NCDEX

Pragati ka Solid Exchange

OPTIONS

Options

An option is a financial derivative that represents a contract sold by one party (the option writer) to another party (the option holder). The contract offers the buyer the right, but not the obligation, to buy (call) or sell (put) a security or other financial asset at an agreed-upon price (the strike price) during a certain a period of time or on a specific date (exercise date).

1.1 Call Option

The buyer of the call option has the right, but not the obligation, to buy an agreed quantity of a particular commodity (underlying) from the seller of the option till/ on a certain time (expiration date) for a certain price (strike price). The seller has the obligation to sell the commodity to the buyer if the buyer decides to exercise his right.

Since the Call options give the option to buy at a certain price, so the buyer would want the commodity to go up. Conversely, the option writer needs to provide the underlying commodity in the event that the commodities market price exceeds the strike due to the contractual obligation. An option writer who sells a call option believes that the underlying commodity's price will drop relative to the option's strike price during the life of the option, as that is how he will reap maximum profit.

1.2 Put Option

The buyer of the put option has the right, but not the obligation, to sell an agreed quantity of a particular commodity (underlying), at a specified price (strike price), by/ on a predetermined date (expiration date) to the seller of the Put option. The seller has the obligation to buy the commodity if the Put option buyer decides to exercise his right.

Since Put options give the option to sell at a certain price, so the buyer would want the commodity to go down. The opposite is true for put option writers. For example, a put option buyer is bearish on the underlying commodity and believes its market price will fall below the specified strike price on or before a specified date. On the other hand, an option writer who shorts a put option believes the underlying commodity's price will increase about a specified price on or before the expiration date.

Types: Based On Expiry

American and European
The key difference between American and European options relates to when the options can be exercised.

A European option may be exercised only at the expiration date of the option, i.e. at a single pre-defined point in time.

An American option on the other hand may be exercised at any time before the expiration date.
Example: An investor of Guarseed buys a American call option on September 1st that expires on the Last Wednesday in September. During the second week of September, the value of the underlying asset rises above the strike price. The buyer can exercise his option at this moment and do not have to wait till expiry as it is an American option. If this would have been a European option, he has to wait till expiry for exercising his option.

What is Intrinsic Value & Time Value?

The two components of an option premium are the Intrinsic value and Time value

Intrinsic Value:

- The amount by which an option is in the money.

- By definition, only in-the-money options will have intrinsic value.

Intrinsic Value (Call) = Underlying Price – Strike Price

Intrinsic Value (Put) = Strike Price – Underlying Price

Time Value

- This is the part of an option price that is based on its time to expiration.

- It can be found out by subtracting intrinsic value from the price of the option.

- If an option has no intrinsic value (i.e., its out-of-the-money) its entire worth is based on time value.

Time Value = Premium – Intrinsic Value

Basic Terminology

Exercise:

- This occurs when the owner of an option invokes the right embedded in the option contract.

- In layman's terms, it means the option owner buys (For Call Option) or sells (For Put Option) the underlying commodity at the strike price, and requires the option seller to take the other side of the trade.

Premium

- This is the total cost of the option.

- An option holder pays a premium to the option writer in exchange for the right, but not the obligation, to exercise the option.

Strike Price

- This is the price which is agreed by the parties at which an option can be exercised.

- The strike price for a call option is the price at which the security can be bought; the strike price for a put option is the price at which the security can be sold.

- The strike price is sometimes called the exercise price.

Writer

- An investor who sells an option and who collects the premium payment from the buyer.

- Writers are obligated to buy or sell if the holder chooses to exercise the option.

Holders

- An investor who purchases an option and who makes a premium payment to the writer.

What is Option Moneyness?

At The Money Option (ATM)

- An option whose strike price is equal to the market price of the underlying security.

In the Money Option (ITM)

- For call options, it means that the market price of the underlying security is above the strike price of the option.

- For put options, it means that the market price of the underlying security is below the strike price of the option.

Out of the Money (OTM)

- For call options, it means that the market price of the underlying security is below the strike price of the option.

- For put options, it means that the market price of the underlying security is above the strike price of the option.

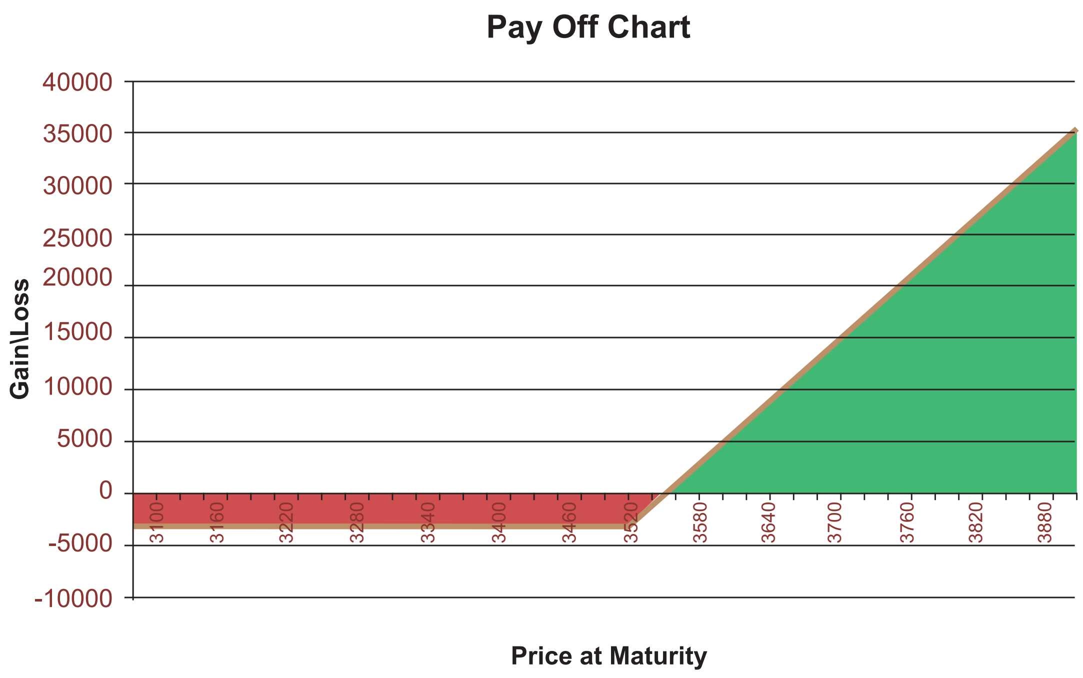
Market Scenario	Call Option	Put Option
Market price > Strike price	in-the-money	out-of-the-money
Market price < Strike price	out-of-the-money	in-the-money
Market price = Strike price	at-the-money	at-the-money
Market price ~ Strike price	near-the-money	near-the-money

Payoffs

Case 1: Buy Call

XYZ is a trader of Guarseed and has an order for delivery 2 months later. In order to hedge his price risk for this period he has following choices.

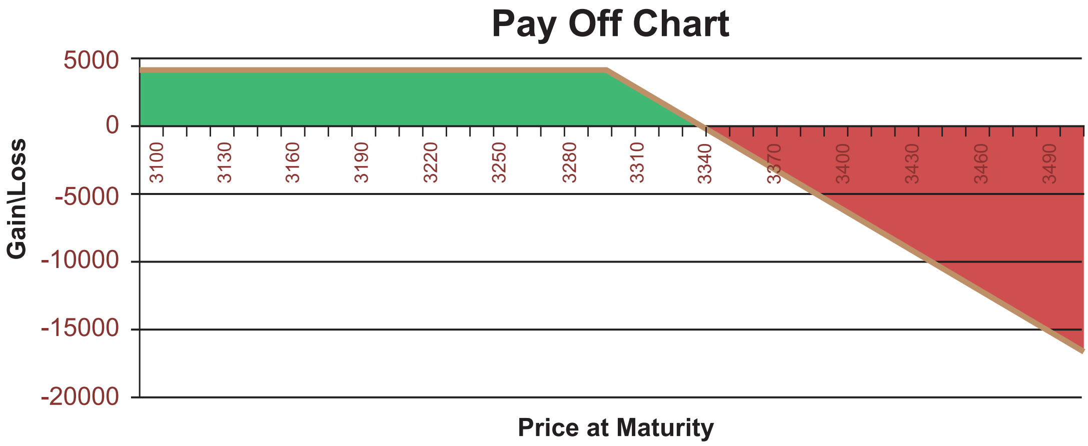
- ❑ He buys Guarseed from physical market and store it for 2 months. In this case he has to incur the inventory cost, warehousing cost, interest cost and other cost related to commodity storage.
- ❑ Alternatively he can buy future contract on NCDEX with expiry 2 months later. In this case he has to block his funds for margins and mark to market (MTM).
- ❑ If the trader do not want to incur cost related to storage as well he also does not want to block funds for margin and MTM, he can buy a call option with a strike price (say Rs.3,500) which suits his requirement. In this case, he only has to pay a premium amount (say Rs. 50 in this case). If the market goes above Rs. 3,500, he can exercise the option and take delivery or if the market remains below 3,500, he can buy from market at a cheaper price. In any case maximum lose he can incur is the premium amount (Rs. 50 in this case).



Case 2 : Write Call

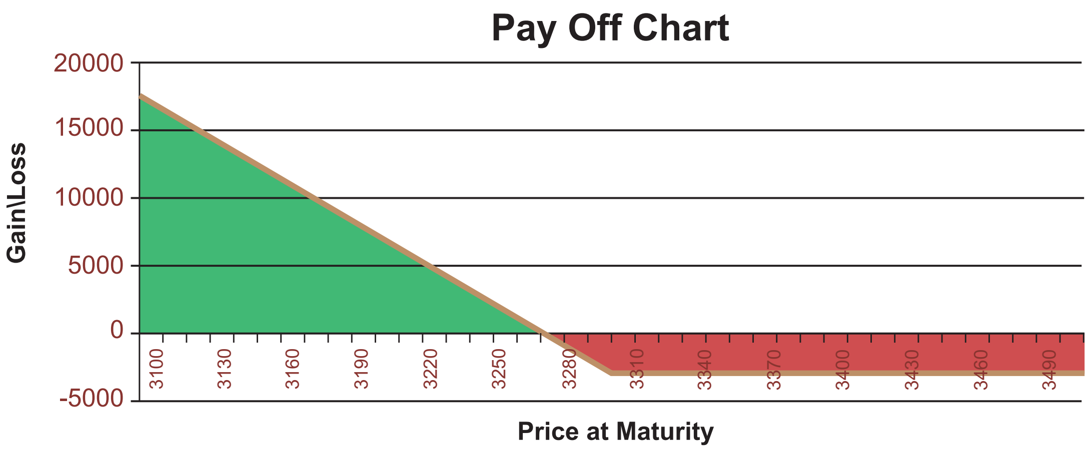
ABC is a stockiest of Guarseed and expects the market to move upwards but not beyond Rs. 3,300. He wants to earn some extra money over and above the earning he will have from appreciation in his stock value.

He will sell a call option of Guarseed with the strike of Rs. 3,300 and earn a premium (say Rs. 40) for this. If the market remains below Rs. 3,300, he will earn Rs. 40 from his option position as the buyer will not exercise his right. He will start losing money on his options position once the market moves above Rs. 3,340.



Case 3: Buy Put

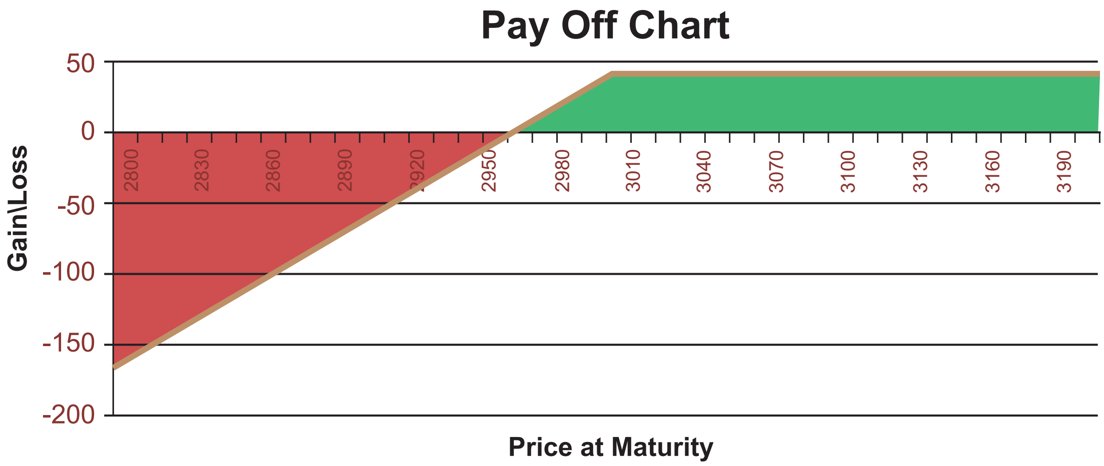
ABC is a Guarseed farmer and wants to ensure minimum selling price for his harvest. At the same time he does not want to get into the complication of margins and MTM. He also wants to gain from any upward movement in prices at the time of harvest. In this case, he can buy a put option with the strike price (say Rs. 3,300) which is the price at which he wants to sell his stocks. For creating this position he has to pay some initial premium (say Rs. 30). By doing so, he has fixed the selling price for his stocks at Rs. 3,300 if the price moves downward whereas if the prices moves upward he can gain from the movement by not exercising his right.



Case 4: Write Put

XYZ is a trader of Guarseed and expects the market to move downwards but not below Rs.3,000. He has created a short positon in Futures to take advantage of downwards price movement. He also wants to earn some extra money over and above the earning he will have futures market position.

He will sell a put option of Guarseed with the strike of Rs.3,000 and earn a premium (say Rs. 40) for this. If the market remains above Rs.3,000, he will earn Rs.40 from his option position as the buyer will not exercise his right. He will start losing money on his options position once the market moves below Rs.2,960.



Factors affecting Options Premium

With An Increase In the Parameter	Premium Of Call Option	Premium Of Put Option
Asset Price	Higher	Lower
Exercise Price	Lower	Higher
Time To Expiration	Higher	Higher
Volatility	Higher	Higher
Risk Free Rate	Higher	Lower

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