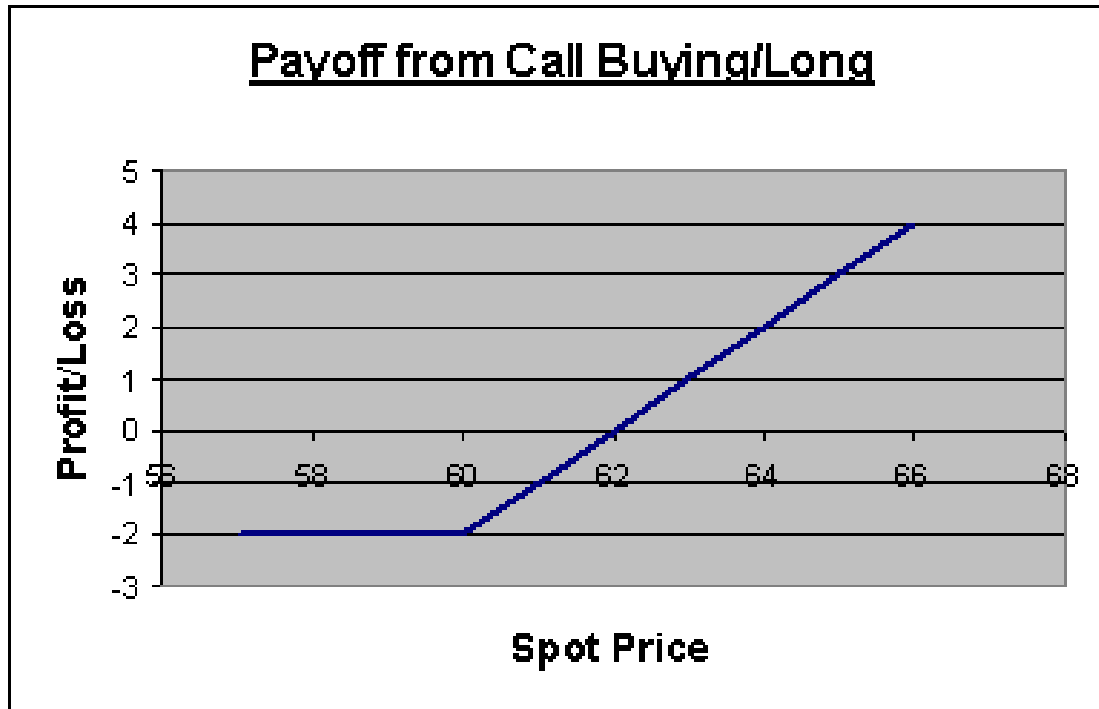
- Index Options / Stock Options
- Buyer of an option
- Seller/Writer of an option



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.

Call Option (Example - Payoff)

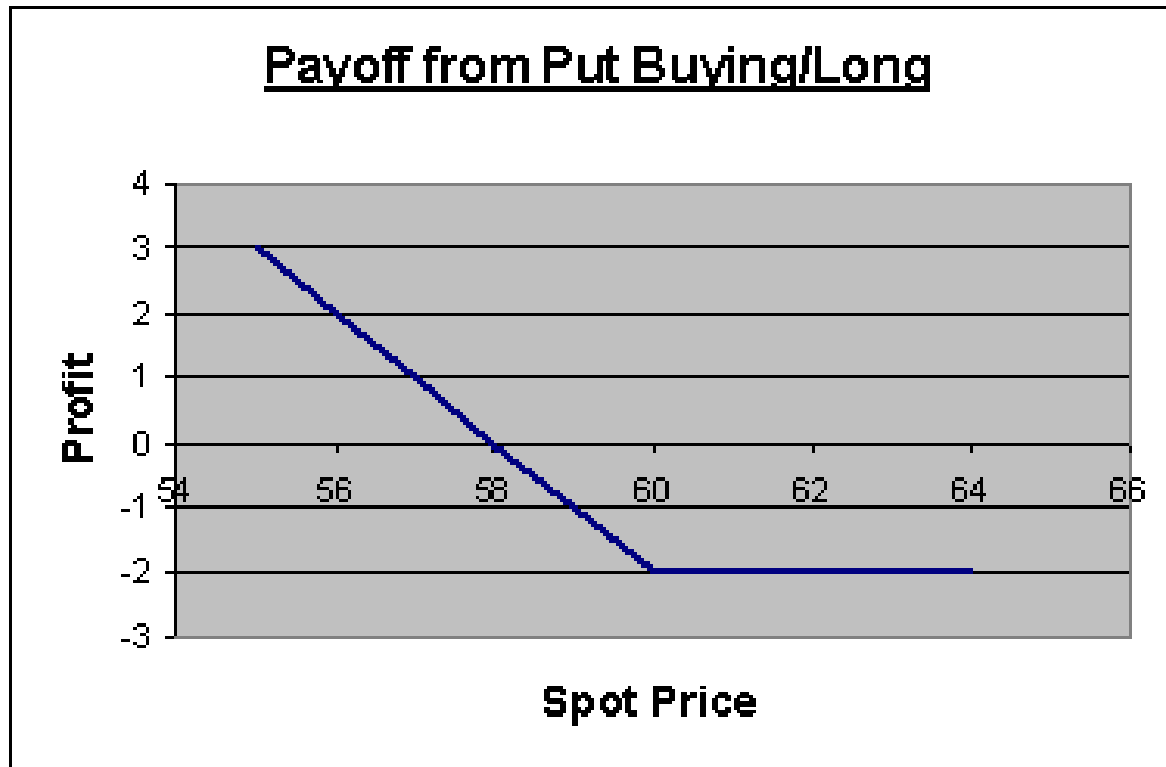




Put Options

- 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.

Put Option (Example - Payoff)





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.

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



[View Scrip List](#)

IIFLView	Symbol	Last Rate	%Change	Bid Qty.	Bid Rate	Offer Rate	Open	High	Low	PClose	TotQty
	SBIN 31 Oct 2019 CE 200.00	0.00	0	69000	45.25	59.70	0.00	0.00	0.00	0.00	0
	SBIN 31 Oct 2019 CE 215.00	0.00	0	6000	36.00	38.30	0.00	0.00	0.00	0.00	0
	SBIN 31 Oct 2019 CE 250.00	12.00	-10.78	3000	11.95	12.05	13.20	14.70	11.50	13.45	6816000
	SBIN 31 Oct 2019 PE 200.00	0.75	87.50	3000	0.75	0.85	0.90	1.00	0.75	0.40	138000
	SBIN 31 Oct 2019 PE 215.00	1.80	-23.40	54000	1.70	1.80	2.25	2.65	1.65	2.35	405000
	SBIN 31 Oct 2019 PE 250.00	11.45	-8.76	15000	11.40	11.50	12.00	13.90	10.25	12.55	8793000
	SBIN 28 Nov 2019 CE 200.00	0.00	0	36000	51.85	54.60	0.00	0.00	0.00	0.00	0
	SBIN 28 Nov 2019 CE 250.00	17.75	1.14	3000	17.25	18.05	17.50	19.90	17.05	17.55	81000
	SBIN 28 Nov 2019 PE 200.00	0.00	0	12000	1.70	4.30	0.00	0.00	0.00	0.00	0
	SBIN 28 Nov 2019 PE 250.00	16.15	-3.87	3000	15.95	16.45	18.05	18.05	15.40	16.80	45000
	SBIN 26 Dec 2019 CE 250.00	0.00	0	6000	19.05	24.05	0.00	0.00	0.00	0.00	0
	SBIN 26 Dec 2019 PE 250.00	0.00	0	6000	17.10	22.00	0.00	0.00	0.00	0.00	0

 Add/Remove Market Watch

Sensex **37498.45** -174.86 (-0.46%) ▼ Nifty 50 **11119.95** -54.80 (-0.49%) ▼

 [View Scrip List](#)

w	Symbol	Last Rate	%Change	Bid Qty.	Bid Rate	Offer Rate	Open	High	Low	PClose	TotQty
	NIFTY 10 Oct 2019 PE 11100.00	49.55	-2.08	71	49.50	49.80	56.05	67.95	29.00	50.60	20476875
	NIFTY 10 Oct 2019 CE 11100.00	76.80	-46.07	750	76.00	76.80	189.95	189.95	74.50	142.40	5071125

The screenshot displays a trading application interface. On the left, a vertical menu lists contract types: FUTURES, OPTIONS, CURRENCY FUTURES, CURRENCY OPTIONS, COMMODITY FUTURES, and COMMODITY OPTIONS. Below this menu are buttons for BUY and SELL, and a trash icon. The main area shows the selected instrument as NSE : NIFTY. A date selection calendar is open, showing dates from 10 Oct 2019 to 24 Sep 2020. A second calendar is partially visible on the right, showing dates from 24 Sep 2020 to 27 Jun 2024. At the bottom, there are buttons for 'Scrip Details' and 'Order Book', and a file name 'rwmtmooi9sq31.jpg'.

NSE : NIFTY

10 Oct 2019

10 Oct 2019

17 Oct 2019

24 Oct 2019

31 Oct 2019

07 Nov 2019

14 Nov 2019

21 Nov 2019

28 Nov 2019

05 Dec 2019

26 Dec 2019

26 Mar 2020

25 Jun 2020

24 Sep 2020

24 Sep 2020

31 Dec 2020

24 Jun 2021

30 Dec 2021

30 Jun 2022

29 Dec 2022

29 Jun 2023

28 Dec 2023

27 Jun 2024

BUY SELL

BUY SELL

Scrip Details Order Book

rwmtmooi9sq31.jpg

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



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.



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



Strategies - Using Futures & Options...

Hedging

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

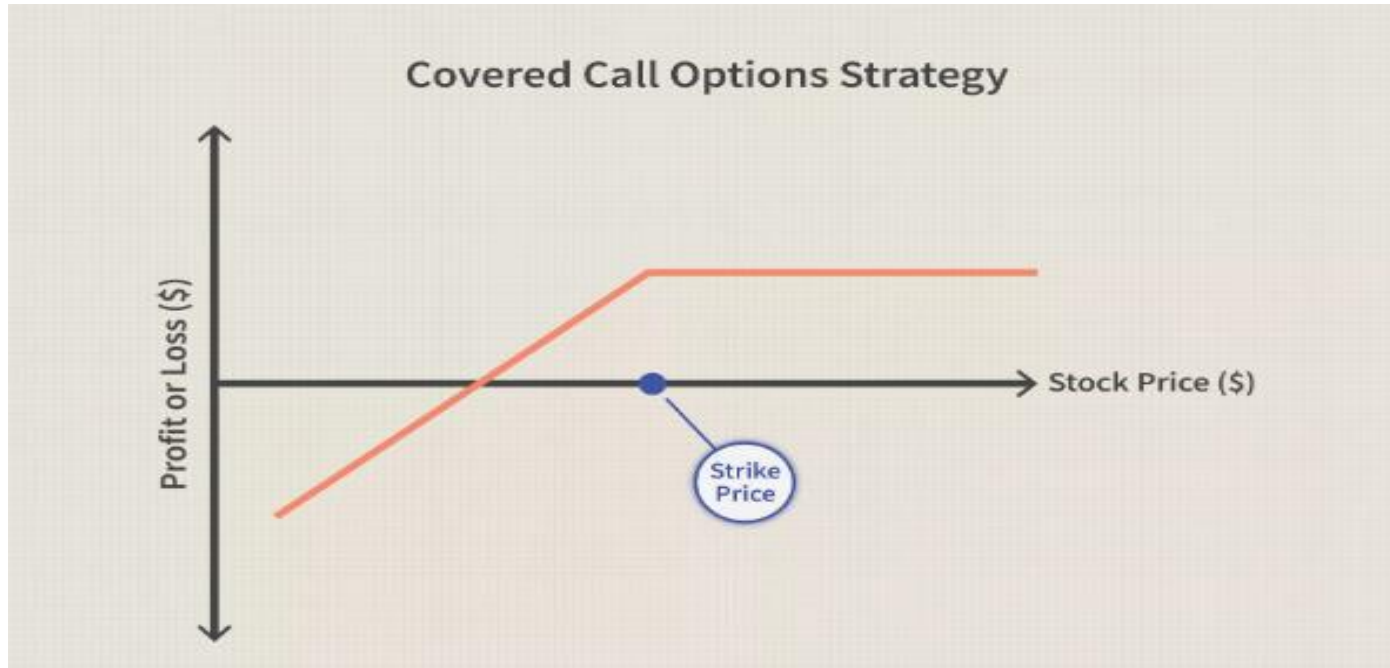
Speculation

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

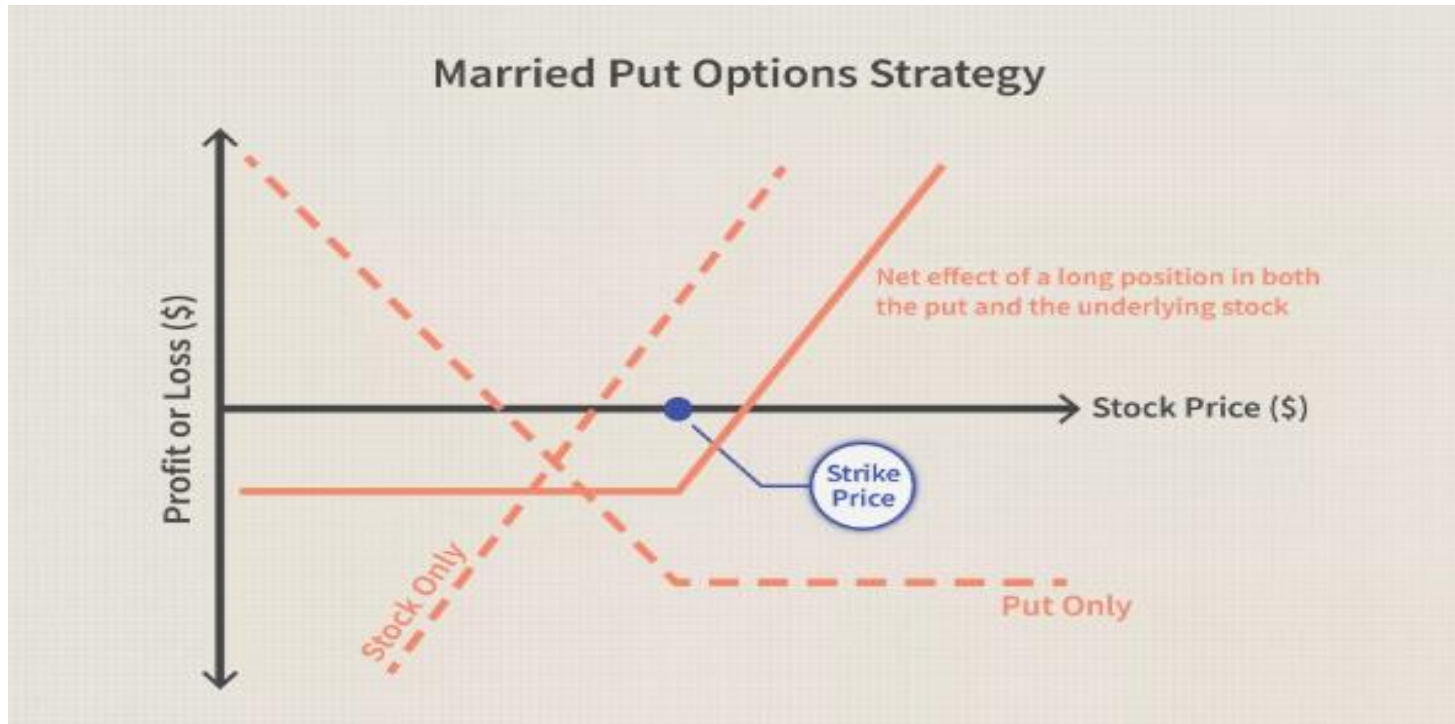
Arbitration

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

Covered Call (Buy Shares & write Call)

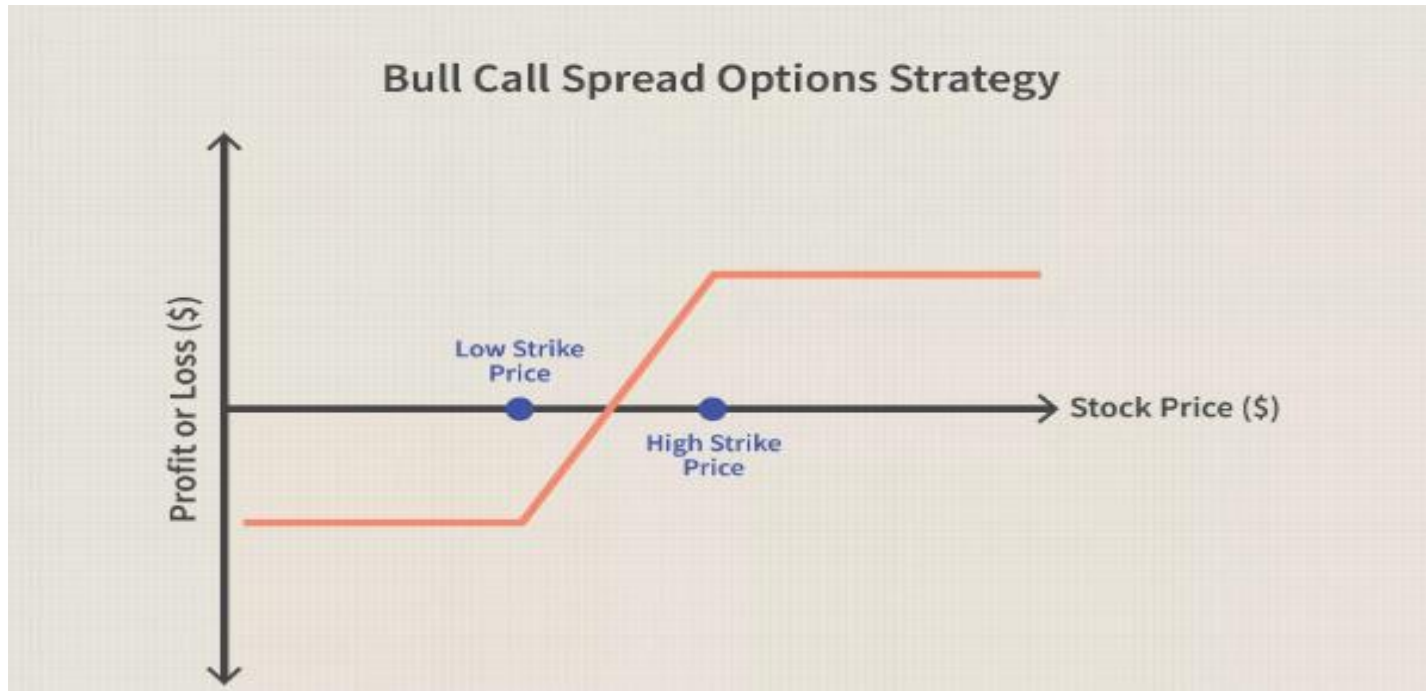


Married Put (Buy Shares and Buy Put)



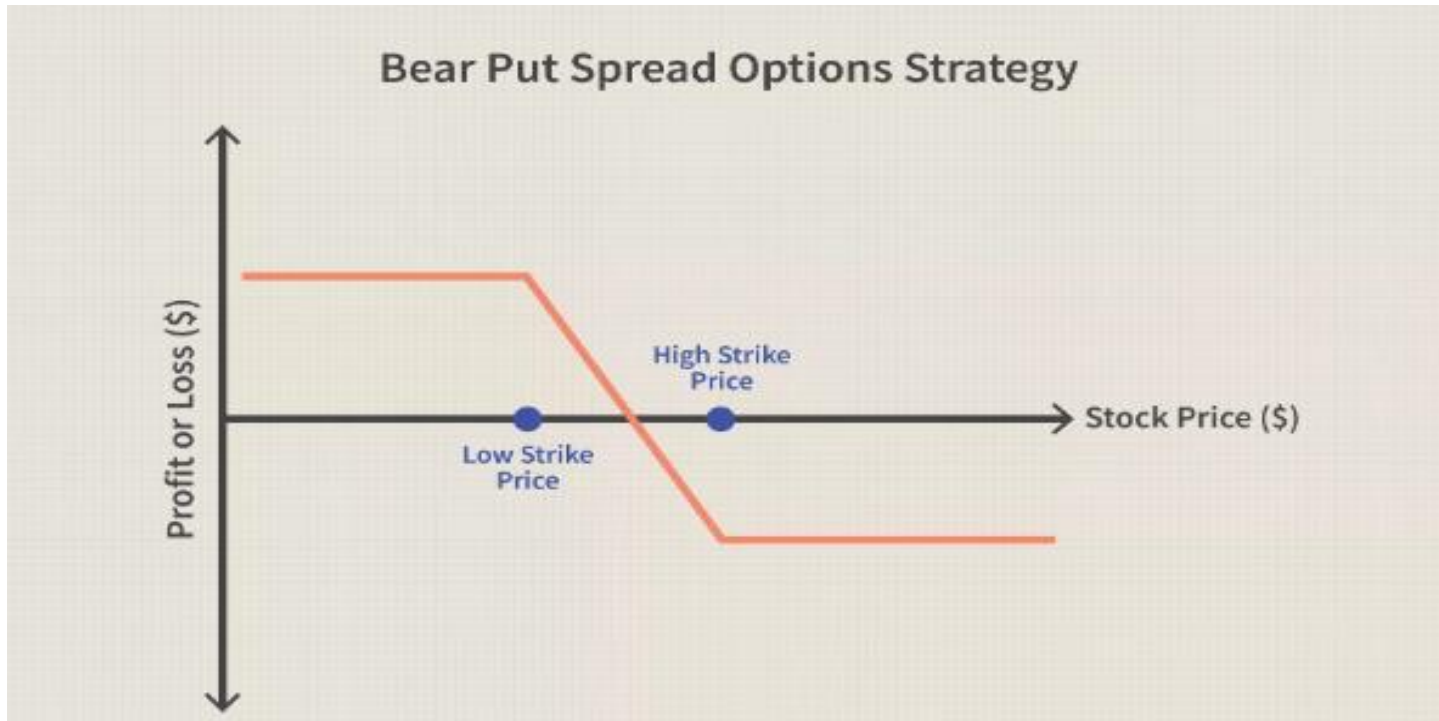
Bull Call Spread

(Buy Calls at Strike Price & Sell Higher Calls)



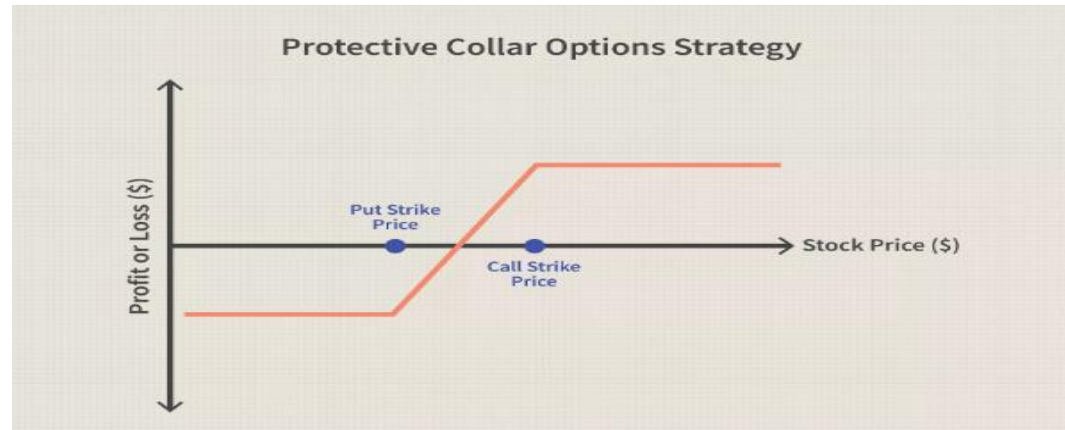
Bear Put Spread

(Buy Puts at Strike Price & Sell Lower Puts)

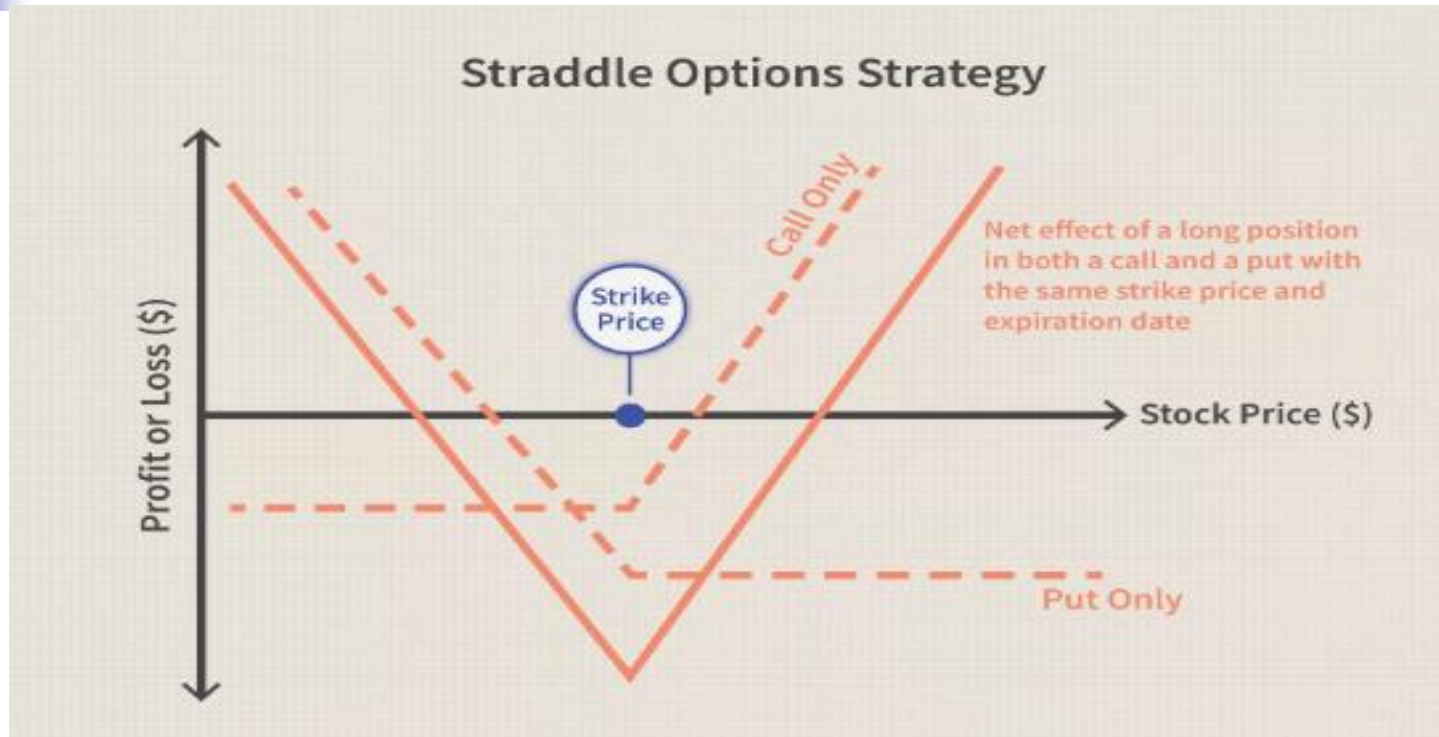


Protective Collar

purchasing an out-of-the-money put option and simultaneously writing an out-of-the-money call option for the same underlying asset and expiration while having stock.

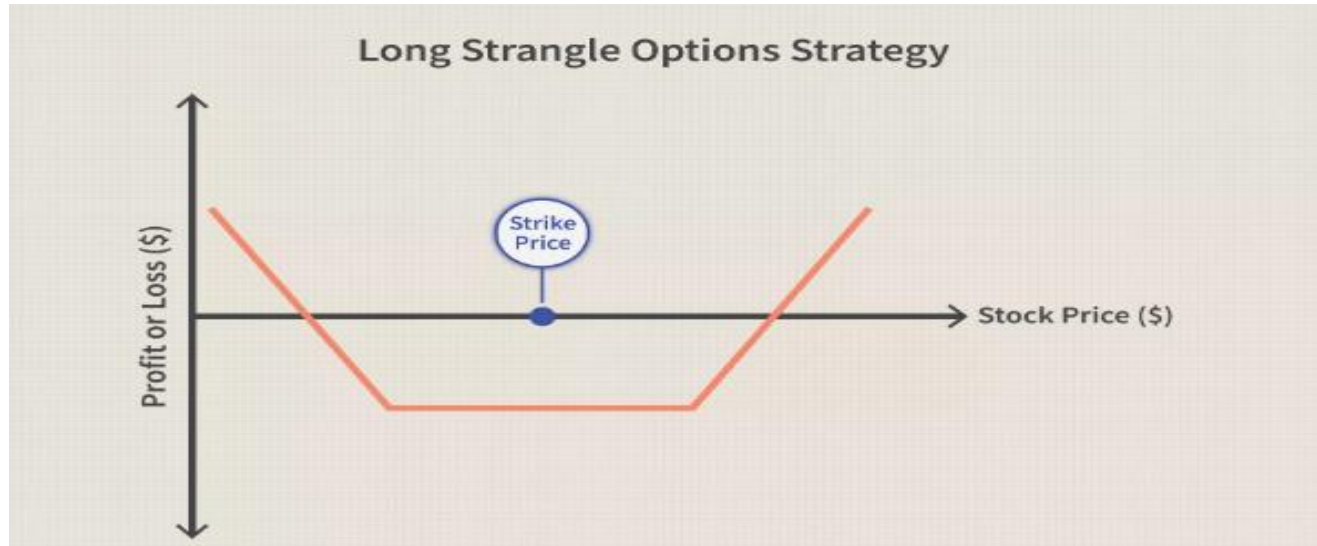


Long Straddle (Buy same Call & Put)



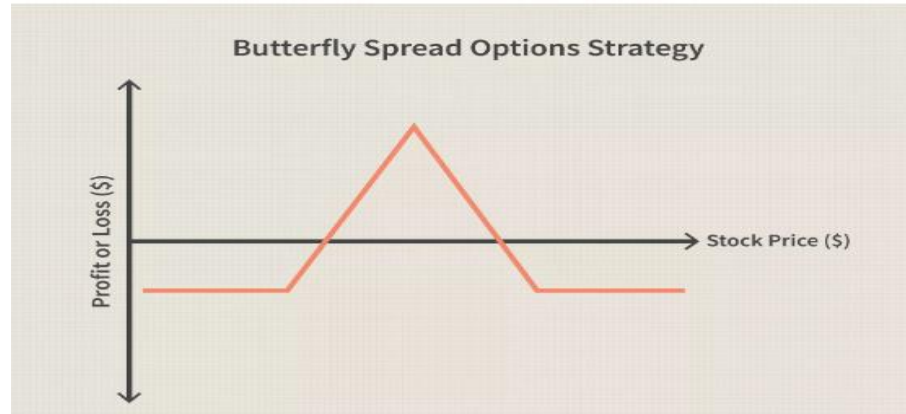
Long Strangle

- purchase an out-of-the-money call option and an out-of-the-money put option



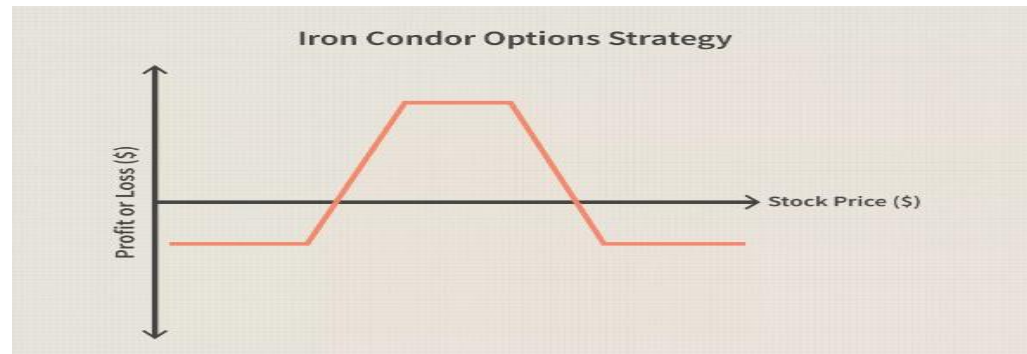
Long Call Butterfly Spread

- purchasing one in-the-money call option at a lower strike price,
- selling two at-the-money call options and
- buying one out-of-the-money call option.



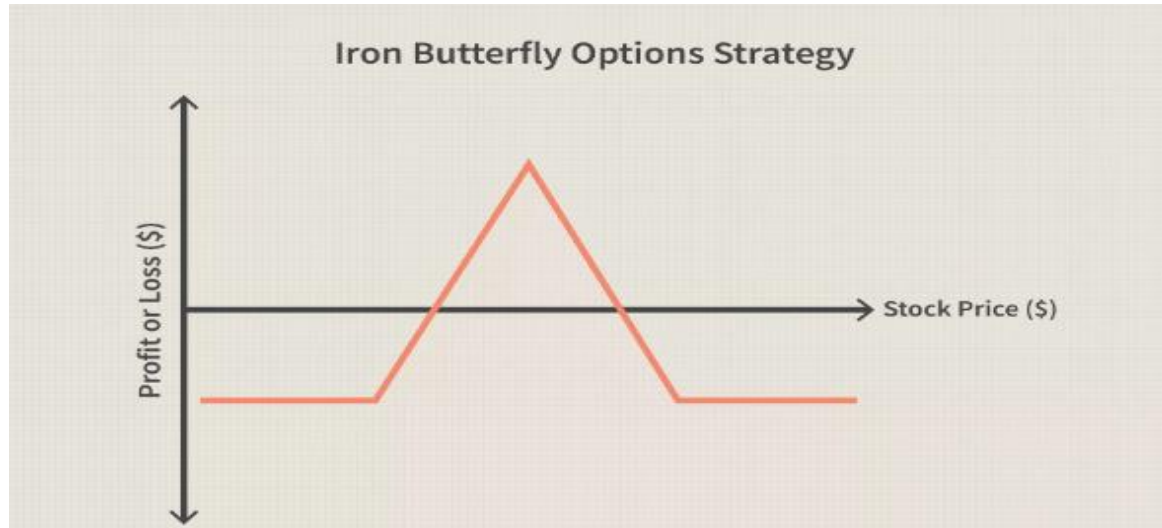
Iron Condor

- selling one out-of-the-money put &
- buying one out-of-the-money put of a lower strike (bull put spread)
- selling one out-of-the-money call &
- buying one out-of-the-money call of a higher strike (bear call spread).



Iron Butterfly

- sell an at-the-money put and buy an out-of-the-money put & also
- selling an at-the-money call and buying an out-of-the-money call.





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



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.

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	

A. Rs. 6,90,000

B. Rs. 16,000

C. Rs. 60,000

D. Rs. 26,000

-----	-----
6,90,000	6,90,000
-----	-----

F & O Bill

Futures & Option Day Bill

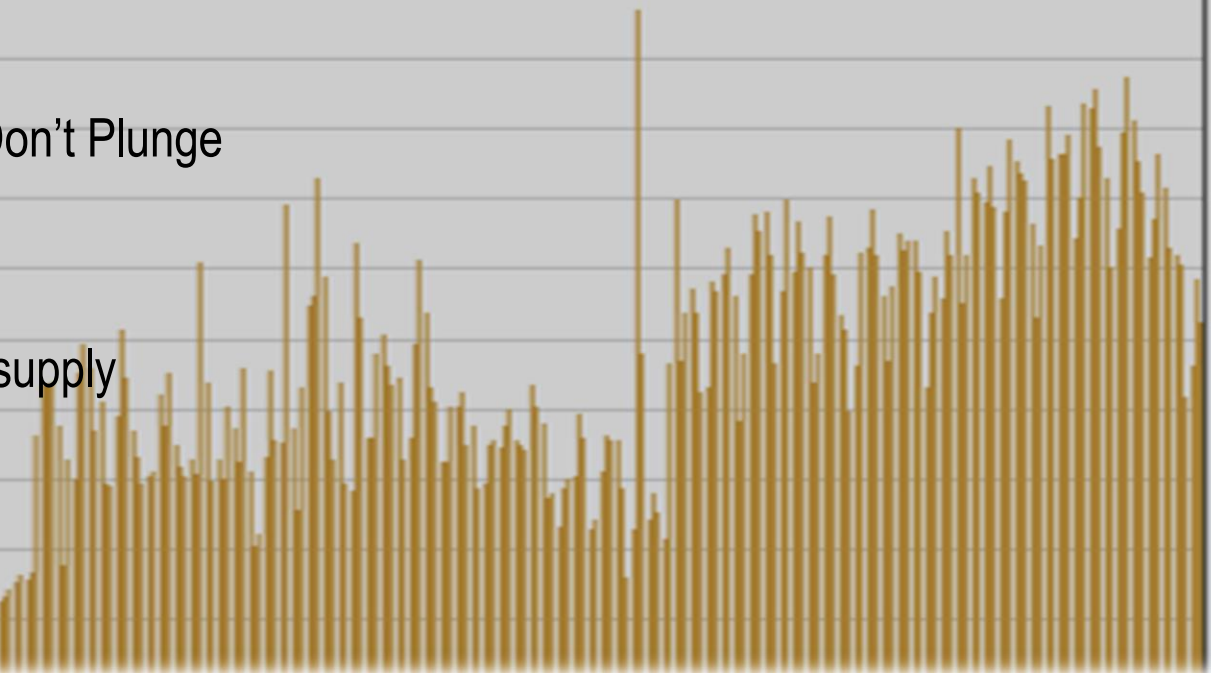
Trade Date 08/08/2014

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	



Tips for F&O

- Understanding Concepts
 - 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
 - Don't be a Abimanyu
- 

Market – Myth / Reality





That's all Folks!

-Dungar Chand U Jain
dungarchand@hotmail.com | www.cadcjain.in