



FUTURES & OPTIONS

**Before going deeper, let us first
understand the term DERIVATIVE**

Before going deeper, let us first understand the term **DERIVATIVE**

- ⦿ Derivative simply means something which gets/derives its value from another source
- ⦿ Ex : The price of a bread mainly depends on the price of the flour. In this case bread becomes a derivative of flour.
- ⦿ In Finance derivative is a contract that derives its value from an underlying asset.
- ⦿ Underlying asset can be anything like stocks, commodities, currency etc.
- ⦿ Derivatives are a convenient way to speculate/hedge future price moves.

What are futures?

What are Futures?

- Futures are **derivative financial contracts** that **obligate** the parties to transact an asset at a predetermined future **date and price**.
- Commodity futures such as crude oil, natural gas etc
- Stock index futures such as the **Nifty and Banknifty** Index
- Currency futures including those for the USDINR, EURUSD etc
- Precious metal futures for gold and silver

**Why do we need
Futures?**

Why do we need Futures?

- ☉ **Leverage** - Leverage in finance basically means owning something with the use of debt to boost returns.
- ☉ **Short Selling** – Futures as a tool helps in Short-Selling. Because we cannot sell shares we don't own, futures helps us solve that problem.
- ☉ **Speculation** - Speculators are people who seek only profit to participate in the futures markets.

Example for Futures

- Person A expects Reliance price to go up in 1 month, while Person B expects it to go down. They both are confident on their view so they want to trade 500qty.
- CMP of Reliance = 1305, so for this trade they'll need $(1305 \times 500 = \text{Rs.}6,52,500)$. But they only have a capital of Rs.2,00,000 each.
- Since they are not interested in delivery of the stock, only speculate profit / loss, they decide to set aside with broker only marginal amount of Rs.1,27,000 to enter the trade.
- 1 month later if Reliance is at 1350, Person A will make a profit Rs.22,500 $[(1350 - 1305) \times 500]$ while Person B will make a loss of Rs.22,500.

Important terms in **Futures trading...**

Important terms in Futures trading...

- **Lot Size** - Is the number of shares in 1 futures contract. In case of SBI Futures Contract it is 750, for different stocks it is different.
- **Contract Value** - Is the value of 1 futures contract, it is calculated as follows: $\text{Lot Size} \times \text{Current Market Price of the contract}$. Contract Value of 1 lot of SBI Futures = $[750 \times 808.30] = \text{Rs. } 6,06,225.00$

Important terms in Futures trading...

- ☉ **Margin** - The amount of money that need to be paid in order to transact in futures. Margin helps the broker adjust the Mark to market profit and loss. Margin is a certain % of the contract value, this is where the concept of leverage comes in. In case of SBI it is around 18% of the Contract Value i.e $\text{Rs.}6,06,225.00 \times 18\% = 1,10,862.00$.
- ☉ **Expiry** - As Futures contracts are time bound they trade only for a certain period. For example: Nifty October Futures will expire on the last Thursday of October, the date happens to be 31/10/2024.

Some features of a Futures Contract:

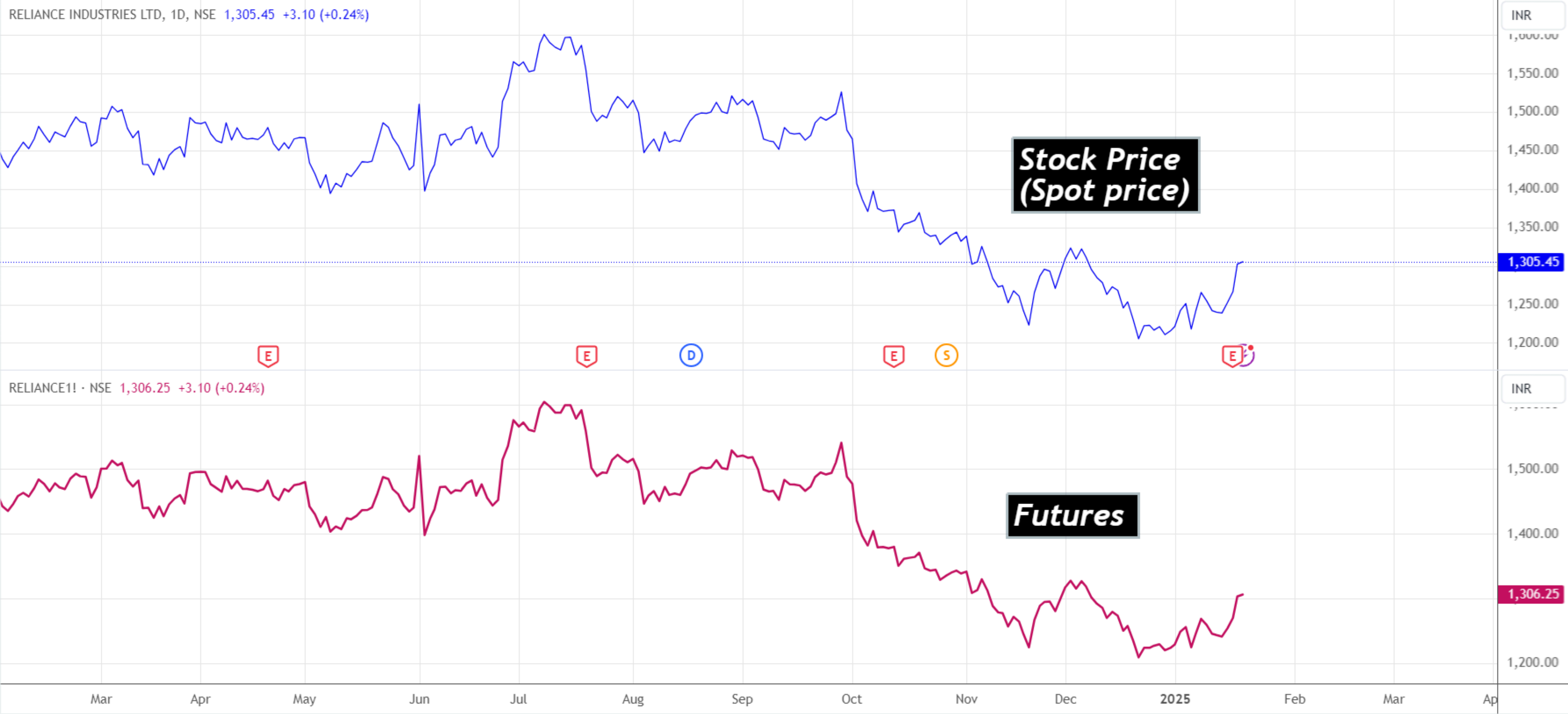
Some features of a Futures Contract:

- ☉ Copies the Underlying
- ☉ Tradeable
- ☉ Standardized Contract
- ☉ Time Bound
- ☉ Cash Settled (in most cases)

Charts of Stock vs Futures

Let's look at a live example.....

disizsid published on TradingView.com, Jan 20, 2025 19:57 UTC+5:30



OPEN INTEREST

(OI) IN FUTURES

OPEN INTEREST (OI) IN FUTURES

- ☉ **Open Interest (OI)** is a number that tells you how many futures contracts are currently outstanding (open) in the market.
- ☉ In other words, **Contracts** that have been traded but not yet closed.
- ☉ **Open Interest** provides a more accurate picture of the Futures trading activity, and whether money flows into the futures market are increasing or decreasing.

How to analyze Open Interest?

How to analyze Open Interest?

Sl.no	Price	OI	Perception	Future Price Expectation
1	Increase	Increase	Long Buildup	Likely to move higher
2	Decrease	Increase	Short Buildup	Likely to move lower
3	Decrease	Decrease	Long unwinding	Likely to move lower
4	Increase	Decrease	Short Covering	Likely to move higher

Snapshot of Futures from the NSE website

Most Active Contracts

Equity Currency Interest Rate Commodity

View

Most Active Future Contracts

Sort By ☒ Volume ☐ Value

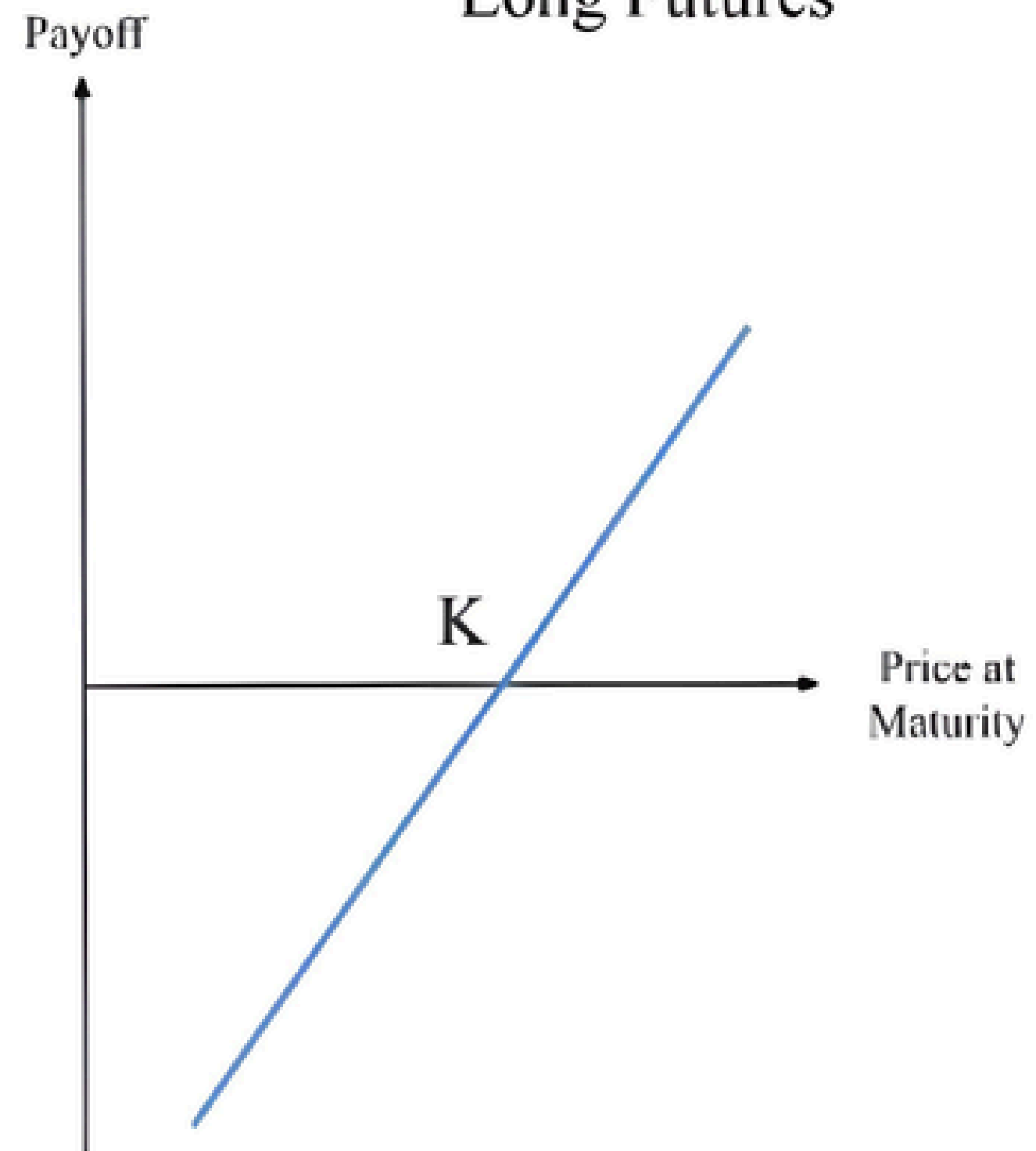
 Download (.csv)

As on 20-Jan-2025 15:30:00 IST 

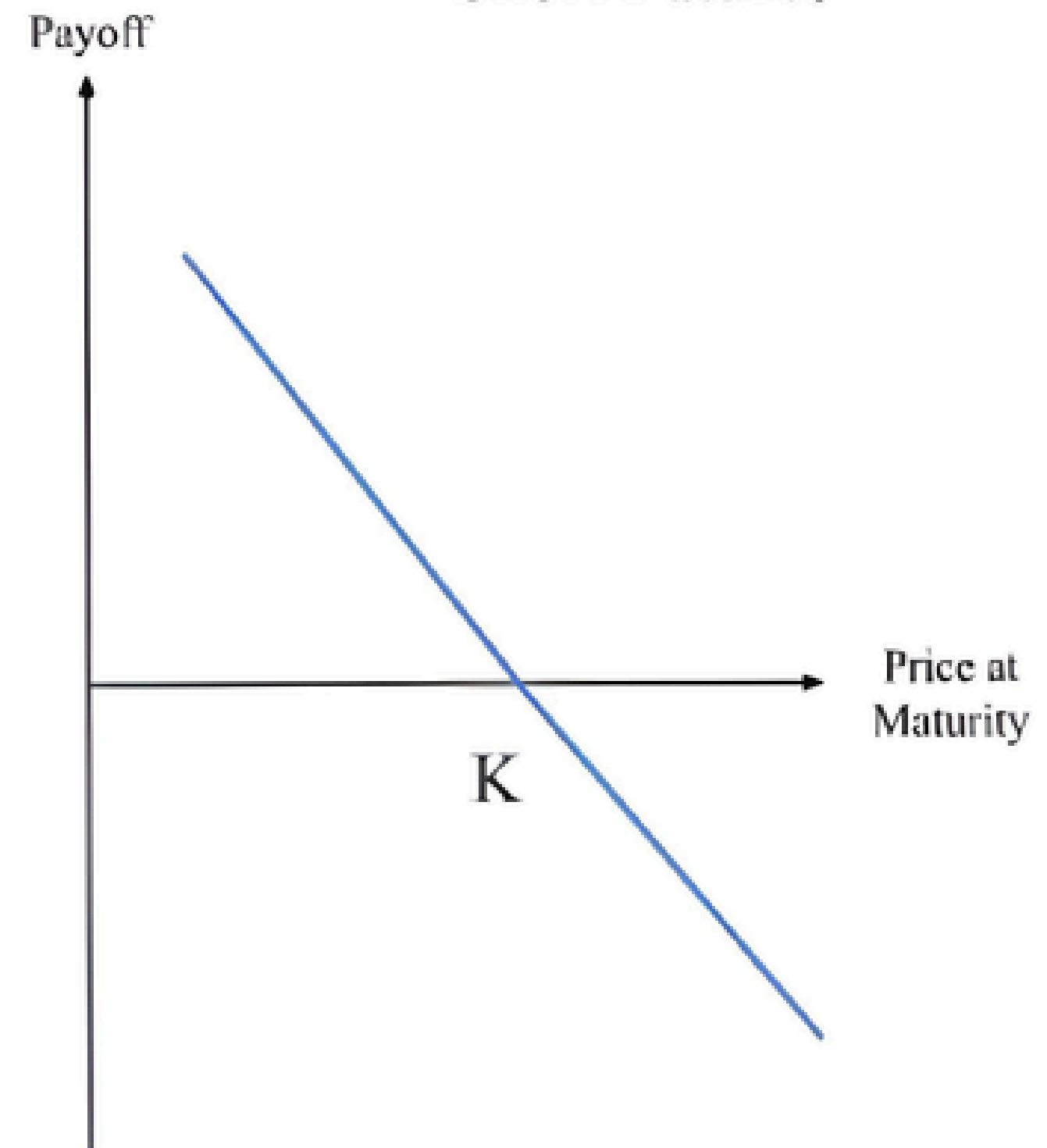
INSTRUMENT TYPE	SYMBOL	EXPIRY DATE	OPTION TYPE	STRIKE PRICE	LTP	%CHNG	VOLUME (Contracts)	VALUE* (₹ Lakhs)	OPEN INTEREST (Contracts)	VALUE OF UNDERLYING
Index Futures	NIFTY	30-Jan-2025	-	-	23,393.00	0.54	1,63,712	9,56,036.33	5,65,350	23,344.75
Index Futures	BANKNIFTY	30-Jan-2025	-	-	49,499.00	1.67	1,31,269	9,72,178.74	1,58,948	49,350.80
Stock Futures	KOTAKBANK	30-Jan-2025	-	-	1,924.65	9.18	71,530	5,46,569.31	93,434	1,918.00
Stock Futures	AXISBANK	30-Jan-2025	-	-	992.35	-0.21	66,446	4,10,993.43	1,62,658	988.95
Stock Futures	ZOMATO	30-Jan-2025	-	-	231.40	-7.24	61,059	2,98,847.17	69,013	230.70
Stock Futures	RELIANCE	30-Jan-2025	-	-	1,304.85	0.13	35,782	2,34,037.54	2,89,799	1,304.00
Stock Futures	IDEA	30-Jan-2025	-	-	9.94	8.75	32,882	1,32,580.22	73,344	9.95
Stock Futures	SBIN	30-Jan-2025	-	-	778.60	1.66	25,235	1,47,342.75	1,46,772	778.50
Stock Futures	HDFCBANK	30-Jan-2025	-	-	1,655.30	0.96	23,174	2,10,636.71	2,25,159	1,652.85
Stock Futures	WIPRO	30-Jan-2025	-	-	301.65	7.56	22,469	2,03,656.77	22,366	300.50
Stock Futures	INFY	30-Jan-2025	-	-	1,817.40	0.06	22,407	1,62,321.69	87,390	1,813.00
Stock Futures	TATAMOTOR	30-Jan-2025	-	-	776.65	-0.73	19,831	84,631.07	1,67,011	773.95

PAYOFF GRAPH FOR FUTURES

Long Futures



Short Futures



What are
OPTIONS?

What are OPTIONS?

Options are **financial derivatives** that give buyers the “**right**”, but not the “**obligation**”, to buy or sell an underlying asset at an agreed-upon price and date.

There are **Two Types** of Options:

- ☉ **Call Option or CE**
- ☉ **Put Option or PE**

We can **buy and sell** both.

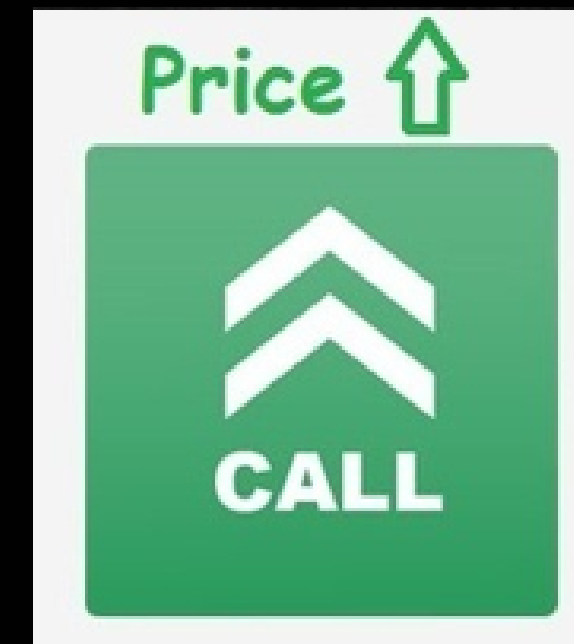


Call Option[CE]

Call Option[CE]

Gives the **option buyer** the **right(but not the obligation)** to Buy the shares of a stock at an agreed upon price, on or before a particular date.

Lets take a real world example between a **buyer and seller** of a particular plot of land.



Call Option[CE]

Anuj owns a land worth Rs. 50 lakhs. It is speculated that Airport government project might be launched on that land in the next 6 months.

Rajiv believes that the land will be worth Rs. 1Cr if the Airport project is launched but is unsure if the project will launch. Anuj believes otherwise.

They enter a deal. Rajiv pays Anuj Rs. 10 lakh and secures the right to buy the land for Rs. 50 lakh IF the project is announced within 6 months. Anuj will obligated to sell if the project is announced.

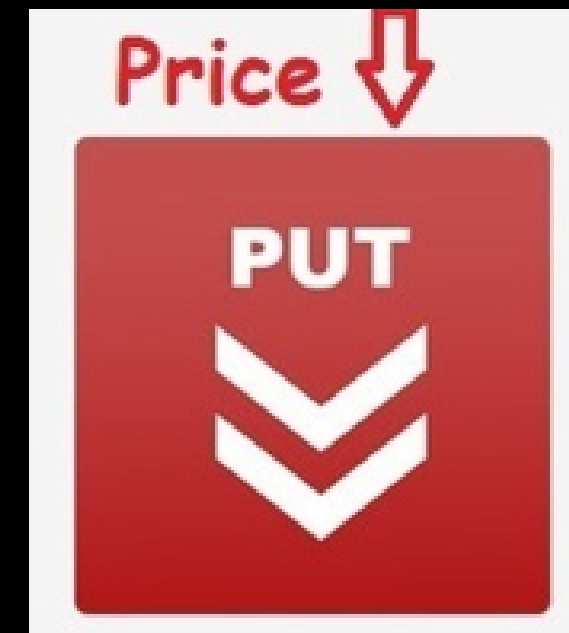
6months later, if Project = Announced : Rajiv will exercise his right and make profits.
if Project = Not Announced : Rajiv will not exercise his right, Anuj profits Rs.10lakhs

Put Option[PE]

Put Option[PE]

Gives the option buyer the **right(but not the obligation)** to SELL the shares of a stock at an agreed upon price, on or before a particular date.

Lets take a **real world example** between a Car Owner and a Car Insurance Company.



OPTIONS JARGON...

OPTIONS JARGON...

Strike Price - A strike price is the set price at which a derivative contract can be bought or sold. Take a look at the image below:

ITC 202.60 -0.6%		ATM IV 27.5 +0.7		IV chart	Analyze OI	Per lot	Expiry 27 May	Watch demo	Settings
Calls					Puts				
OI - lakh	Bid price	Offer price	LTP (Chg %)	Strike	LTP (Chg %)	Bid price	Offer Price	OI - lakh	
-	23.05	29.05	- -	177.50	0.75 -25%	0.30	0.65	0.0	
0.2	23.10	23.95	24.00 -5%	180.00	0.60 -8%	0.55	0.70	11.5	
-	18.05	25.40	- -	182.50	0.65 -87%	0.25	1.95	0.1	
0.1	15.85	18.95	20.00 +20%	185.00	0.90 +6%	0.85	0.95	10.8	
-	12.40	19.75	- -	187.50	1.20 -81%	0.30	1.90	0.0	
1.7	14.25	14.70	14.50 -9%	190.00	1.65 +27%	1.50	1.70	27.9	
-	8.05	15.65	- -	192.50	2.15 -72%	1.30	2.35	0.3	
1.1	10.55	11.10	10.60 -13%	195.00	2.90 +32%	2.80	2.90	24.1	
0.1	3.25	11.45	9.15 -60%	197.50	3.70 -62%	3.00	4.55	1.1	
24.8	7.55	7.70	7.60 -11%	200.00	4.80 +25%	4.75	4.85	50.8	
2.6	6.30	6.60	6.35 -69%	202.50	5.95 +20%	4.80	6.30	2.4	
45.7	5.20	5.30	5.25 -10%	205.00	7.40 +20%	7.25	7.50	32.0	
8.0	4.30	4.35	4.35 -10%	207.50	8.95 +16%	4.55	9.25	3.6	
90.9	3.60	3.65	3.65 -10%	210.00	10.70 +15%	10.55	10.90	37.5	
6.1	2.85	3.35	2.90 -12%	212.50	10.95 +8%	9.90	14.65	0.1	
44.7	2.40	2.50	2.45 -9%	215.00	14.35 +12%	14.25	16.45	14.4	
2.7	1.95	2.05	2.00 -7%	217.50	- -	12.60	19.95	-	
81.3	1.60	1.65	1.65 -8%	220.00	18.50 +9%	18.40	19.05	19.4	
3.1	1.20	1.50	1.30 -10%	222.50	- -	18.30	25.65	-	
28.4	1.00	1.10	1.00 -13%	225.00	23.05 +9%	22.80	25.05	6.0	
1.3	0.85	0.95	0.90 -5%	227.50	- -	23.15	28.35	-	

OPTIONS JARGON CONTINUED...

- ◎ **Underlying Price** - As we know, a derivative contract derives its value from an underlying asset. The underlying price is the price at which the underlying asset trades in the spot market.
- ◎ **OPTION EXPIRY**- Similar to a futures contract, options contract also has expiry. In fact both equity futures and option contracts expire on the last Thursday of every month.

OPTIONS JARGON CONTINUED...

- **OPTION PREMIUM** - Premium is the money required to be paid by the **option buyer to the option seller/writer**. Against the payment of premium, the option buyer buys the right to exercise his desire to buy (or sell in case of put options) the asset at **the strike price upon expiry**. Option premiums play an extremely crucial role when it comes to trading options.

Q ITC 202.60 -0.8%

Info

ATM IV 27.5 +0.7

IV chart

Analyze OI

Per lot

Expiry 27 May

Watch demo

Settings

Calls

Puts

OI - lakh	Bid price	Offer price	LTP (Chg %)	Strike	LTP (Chg %)	Bid price	Offer Price	OI - lakh
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1.7	14.25	14.70	14.50 -9%	190.00	1.65 +27%	1.50	1.70	27.9
-	8.05	15.65	- -	192.50	2.15 -72%	1.30	2.35	0.3
1.1	10.55	11.10	10.60 -13%	195.00	2.90 +32%	2.80	2.90	24.1
0.1	3.25	11.45	9.15 -60%	197.50	3.70 -62%	3.00	4.55	1.1
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2.6	5.30	5.60	6.35 -69%	202.50	5.95 +20%	4.80	5.30	2.4
45.7	5.20	5.30	5.25 -10%	205.00	7.40 +20%	7.25	7.50	32.0
8.0	4.30	4.35	4.35 -10%	207.50	8.95 +16%	4.55	9.25	3.6
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1.3	0.85	0.95	0.90 -5%	227.50	- -	23.15	28.35	-

Intrinsic Value

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Intrinsic value refers to the value of an option that the buyer makes from the option who has the right for exercising that option on a particular day.

Formula for calculating intrinsic value of an option:

Call option Intrinsic Value : **Spot Value – Strike Price**

Put option Intrinsic Value : **Strike Price – Spot Price.**

Intrinsic Value is always positive and never negative.

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Put option Intrinsic Value : Strike Price – **Spot Price**.

Intrinsic Value is always positive and never negative.

EXAMPLE: Suppose SBI spot price is at 805. Lets take a strike of 800 CE.

Intrinsic Value of the 800 ce is $805 - 800 = 5$. So 5 is the Intrinsic value of the SBI 800 CE.

Moneyiness of an Option

Moneyness of an Option

Moneyness of an Option - The moneyness of an option contract is a way of classifying options into three types-

- **In the money (ITM)** - If the option contract is ITM, then it has intrinsic Value. A call option is ITM if the stock price is higher than the strike price. On the other hand, a put option is ITM, if the stock price is lesser than the strike price.
- **At the money (ATM)** - If the options contract strike price is the same as the stock price then it is said to be ATM
- **Out of the money (OTM)** - If an option contract is OTM, then it does not have intrinsic value. A call option is OTM if the stock price is lower than the strike price. On the other hand, a put option is OTM, if the stock price is more than the strike price.

OPTION CHAIN

OPTION CHAIN

An **options chain** is a listing of all available options contracts for a given security. It shows all listed puts, calls, their expiration, strike prices, and volume and pricing information for a single underlying asset within a given maturity period.

ITC 209.05 +1.0%

Info

ATM IV 23.3 -2.5

IV chart

Analyze OI

Per lot

Expiry 27 May

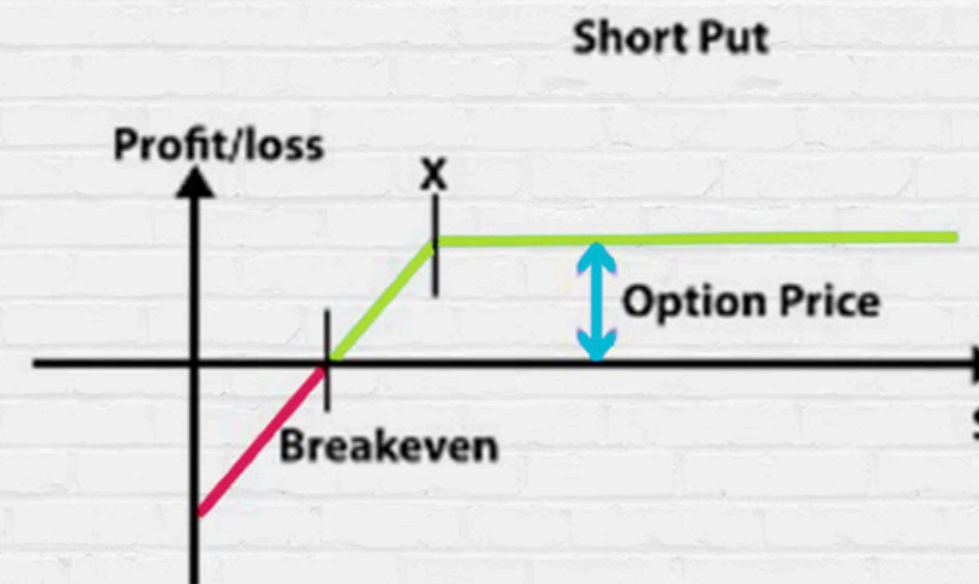
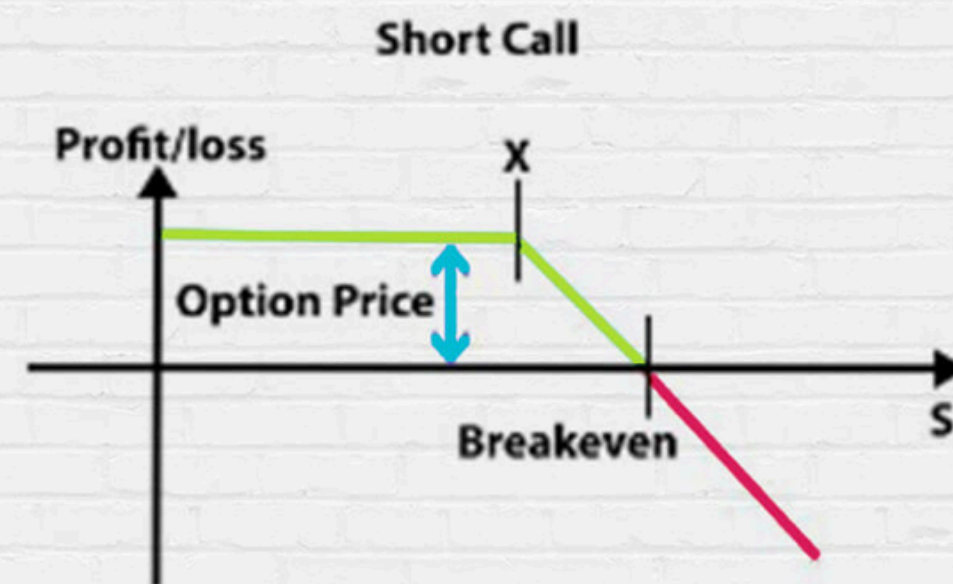
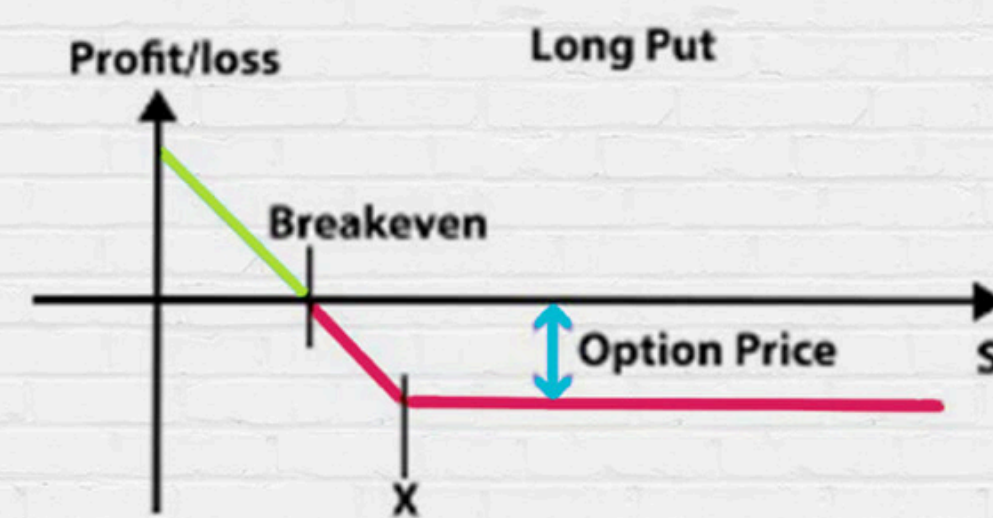
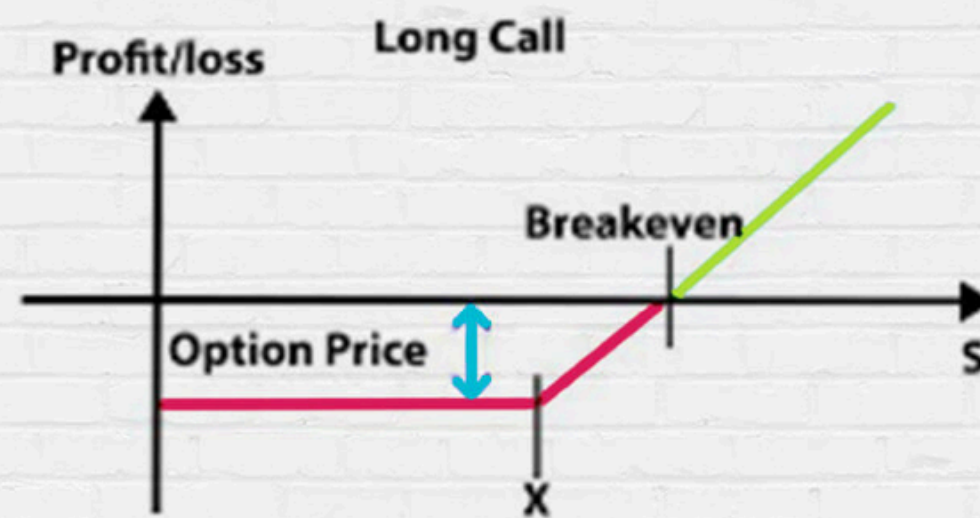
Watch demo

Settings

Calls					Puts				
OI - lakh	Bid price	Offer price	LTP (Chg %)	Strike	LTP (Chg %)	Bid price	Offer Price	OI - lakh	
0.0	24.65	25.75	22.20 -3%	185.00	0.10 -33%	0.05	0.10	11.5	
-	19.00	25.10	- -	187.50	0.05 -50%	-	0.10	2.7	
0.8	19.60	20.55	20.10 +15%	190.00	0.10 -50%	0.05	0.10	24.7	
-	15.35	20.60	- -	192.50	0.15 -25%	0.10	0.15	3.1	
1.5	14.85	15.35	15.15 +16%	195.00	0.10 -67%	0.05	0.10	16.9	
0.6	9.25	13.40	12.65 +14%	197.50	0.20 -50%	0.15	0.20	9.1	
11.6	9.95	10.20	10.20 +22%	200.00	0.25 -62%	0.25	0.30	53.6	
2.6	7.20	8.10	7.95 +24%	202.50	0.35 -67%	0.30	0.40	8.2	
33.2	5.40	5.70	5.55 +25%	205.00	0.65 -62%	0.60	0.70	34.8	
9.0	3.65	3.80	3.75 +21%	207.50	1.40 -51%	1.20	1.40	10.7	
133.8	2.35	2.40	2.35 +9%	210.00	2.50 -43%	2.40	2.50	42.1	
20.6	1.50	1.60	1.50 0%	212.50	4.15 -34%	3.60	4.35	3.7	
101.7	1.00	1.05	1.00 -9%	215.00	6.10 -27%	5.80	6.25	24.6	
13.0	0.65	0.90	0.70 -13%	217.50	8.35 -21%	6.70	9.50	0.9	
138.6	0.45	0.50	0.45 -25%	220.00	10.65 -17%	10.35	10.75	13.4	
14.6	0.30	0.40	0.35 -22%	222.50	15.75 +30%	11.40	14.40	0.0	
54.4	0.20	0.25	0.20 -50%	225.00	15.90 -11%	14.95	17.15	3.7	
4.0	0.15	0.25	0.20 -33%	227.50	- -	14.55	21.45	-	
60.7	0.10	0.15	0.10 -60%	230.00	20.00 -11%	19.60	20.55	6.5	
1.3	0.10	0.15	0.10 -50%	232.50	- -	19.55	26.20	-	
25.5	0.05	0.10	0.10 -50%	235.00	25.50 -7%	24.70	25.95	0.3	

OPTION PAYOFF

GRAPHS



**Below is a cheat
sheet for Options:**

Below is a cheat sheet for Options

We can BUY/SELL both Calls and Puts, depending upon that our P&L will change.

	BUY	SELL
CALL	BULLISH VIEW	BEARISH TO SIDEWAYS VIEW
PUT	BEARISH VIEW	BULLISH TO SIDEWAYS VIEW

OPTION GREEKS

OPTION GREEKS

Delta - Change in option price due to 1 point change in underlying

Gamma – Rate of change in Delta due to 1 point move in underlying.

Vega – Change in option price due to changes in volatility in the underlying asset.

Theta – Rate of decline in the value of an option due to the passage of time.

Rho- Change in option price due to change in interest rate.(Not Important)

