



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**
- **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.

Important terms in Futures trading...

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- **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:

- ① Copies the Underlying
- ① Tradeable
- ① Standardized Contract
- ① Time Bound
- ① Cash Settled (in most cases)

Charts of Stock vs Futures

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

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

PAYOFF GRAPH FOR 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.

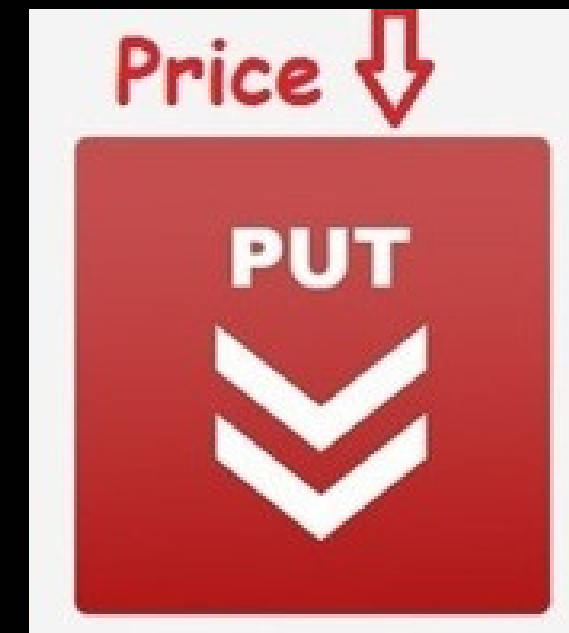


Put Option[PE]

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:

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

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	-

Puts

OI - lakh	Bid price	Offer price	LTP (Chg %)	Strike	LTP (Chg %)	Bid price	Offer Price	OI - lakh
0.0	0.30	0.65	0.75 -25%	177.50	0.60 -8%	0.55	0.70	11.5
0.1	0.25	1.95	0.65 -87%	182.50	0.90 +6%	0.85	0.95	10.8
0.0	0.30	1.90	1.20 -81%	187.50	1.65 +27%	1.50	1.70	27.9
0.3	1.30	2.35	2.15 -72%	192.50	2.90 +32%	2.80	2.90	24.1
1.1	3.00	4.55	3.70 -62%	197.50	4.80 +25%	4.75	4.85	50.8
2.4	4.80	6.30	5.95 +20%	202.50	7.40 +20%	7.25	7.50	32.0
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-	23.15	28.35	--	227.50				

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.

20_60

Info

ATM IV 27.5 +0.7

IV chart

Analyze OI

Per lot

Expiry 27 May

Watch demo

Settings

Calls

Puts

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2.7	1.95	2.05	2.00 -7%	217.50	--	12.60	19.95	-
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3.1	1.20	1.50	1.30 -10%	222.50	--	18.30	25.65	-
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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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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.

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

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	6.2
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:**

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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)

