OPTION TRADING STRATEGIES IN INDIAN STOCK MARKET

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ABSTRACT

Options are important derivative securities trading all over the world for the last three decades. They are speculative financial instruments.

It has peculiar quality under which the holder of the option has been given right to buy or sell an underlying asset at a specified period for a fixed premium. Option trading strategies used by speculators, hedgers and arbitrageurs. Options can be used to create portfolio with unique features, capable of achieving investment objectives.

Key words- Option, Call options, Puts options, Hedging, Speculation, Intrinsic value, Option pricing value, Arbitrage, Long call, Short Put, Straddles

INTRODUCTION

Option is the right to buy or sell a particular asset for a limited time at a specified rate. These contracts give the buyer a right, but do not impose an obligation, to buy or sell the specified asset at a set price on or before a specified date. Today, options are traded not only in commodities, but also in all financial assets such as treasury bills, forex, stocks and stock indices.

OPTION TRADING STRATEGIES

Users of Option trading strategies are speculators, hedgers, and arbitrageurs. Options can be used to create portfolios with unique features, capable of achieving investment objectives not attainable with futures. Here are trading strategies for the various participants:

1. Arbitrage

The purchase and sale of the same security in different market to take advantage of a price disparity between two markets is termed as arbitrage. This strategy involves risk-less profit from market mispricing. Before March 2001, a major part of the volume on the stock exchange was accounted for by arbitrage of shares between the NSE and the BSE as they followed settlement periods and different carry-forward mechanisms. Profits in this activity were not substantial but it involves practically no risk, so most of
the jobbers, sub-brokers and large investors safely traded in shares. But now most scrips have come under rolling settlement, badla has been banned and settlement in uniform in the all the exchanges. In this situation, there are hardly any arbitrage opportunities in the cash market. The option market can fill this vacuum. In the both NSE and BSE, various option contracts in different series have started and are growing in number`. There has been parity in the prices of both call and put options in the same series, otherwise there will be arbitrage opportunities.

Similarly, if option prices do not observe arbitrage restriction, there may be arbitrage opportunities since more 21 contracts are available in the Nifty index options at any point of time and also in the individual stock option. Parity between call and put prices cannot be maintained at all points of time. This provides traders the much-needed opportunity to earn risk-less profit. Such transactions have increased the volume of trade and brought liquidity into the Indian option market.

2. Hedging

Hedging represents a strategy by which an attempt is to be made to limit the losses in one position by simultaneously taking a second offsetting position. The offsetting position may be in same or different security. In most cases hedgers are not perfect because they cannot eliminate all losses. Typically, a hedge strategy strives to prevent large losses without significantly reducing the gains. The hedging strategies to be used against a price rise/decline are discussed below.

**Hedging against a price increase**-

In this hedging strategy, one has either a short futures position or a short position in the cash market. The purpose is to hedge against a price rise. This can be achieved by using following options contracts:

**Long calls**- This is simplest hedging strategy to guard against price increases in short cash or futures market position. The cash market or futures position is exposed to an increase in stock price. An investor can hedge against such a price risk by buying a call option in the same stock. If prices move up, he can sell the call option at a profit and offset cash market or futures losses with it. Alternatively, he can buy the stock on strike price at a lower strike price even when the spot market is higher. In case if market prices remain constant, he will not exercise his option and allow the call option to expire unexercised. This strategy is helpful for the investor to get the advantage of favorable price movements and at the same time to avoid the risk of a price rise.` But this strategy involves the option premium and is considered to be an expensive strategy.

Long bull spreads (or long call spread)- A less expensive strategy is a long bull vertical call spread. Buying a call with a low strike price and selling one with a relatively high strike price having a common expiration date create such a spread. This strategy being less expensive provides protection only against a limited price increase. If cash prices rise above the strike price of the short call, it will be unable to provide further protection. Since this strategy does not provide a perfect hedge.
Short put- Hedgers can use sell put options as a protection against small price increases. The premium received from the put option sold can be used to offset the increased costs in the cash market due to the price increase. If, however, the price falls, the hedger will not benefit fully because the put option may be exercised against him. Selling put options as a hedge against an increase in cash prices is desirable if the underlying cash price is expected to increase only by a limited amount. This strategy does not help during a period of high volatility since if cash price moves strongly in either direction; it will not provide a hedge or may even eat away potential profits.

**Hedging against price decline**-

**Long put**- This is a very simple hedging strategy to guard against a price decline in a long cash or futures market position. Here, the spot market or futures positions are exposed to a decline in spot market or futures positions are exposed to a decline in spot prices. By buying a put option in the same stock, the investor can hedge against the risk of a fall in price. If the prices actually fall during the period when the position is held or on maturity, the investors can sell the put option at a profit, this will compensate him for the loss in the cash market or futures position. If the prices go up, the investor can sell the stock at market price and allow the put option to expire unexercised. This strategy allows the investor to take advantage of favorable price movements and, at the same time, eliminate the risk of the price decline. Investors with a bullish outlook can trade index futures by buying futures contracts and hedge their position by buying put options in the same index. This will perfectly hedge the long position in futures with the long position in the put option. Further, options contracts have a wide range or strike prices, allowing the investor or fund manager a choice of floor prices on his long position and to retain the profit potential in the prices increase. This strategy involves paying an upfront option premium, and this is considered an expensive strategy by some investors or portfolio managers.

**Long bear put spread**- ‘The bear put spread is the least expensive strategy. Such a spread is created by buying a put option with a high strike price and selling one that having a low strike price, ensuring that both have a common expiration date. In this strategy, the investor earns on a short put position and pays the premium on a long put option. Since the long put option is at the higher strike price, it is costlier than the short put option. The difference between both is the net outgo of the investor. This strategy is less expensive, but provides protection against only a limited price decline. If the cash price falls below the strike price of the short put, it will not provide further protection. If prices are between the strike prices of both put options, the investors earn the profit.

**Sell calls**- An investor can sell call options to protect himself against a small price decline. The premium received from doing so can be used to offset reduced sell proceeds in the cash market due to the price decline. This hedge strategy is also known as covered call sale since the call sale is covered against the long position in the cash market. If prices increase, the investor will not be benefited fully since the option call will be exercised against him. Selling the call option as a hedge as a hedge against a decline in the cash prices is desirable if the underlying cash price remains stable or
moves below the strike price by only a limited amount. This strategy does not help during periods of high volatility, since if the cash price moves strongly in either direction; it will not provide the hedge or take away potential profit.’

**Short minimum-maximum option strategy** - This strategy is similar to the range forward or collar discussed as above on hedging against a price rise. In the case, puts are brought with and an equal number of calls sold, with different strike prices having the same expiration date. This strategy establishes minimum and maximum sale prices as well as the range of prices but the same expiration date. This strategy establishes minimum and maximum sales price as well as the range of prices over which the investor will retain some risk but will be able to make some profits. ‘Buying the put option gives the investors a minimum sales price while still retaining the opportunity to sell the asset at a higher price increase. By selling the calls, the investor fixes the maximum sale price even if cash prices increase in future. The cost of setting up this strategy is the put premium paid, less the finance from the call premium received. This has the least cost and can be filled with hedger’s desired risk exposure by choosing different put and call prices. In this strategy, there is no risk exposure to the hedger. The difference between the call and the put strike prices establishes a price range within which the hedger participates, in both up and down movements. Within this range, the short hedger will be benefited by higher prices.’ The larger the range between strikes prices, the greater the profit potential for hedger.

3. Speculation-
A Speculator has a definite outlook about future prices and therefore buys put or call option depending upon this perception. If a he has a bullish outlook, he will buy calls or sell puts. As a bearish perception the speculator will buy put and write calls. ‘He will earn a profit if his view is in right direction. If he is not, he will lose the money. A speculator buys call or put options if his price outlook in a particular direction is very strong. But if he is either neutral or not so strong, he would prefer to write a call or a put option to earn premium. There are four basic option positions for a speculator, depending on the price outlook he has of the market.

(i) **Long calls** - A long call means buy a right to purchase the underlying shares or index at a future date and at a specified price. When the spot price of a share is lower than the strike price, he is not obliged to buy. A call buyer must be bullish on the underlying shares. ‘If the stock price remains the same or falls, the buyer of an at-the-money or out-of-money or out-the-money call will lose 100 percent of his initial investment. The price of the stock must rise by more than the premium originally paid for an at-the-money call if the call buyer is to be benefited. Further, the brokerage/commission on the purchase and sale of the option add to the amount the stock must increase by merely to break even.

One important decision for an investor is to determine which call option to be purchased. Premiums are higher for the options that have a long time until expiration because such options provide more time for the market to move to a favorable.
Another important decision is about the strike price of the option. Premiums are higher for in-the-money and at-the-money options since the changes of being profitable are greater. An out-of-the-money option has a lower premium, but the changes of it being profitable are not high.

(ii) Long put- The buyer of a put option has a right to sell the underlying asset at the strike price on or before the expiration date. Buying a put is a bearish strategy. If an at-the-money put is bought and the stock price rises or remained unchanged, the investor loses 100 percent of his initial investment. Still, the put buyer can lose only the initial premium paid.

(iii) Short Call- The writer of the call is under the obligation to deliver the underlying asset to the buyer at the strike price. If the call writer does not possess the underlying asset, he is writing naked calls. He has to deliver the underlying assets only when the market price is more than the stock price. He makes no losses if it is below the strike price, but gains in the form of a premium. A naked call writer must be bearish, if the stock remains unchanged or declines, the writer of the call will keep the premium, but he should be aware of the call keep the premium, he should be aware of the potential substantial margin requirement on the naked option positions. The call writer must be aware that he is taking substantial risk if he is wrong about the future price movements of the stock.

The call writer can write at-the-money, out-of-the-money, and in-the-money call options. When writing out-of-the-money call, if stock prices rise slightly or remain unchanged, the call writer can keep the premium. The risk of an out-of-the-money call option being exercised is low.

Further, its premium is lower than those on other call options and so the potential profit is lower. The strategy of writing uncovered calls reflects an investor’s expectations and his tolerance for risk. An investor willing to write an in-the-money call option for a higher premium believes that there is a small likelihood of the prices of a stock rising in the near future.

(iv) Short put- The writer of a put option has an obligation to buy the underlying asset from a put buyer at the strike price when the option is exercised. The put option should be exercised only if the stock price is less than the strike price. If the stock price is at or above the put’s stock price expiration, the put will expire worthless and the seller will keep the premium. The put option writer, like the call option writer, may suffer potential unlimited losses. The writer of the put option believes that prices will be stable or rise; therefore he is prepared to take the risk of prices falling.

4. Option Spreads-
This is a strategy to take advantage of relative price changes. This involves buying and selling different options simultaneously, creating a price spread that widens or narrows depending on what happens to the prices of the underlying assets. Options spreads in which two legs of the spreads have different strike prices but the same expiry date are called vertical spreads. However, an option spread that has two
expiration dates but the same strike price is called a horizontal spread. This is also a speculative strategy but with limited risk and return compared to naked speculation. Some important option spreads are as follows:

**(a) Bullish Option Spreads** - These make profits when the asset prices go up. Purchasing an option with a low strike price and selling one with a higher strike price with the same expiration date creates such spreads.

**Vertical call option spreads** - It is also called call bull spread or long call spread. These are created when there is a simultaneously purchase and sale of call option with the same expiration date. The premium received from selling the higher strike call premium partially reduces the cost of buying the lower strike call. To take this position, an investor has to make a cash investment equal to the difference between the low strike premium and the high strike premium. If at the expiry of the option, the asset price is less than or equal to the lower of the two strike prices, both options will expire without being exercised. The options trader will lose the premium difference paid. The maximum loss that can arise will be:

\[
\text{Lower Strike Premium} - \text{Higher Strike Premium}
\]

If the lower strike call option gains value faster than the higher strike call option loses, it results in a net gain of the spread value exceeds the higher of the two strike prices at expiration, both options will be exercised and the maximum profit will be:

\[
\text{higher strike price less lower strike price less net premium paid.}
\]

If the price at expiry lies between the two strike prices, so that the lower strike price call is in-the-money but the higher strike price call is out-of-the-money, the break-even price will be:

\[
\text{Lower Strike Price} + \text{Net Premium Paid}
\]

**(ii) Vertical put option spreads** - It is also called put bull spreads or short bull spreads. This strategy is the reverse of the vertical call spreads. It is created by buying a put option with a low strike price and selling another put option with a low strike price, both for the same period. Here, the premium paid on the lower option will be less than that received from the put option with the higher strike price. Here the net option premium will generate the cash inflow.

The payoff profiles at expiration with different price scenarios are as under:

- Maximum Profit = Net Option Premium income.
  
  (When the future price is higher than the strike prices of the both the option, then the options will expire out-of-the-money.)
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- Maximum Loss = Higher Strike Price – Lower Strike Price – Net Option Premium Income. (When the future price is lower than the strike prices of the both options then both options exercised.)
- Break-even price = Higher Strike Price – Net Option Premium income.

Similarly to vertical bull call spreads, vertical put spreads have a limited profit and loss potential. The main difference is that the call spread results in net premium being paid, while put results in net premium being received.

(b) Bearish Option Spreads- A bearish option spread gives a profit when the price of the underlying asset falls. This spread involves selling an option with a comparatively low strike price and buying one with higher strike price for the same expiration date.

(i) Vertical call option spread- It is also called call bear spread or short call spread. A bear vertical call option spread is created by buying a call option with a high strike price and selling one with a lower strike price, both with the same expiration date. This is exactly the reverse of the vertical call option bullish spread where a long call is at a higher strike price and the short call at a lower strike price.

In this strategy, the speculator gains the net option premium while creating the spread since a long call at a higher strike price will be lower than the premium received on a short call with a low strike price. If the stock price falls to a level lower than the lower strike price, both options will expire unexercised and the spread will yield an income to the extent of the net premium received. If the prices are higher than the long call strike price, both options will be in-the-money; the maximum loss will be the difference between the strike prices of the two options less net premium received.

The break-even price will be the higher strike price minus net premium received. This strategy helps in earning limited profits if prices decline but will lead to some losses when prices go up. The maximum income and losses are limited and are known even at the time of creating the spread position.

(ii) Vertical put option spread- It is also called put bear spread or long put spread. A bear vertical put option spread created by, buying a put option with a higher strike price and selling one with a lower strike price. This is the reverse of a bull vertical put option. If prices rise above the higher strike price, both options will expire unexercised since they will be out-of-the-money. In this strategy, the premium paid is higher than the premium received, since the put option is purchased at a higher strike price. The net loss in this situation will be the net premium paid. If the stock price is equal to the lower strike price or even lower than that, then both options will be in-the-money and exercised.

Since the long put is on the higher price, the speculator will gain the difference between the two strike prices. The maximum profit will be the difference between the two strike prices minus the net premium paid. This strategy will yield some income if prices fall. In the case of a price rise, this strategy will incur some losses.
5. Butterfly spread-
This is a spread position involving options with three different strike prices. This position involves buying a call option with a higher strike price, selling two call options with the mid-strike price and buying another that has a lower strike price. The mid-strike price will be usually close to the spot price. Thus, in this strategy one long option is in-the-money, two short options are at-the-money and one long option is out-of-the-money. In this strategy the investor pays the premium for the two options receives premium on the other two. The net premium paid is very small. Profit potential in this strategy will be very limited, since the short options neutralize the gains on the long options beyond the difference in the strike prices. The risk of losses is also very limited in this case. This option strategy can be made by using call and put option.

6. Calendar or Time Spread-
This is also known as horizontal spread. ‘This is because different option contracts having the same strike price with different expiration periods are used in this strategy. For example, the calendar spread is used on Nifty at a strike price of Rs. 1,600 with expiry periods of November 2006 and December 2006. The option is costlier if the time to maturity is more. Therefore this strategy needs some initial investment in the form of the net premium (difference between the premium paid on the distant contract and the premium received on the near-month contract). The option holder makes a profit if the spot price is near the strike price on the maturity of the short option. A loss is incurred if the prices are significantly different than the strike price.

7. Straddles-
These are created by simultaneous sale or purchase of the options. These involve buying the put and a call (long straddle) or selling a put and a call (short straddle). This strategy is often used by speculators who believe that the prices of the asset will move significantly in one direction or the other (long straddle), or remain fairly constant (short straddle).

- **Long straddle** - A long straddle is created by buying an equal number of calls and puts with the same strike price and with the same expiration date. This is beneficial if the prices of the underlying assets move substantially in either direction. If prices fall, the put option is profitable, and if prices rise, the call option will yield gains.

- **Short straddle** - This is reverse of the long straddle. Here, the investor sells an equal number of calls and puts for the same strike price and with the same expiration date. This strategy is adopted only when prices are expected to be stable. This strategy yields profits if prices are stable, but leads to losses if future prices move substantially in the either direction, which is just the opposite of the long straddle position. If the future price is the same as the strike price, both the call and the
put option will expire worthless and the investor will retain the total premium received from writing the options.

8. Straps/ Strips-
Strips involve a long position in one call and two puts with the same expiration dates and strike prices. A strap involves a long position in two calls and one put with the same expiration dates and strike prices. An investor uses strips when he thinks that there will be a large price movement in the stock, but a fall is more likely. A strap investor’s view is the same about volatility, but considers an increase in the stock price more likely.

CONCLUSION
Option strategies provide means of risk reduction, anyone who is at risk from a price change can use options to offset that risk. Different strategies are useful for different market perceptions of the price movements. Option trading strategies are used for both hedging and speculation. In different market perception and price movements different strategies are useful.

Option strategies are complex positions created including a combination of options and underlying shares which help the investor to benefit from his view. Hence the complexities of the investment risks and their management gives rise to commensurate solution through a serious of innovative strategies in the form of a combination of options of different types. It is indeed attribute to the versatility of the mechanics of option trading that a customized solution can be worked out for each specific risk management problem.

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