CHAPTER-2

DERIVATIVE TRADING STRATEGIES

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“You’re neither right nor wrong because other people agree with you. You’re right because your facts are right and your reasoning is right—and that’s the only thing that makes you right.”

Warren Buffett

2.1 INTRODUCTION

India is one of the most successful developing countries in terms of a vibrant market for exchange-traded derivatives. This reiterates the strengths of the modern development in India’s securities markets, which are based on nationwide market access, anonymous electronic trading, and a predominant retail market. There is an increasing sense that the equity derivatives market plays a major role in shaping price discovery.

2.2 DERIVATIVE TRADING MECHANISM

2.2.1 Market Design

NSE and BSE are only two exchanges in India that have been permitted to trade in equity derivatives contracts. The NSE’s market share in the total turnover of the derivatives market is a bit lower than the 100 percent mark. The market design here is with reference to the derivative segment of the NSE (hereafter referred to as the F&O segment).

Table 2.1 Different Aspects of the market design for the F&O segment of the Exchanges

| Trading Mechanism | The futures and options trading system of the NSE, called the NEAT-F&O trading system, provides a fully automated, screen-based, anonymous order driven trading system for derivatives on a nationwide basis, and an online monitoring and surveillance mechanism. **There are four entities in the trading system:**
a. Trading members, who are members of the NSE, and can trade either on their own account or on behalf of their clients, including participants. |
b. Clearing members, who are members of the NSCCL, and carry out risk management activities and confirmation/inquiry of trades through the trading system. These clearing members are also trading members, and clear trades for themselves and/or others.
c. Professional clearing members (PCM) are clearing members who are not trading members. Typically, banks and custodians become PCMs, and clear and settle for their trading members.
d. Participants are clients of trading members such as financial institutions. These clients may trade through multiple trading members, but settle their trades through a single clearing member only

<table>
<thead>
<tr>
<th>Membership</th>
<th>The members are admitted by the NSE for its F&amp;O segment in accordance with the rules and regulations of the Exchange and the norms specified by the SEBI</th>
</tr>
</thead>
</table>
| Contracts Available | Index futures and index options contracts on the NSE based on the Nifty 50 Index, the CNX IT Index, the Bank Nifty Index, and the Nifty Midcap 50.  
  - Index futures contracts on the global indices Dow Jones Industry Average and the S&P 500, and option contracts on the S&P 500.  
  - Stock futures and options based on 228 individual securities |
| Charges          | The transaction charges payable to the exchange by the trading member for the trades executed by him/her on the F&O segment are fixed at 2 per lakh of turnover (0.002 percent), subject to a minimum of 1, 00,000 per year. For the transactions in the options sub-segment, however, the transaction charges are levied on the premium value at the rate of 0.05 percent (each side), instead of on the strike price as levied in the previous case.  
  The NSE has reduced the transaction charges for trades done in the futures segment from its present level to a slab-based structure as given below, w.e.f. October 1, 2009. |

<table>
<thead>
<tr>
<th>Total Traded Value in a Month</th>
<th>Revised Transaction Charges (per lakh of Traded Value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxable securities transaction</td>
<td>Rate (percent)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Sale of an option in securities</td>
<td>0.017</td>
</tr>
<tr>
<td>Sale of an option in securities, Where option is exercised</td>
<td>0.125</td>
</tr>
<tr>
<td>Sale of a futures in securities</td>
<td>0.017</td>
</tr>
</tbody>
</table>

The value of taxable securities transaction relating to an “option in securities” or “futures in securities” is determined based on the trading volume and the applicable tax rate.
securities” shall be the option premium, in the case of the sale of an option in securities. The value of taxable securities transaction relating to an “option in securities” was be the settlement price, in the case of the sale of an option in securities, where the option is exercised.

| Clearing & Settlement | The National Securities Clearing Corporation Limited (NSCCL) undertakes the clearing and settlement of all trades executed on the futures and options (F&O) segment of the NSE. • Index as well as stock options and futures are cash settled, i.e., through the exchange of cash. |

Source: ISMR Module of NSE.

2.2.2 Risk Management Framework

In order to have an efficient risk management framework, the most important part in the risk containment mechanism for the F&O segment is the **margining system and the online position monitoring system**. The actual position monitoring and margining is carried out online through the Parallel Risk Management System (PRISM). The PRISM uses SPAN®1 (Standard Portfolio Analysis of Risk). The SPAN system is for the computation of online margins, based on the parameters defined by the SEBI. SPAN is developed by NSE on the lines of CBOE.

2.2.2.1 Risk Containment Mechanism

The NSCCL has developed a comprehensive risk containment mechanism for the F&O segment. **The salient features of the risk containment mechanism on the F&O segment are:**

a. The financial soundness of the members is the key to risk management. Therefore, the requirements for membership in terms of capital adequacy (net worth, security deposits, and so on) are quite stringent.

b. The NSCCL charges an upfront initial margin for all the open positions of a clearing member (CM). It specifies the initial margin requirements for each futures/options contract on a daily basis. It follows a Value-at-Risk (VaR) based margining computed through SPAN. The CM in turn collects the initial margin from the trading members (TMs) and their respective clients.
c. The open positions of the members are marked to market, based on the contract settlement price for each contract at the end of the day. The difference is settled in cash on a T+1 basis.

d. The NSCCL’s online position monitoring system monitors a CM’s open position on a real time basis. Limits are set for each CM based on his/her effective deposits. The online position monitoring system generates alert messages whenever a CM reaches 70 percent, 80 percent, and 90 percent, and a disablement message at 100 percent of the limit. The NSCCL monitors the CMs for initial margin violation and exposure margin violation, while the TMs are monitored for initial margin violation and position limit violation.

e. The CMs are provided with a trading terminal for monitoring the open positions of all the TMs clearing and settling through him/her. A CM may set the limits for the TM clearing and settling through him/her. The NSCCL assists the CM in monitoring the intra-day limits set up by a CM, and whenever a TM exceeds the limits, it stops that particular TM from further trading.

f. A member is alerted of his/her position to enable him/her to adjust his/her exposure or to bring in additional capital. Margin violations result in the disablement of the trading facility for all TMs of a CM in the case of a violation by the CM.

g. A separate settlement guarantee fund for this segment has been created out of the deposit made by the members.

2.2.2.2 Margins Requirements

As discussed earlier, margins are levied for both CM and TM. They are of following types:-

• **Initial margin**: The margin in the F&O segment is computed by the NSCCL up to the client level for the open positions of CMs/TMs. These are required to be paid upfront on a gross basis at the individual client level for client positions, and on a net basis for proprietary positions. The NSCCL collects the initial margin for all the open positions of a CM based on the margins computed by the NSE-SPAN. A CM is required to ensure the collection of adequate initial margins from his TMs upfront. The TM is required to collect adequate initial margins upfront from his clients.
• **Premium Margin**: In addition to the initial margin, a premium margin is charged at the client level. This margin is required to be paid by a buyer of an option until the premium settlement is complete.

• **Assignment Margin for Options on Securities**: An assignment margin is levied in addition to the initial margin and the premium margin. It is required to be paid on the assigned positions of the CMs towards the final exercise settlement obligations for option contracts on individual securities, until such obligations are fulfilled. The margin is charged on the net exercise settlement value payable by a CM towards the final exercise settlement.

• **Exposure margins**: Clearing members are subject to exposure margins in addition to initial margins.

• **Client Margins**: The NSCCL intimates all the members of the margin liability of each of their clients. Additionally, the members are required to report the details of the margins collected from their clients to the NSCCL, which holds the client margin monies in trust.

### 2.2.2.3 Exposure Monitoring and Position Limit

Another component of the risk management framework for the derivatives segment is the stipulation of exposure limits and position limits on trading in the different categories of contracts by the market participants.

**Table 2.2 Exposure and Position Limits**

<table>
<thead>
<tr>
<th>Exposure Limit</th>
<th>Index Options</th>
<th>Index Futures</th>
<th>Stock Options</th>
<th>Stock Futures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>33.33 times the liquid net worth of the member. Liquid net worth =The total liquid assets deposited with the exchange/CC towards IM and capital adequacy,</td>
<td>33.33 times the liquid net worth of the member</td>
<td>Higher of 5 percent or 1.5 sigma of the notional value of gross open position</td>
<td>Higher of 5 percent or 1.5 sigma of the notional value of gross open position</td>
</tr>
</tbody>
</table>
| Client Level | Trading Member Level | For stocks having applicable market wide position limit (MWPL) of ` 500 crore or more, the combined futures and options position limit is 20 percent of applicable MWPL or ` 300 crore, whichever is lower, within which stock futures position cannot exceed 10 percent of the applicable MWPL or ` 150 crore, whichever is lower.

- For stocks having applicable MWPL less than ` 500 crore, the combined futures and options position limit would be 20 percent of the applicable MWPL, and the futures position cannot exceed 20 percent of the applicable MWPL or ` 50 crore. |

| LESS | IM applicable to the total gross position at any given point of time of all trades cleared through the clearing member. | The gross open position for each client, across all the derivative contracts on an underlying should not exceed 1 percent of the free-float market capitalization (in terms of number of shares) or 5 percent of the open interest in all derivative contracts in the same underlying stock (in terms of number of shares), whichever is higher. | The trading member position limits in equity index option contracts is higher of ` 500 crore or 15% of the total open interest in the market in equity index option contracts. Applicable on open positions in all option contracts on a particular underlying index. | The trading member position limits in equity index futures contracts is higher of ` 500 crore or 15% of the total open interest in the market in equity index futures contracts. | For stocks having applicable market wide position limit (MWPL) of ` 500 crore or more, the combined futures and options position limit is 20 percent of applicable MWPL or ` 300 crore, whichever is lower, within which stock futures position cannot exceed 10 percent of the applicable MWPL or ` 150 crore, whichever is lower. |

- For stocks having applicable MWPL less than ` 500 crore, the combined futures and options position limit would be 20 percent of the applicable MWPL, and the futures position cannot exceed 20 percent of the applicable MWPL or ` 50 crore. |
The market wide limit of open position (in terms of the number of underlying stock) on futures and option contracts on a particular underlying stock should be 20% of the number of shares held by non-promoters in the relevant underlying security, i.e., free-float holding. This limit is applicable on all open positions in all futures and option contracts on a particular underlying stock.

Source: ISMR, NSE.

2.2.2.4 NSCCL-SPAN - The objective of the NSCCL-SPAN is to identify the overall risk in the portfolio containing all the futures and options contracts for each member. The system treats futures and options contracts uniformly, while, at the same time, recognizing the unique exposures associated with options portfolios, such as extremely deep out-of-the-money short positions and inter-month risk. Its overriding objective is to determine the largest loss that a portfolio might reasonably be expected to suffer from one day to the next day, based on the 99 percent VaR methodology. The SPAN considers the uniqueness of the option portfolios. Since the value of an option is affected by many factors such as underlying market price; Volatility (variability) of underlying instrument; Time to expiration, strike price and Interest rates. As these factors change, the value of the options maintained within a portfolio also changes. Thus, the SPAN constructs the scenarios of probable changes in underlying prices and volatilities in order to identify the largest loss a portfolio might suffer from one day to the next. It then sets the margin requirement to cover this one-day loss. The complex calculations (e.g., the pricing of options) in the SPAN are executed by the NSCCL. The results of these calculations are called risk arrays. Risk arrays and other necessary
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data inputs for margin calculation are provided to the members daily in a file called the
SPAN Risk Parameter file. The members can apply the data contained in the Risk
Parameter files to their specific portfolios of futures and options contracts, to
determine their SPAN margin requirements. Hence, the members need not execute a
complex option pricing calculation, which is performed by the NSCCL. The SPAN has
the ability to estimate the risk for combined futures and options portfolios, and also to
revalue the same under various scenarios of changing market conditions. The NSCCL
generates six risk parameter files for a day, taking into account prices and volatilities at
various time intervals, which are provided on the Website of the Exchange*.

*https://www.nseindia.com/content/us/ismr_full2011.pdf

2.3 DERIVATIVE TRADING STRATEGIES

Derivatives have been a part of financial practice for a decade, but this discipline has
not received the same level of academic scrutiny and acceptance as more traditional
approaches such as fundamental analysis & technical analysis. One of the main
obstacles with derivatives is the highly complex nature of Derivatives - the presence
of underlying assets, unique variants is often in the eyes of the beholder. So, It
became very important to understand market price behavior, set up controls & risk
limits before trading in derivatives. There are various strategies available in the
market using different derivatives products-Futures, Options, Swaps or a combination
of them. Strategy depends on the view point of the market or Individual stock.
Viewpoint can be bullish, bearish or uncertain. Strategy is framed by an individual
taking into consideration many factors. It depends on objective of trading i.e. hedging,
arbitrage or speculation, volatility of individual stock, viewpoint of the market or
stock, technical indicators like open Interest, volume ,turnover, put call ratio, implied
volatility, option premiums etc. It also depends on the risk taking capability of
investor. It also depends on which derivative product you are using-Futures, Options-
Call or put for your strategy. There is a wide array of strategies using each product.

Strategy can be plain vanilla or combinations of put+call+spread. As surveyed by
Anjali Choksi (2010) majority of investors are not aware of strategies like butterfly,
straddle and strangle strips & straps. Such Investors follow their own strategies like
using call & put simultaneously on same underlying asset, 2 calls and 1 put or 2 puts
and 1 call to take advantage of premium income. There are also some of them who know about such strategy but have no knowledge about its usage. She found that there was awareness of derivatives among mass investors and those investors having no knowledge of it depend mostly on broker or take friends advice in order to make investment.

Sandeep Srivastava et al. (2008) studied derivative trading from brokers perception & found that derivative securities have definitely penetrated into the Indian stock market & investors are using these securities for different purposes, namely risk management, profit enhancement, speculation & arbitrage. Active Investors continuously search for investment strategies that provide returns greater than market return. Hence they resort to different strategies that are either based on fundamental analysis, technical analysis, market anomalies & security attributes.

There is huge scope for creation of strategies using individual derivative products or a combination of them- whether its future or options. Again options itself is a different world since they take on completely different characteristics. They may be spelled the same but they are vastly different due to the nature of the underlying assets. **Everybody agrees that trading in futures are poles apart from trading in options.** Time decay and the tendency of markets to stay range bound turns the odds against traders using typical options strategies. It is necessary to utilize the full arsenal of trading methods that capitalize on the flexibility option products provide.

### 2.3.1. Future Trading Strategies

A future contract is an agreement between two parties to buy or sell an asset in future for a specified price for a price determined today. The underlying can be anything- stock, index, currency or any commodity. The undertaker can have two positions in it:- a) Long Position is when buyer of a futures contract agrees to purchase the u.a. b) Short Position is when seller agrees to sell the asset. When they are traded in OTC market, they are called forwards but if they are traded on exchange, they are called Futures.
Trading strategies can be created using futures depending on the objective of the analyst. They can arbitrage, speculate and hedge using futures. The main stake holders in future trading strategies are the hedgers and speculators. Hedgers are risk averse and they use futures when they are already exposed to price risk from the underlying asset if they have or they are going to buy. Their interest is in protecting themselves from the future change in price of underlying asset. One can use long hedge and short hedge using long and short futures.

Speculative-futures trading strategies transaction includes straightforward buying or selling of future contracts to profit from expected increases or decreases in prices. They are risk takers and earn handsome profits or huge loss because of this risk.

2.3.2 Options Trading Strategies

There are two types of options, a call and a put. Understanding what each of these is and how each works was help you determine when to use them. The power of options lies in their versatility. Options enable investor to adapt or adjust their position according to any situation that arises. Options can be as speculative or as conservative as the way investor wants. This means investor can do everything from protecting a position from a fall in price to outright betting on the movement of a market or index.

Options trading are an extremely vast field unlike stock trading. In stock trading, investor either buy or sell short the stock itself, that’s all there is to it. However, in options trading, there are two kinds of options; Call options and Put options on every option able stock and each kind of option can be bought or shorted or put together into combinations of advanced strategies in order to cater to specific outlooks.

2.3.2.1 Types of options

A. Depending on which Right to Buy

1. **Call Option** - A call option gives the holder the right but not the obligation to buy the underlying asset at a specified exercise price. Since the initial cash flow to buy the option is comparatively small, investors bullish on the asset (can be a stock or any other asset for that matter) can use call options to maximize their returns by buying into the product. In either case also, if asset price falls, the maximum loss for the
investor is only the premium he has paid. The buyer of an option pays a premium to
the seller for the right, not the obligation to exercise. This financial value is treated as
an asset, although eroding, to the option buyer and a liability to the seller.

2. Put Option - A put option is the reverse of the call option. It gives the holder the
right to sell an asset at a predetermined price. Investors bearish on the future trends of
the asset price can use a put option. It confers the same benefits as in a call option.
Investors wasing to accept considerable risk can write (or sell) options, collecting the
premium and taking advantage of the tendency for most options to expire worthless.
The seller collects premium and takes on unlimited risk until the position is either set
off or expires

B. Depending on Exercising Rights

1. American Options - They can be exercised at any time before expiry of option or at
the expiry. NSE had initially all stock options as American but now all options are
European.

2. European Options - They can be exercised only at the time of expiry. All index
options are European in India.

Now all options whether stock or Index is European in India.

2.3.2.2 Pros and Cons of Options Trading

Options have benefits as well as drawbacks.

Pros 1. Cost Efficiency: Options have great leveraging power. As such, an investor
can obtain an option position that was mimic a stock position almost identically, but at
a huge cost savings.

Pros 2. Less Risk: Depending on How You Use Them: There are situations in which
buying options is riskier than owning equities, but there are also times when options
can be used to reduce risk. It really depends on how we use them. Options can be less
risky for investors because they require less financial commitment than equities
**Pros 3. Higher Potential Returns:** Options have higher risks and pay higher returns compared to stocks.

**Pros 4. More Strategic Alternatives:** Options offer more investment alternatives since they are very versatile and works as a flexible tool. There are many ways to use options to recreate other positions which are known as synthetics.

**Cons 1. Higher spreads:** Options tend to have higher spreads because of the lack of liquidity which means investor was have to pay more when doing an option trade.

**Cons 2. Higher Cost:** Options trades was cost more in charges on premium per rupee invested. These charges may be even higher for spreads where investors have to pay charges for both sides of the spread.

**Cons 3. Complicated:** Options are very complicated for new investors. Most beginners, and even some advanced investors, think they understand them when they don't.

**Cons 4. Time Decay:** Options decay faster and they value goes down with the passage of time.

**Cons 5. Less information:** Value of an option is affected by many factors so it becomes difficult to predict its movement or get standard analytical information like the implied volatility.

**Cons 6. Options not available for all stocks:** Although options are available on a good number of stocks, this still limits the number of possibilities available to investor.

### 2.3.2.3 Option Trading Strategies

1. **Arbitrage** –It is the purchase and sale of the same security in different market to take advantage of a price disparity between two markets. Arbitrageurs earn risk-less profit from market imperfections. Since 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 but now due to same as settlement periods and carry-forward mechanisms, 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 and expiration months have started and are growing in number.

2. **Hedging** – It is a strategy which aims to minimize loss in the existing positions or to reduce the loss in the exposed risks. It involves simultaneously taking a second offsetting position along with the original position. The offsetting position may be in same or different security. To get a perfect hedge which eliminates all losses is difficult all the time but one can definitely reduce loss. The hedging strategies to be used against a price rise/decline are discussed below.

1. **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:

   A. **Long calls**

   It is the simplest hedging strategy to protect 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.

   B. **Short put**

   Short Put can be used to protect against price increase. 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. But if price falls then, the hedger was not benefit fully because the put option may be exercised against him. This strategy works only when markets are stable or not very volatile since more volatility means more price movement and if cash price moves strongly in either direction; it was not provide a hedge or may even eat away potential profits.

2. **Hedging against price decline**

   A. **Long put**
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A very simple hedging strategy to guard against a price decline in long cash or futures market position. The cash position or future positions are exposed to a decrease in spot market or futures positions. 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.

**B. Sell calls**

Another way is selling call options to protect himself against a small price decline. The premium received from selling options 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.

3. **Speculation** - A Speculator has a definite outlook about underlying asset future prices and accordingly buys put or call option depending upon this perception. If he has a bullish outlook, he was buy calls or sell puts. As a bearish perception, the speculator was buy put and write calls. He is a risk taker and accordingly earns high profit or loss.

**A. 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 stock price increases beyond strike price, the profit of the buyer starts and if the price remains below the strike price, the maximum loss is the premium paid.

**B. 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 price at expiry is below strike price, buyer earns profit else loses the premium.

**C. 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 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 was 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.
D. 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 was expire worthless and the seller was keep the premium.

2.3.2.1 OPTION SPREAD TRADING

The surge in volatility has created a plethora of trading strategies to be explored and used by traders in order to earn returns and minimize risk. The best way to counter the implied volatility effect is to use options spreads.

Option spread trading has become increasingly popular with active traders and investors. Option spreads involve purchase one option in conjunction with the sale of another option. If managed properly, these spreads can provide experienced traders with the potential for large returns without undertaking a great deal of risk.

The strategy takes advantage of relative price changes. It 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. This is also a speculative strategy but with limited risk and return compared to naked speculation. The same spread if created using different expiration months are called horizontal spreads. Some other important option spreads are as follows:

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 was move significantly in one direction or the other (long straddle), or remain fairly constant (short straddle).

A. 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 was yield gains.

B. 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.

2.4 INTRODUCTION TO THE SELECT OPTION SPREAD STRATEGIES

There were five strategies selected from option spread strategies. They are as follows:-

1. Vertical Bull Spread

Strategy: - Directional

- Long call Lower Strike, short call Higher Strike
- Long put Lower Strike, short put Higher Strike

When to use: If you think the market was go up, but with limited upside. Good position if you want to be in the market but are less confident of bullish expectations. You’re in good company. This is the most popular bullish trade.

Source: www.optionsguide.com
Profit characteristics: Profit limited, reaching maximum if market ends at or above Higher strike price at expiration. If call-vs.-call version (most common) used, break-even is at Lower Strike Price + net cost of spread. If put-vs.-put version used, break-even is at Higher Strike Price – net premium collected.

Loss characteristics: What is gained by limiting profit potential is mainly a limit to loss if you guessed wrong on market. Maximum loss if market at expiration is at or below lower strike price. With call-vs.-call version, maximum loss is net cost of spread.

Decay characteristics: If market is midway between LSP and HSP, little if any time decay. If market is closer to HSP, time decay is generally a benefit. If market is closer to LSP, time decay is generally detrimental to profitability.

2. Vertical Bear Spread

Strategy: Directional

- Short put A, long put B
- Short call A, long call B

Figure 2.2 Vertical Bear Spread

Source: www.optionsguide.com

When to use: If you think the market was go down, but with limited downside. Good position if you want to be in the market but are less confident of bearish expectations.
The most popular position among bears because it may be entered as a conservative trade when uncertain about bearish stance.

**Profit characteristics:** Profit limited, reaching maximum at expiration if market is at or below strike price A. If put-vs.-put version (most common) used, break-even is at B – net cost of spread. If call-vs.-call version, break-even is at A + net premium collected.

**Loss characteristics:** By accepting a limit on profits, you also achieve a limit on losses. Losses, at expiration, increase as market rises to B, where they are at a maximum. With put-vs.-put version, maximum loss is net cost of spread.

**Decay characteristics:** If market is midway between A and B, little if any time decay effect. If market is closer to A, time decay is generally a benefit. If market is closer to B, time decay is generally detrimental to profitability.

3. **Butterfly Spread**

It involves three strike prices. One can create long as well as short butterfly spread.

3.1 **Long Butterfly**

**Strategy:** Precision

- Long call A, short 2 calls B, long call C
- Long put A, short 2 puts B, long put C

(Note: B – A generally is equal to C – B)

**Figure 2.3.1 Long Butterfly Spread**
When to use: One of the few positions which may be entered advantageously in a long-term option series. Enter when, with one month or more to go, cost of the spread is 10 percent or less of B – A (20 percent if a strike exists between A and B). This is a rule of thumb.

Profit characteristics: Maximum profit occurs if a market is at B at expiration. That profit would be B – A – net cost of spread. This profit develops, almost totally, in the last month.

Loss characteristics: Maximum loss, in either direction, is cost of spread. A very conservative trade, break-evens are at A + cost of spread and at C – cost of spread.

Decay characteristics: Decay negligible until final month, during which distinctive pattern of butterfly forms. Maximum profit growth is at B. If you are away from (A-C) range entering the last month, you may wish to liquidate position.

3.2 Short Butterfly

Strategy: Precision

- Short call A, long 2 calls B, short call C
- Short put A, long 2 puts B, short put C
  (Note: B – A generally is equal to C – B)

Figure 2.3.2 Short Butterfly Spread
**When to use:** When the market is either below A or above C and position is overpriced with a month or so left. Or when only a few weeks are left, market is near B, and you expect an imminent move in either direction.

**Profit characteristics:** Maximum profit equals the credit at which spread is established. Occurs when market at expiration, is below A or above C, thus making all options in-the-money or all options out-of-the-money.

**Loss characteristics:** Maximum loss occurs if market is at B at expiration. Amount of that loss is $B - A - \text{credit received when setting up position}$. Break-evens are at $A + \text{initial credit}$ and $C - \text{initial credit}$.

**Decay characteristics:** Decay negligible until final month, during which distinctive pattern of butterfly forms. Maximum loss acceleration is at B.

**4. Straddle**

It can also be created long as well as short where we buy and sell simultaneously call and put options with same expiration date.

**4.1 Long Straddle**

**Strategy:** Precision

- Long call A, long put A

**Figure 2.4.1. Long Straddle**

Source: www.optionsguide.com
When to use: If market is near A and you expect it to start moving but are not sure which way. Especially good position if market has been quiet then starts to zigzag sharply, signaling potential eruption.

Profit characteristics: Profit open-ended in either direction. At expiration, break-even is at A, +/- cost of spread. However, position is seldom held to expiration because of increasing time decay with passage of time.

Loss characteristics: Loss limited to the cost of spread. Maximum loss occurs if market is at A at expiration.

Decay characteristics: Time decay accelerates as options approach expiration. Position is generally liquidated well before expiration.

4.2 Short Straddle

It is reverse of Long Straddle

Strategy: Precision

- Short call A, short put A

Figure 2.4.2 Short Straddle

Source: www.optionsguide.com

When to use: If market is near A and you expect market is stagnating. Because you are short options, you reap profits as they decay — as long as market remains near A.
**Profit characteristics:** Profit maximized if market, at expiration, is at A. In call-put scenario (most common), maximum profit is equal to the credit from establishing position; break-even is A +/- total credit.

**Loss characteristics:** Loss potential open-ended in either direction. Position, therefore, must be closely monitored and readjusted to delta neutral if market begins to drift away from A.

** Decay characteristics:** Because you are only short options, you pick up time-value decay at an increasing rate as expiration approaches. Time decay is maximized if market is near A.

**5. Strangle**

It is same as straddle but using different expiration months.

**5.1 Long Strangle**

Strategy: Precision

- Long put A, long call B

Figure 2.5.1 Long Strangle

Source: www.optionsguide.com

**When to use:** If market is within or near (A-B) range and has been stagnant. If market explodes either way, you make money; if market continues to stagnate, you lose less than with a long straddle. Also useful if implied volatility is expected to increase.
Profit characteristics: Profit open-ended in either direction. Break-even levels are at A – cost of spread and B + cost of spread. However, spread is usually not held to expiration.

Loss characteristics: Loss limited. Loss is equal to net cost of position. Maximum loss occurs if, at expiration, market is between A and B.

Decay characteristics: Decay accelerates as options approach expiration but not as rapidly as with long straddle. To avoid largest part of decay, the position is normally liquidated prior to expiration.

5.2 Short Strangle

Strategy: Precision

- Short put A, short call B

When to use: If market is within or near (A-B) range and, though active, is quieting down. If market goes into stagnation, you make money; if it continues to be active, you have a bit less risk then with a short straddle.

Profit characteristics: Maximum profit equals option premium collected. Maximum profit realized if market, at expiration, is between A and B.
Loss characteristics: At expiration, losses occur only if market is above \( B + \) option premium collected (for put-call) or below \( A - \) that amount. Potential loss is open-ended. Although less risky than short straddle, position is risky.

Decay characteristics: Because you are short options, time value decays at an increasing rate as the option expiration date approaches; maximized if market is within \( (A-B) \) range.

2.5 CONCLUSION

Option strategies provide means of risk reduction, anyone who is at risk from a price change can use options to offset that risk. They are very versatile and act as a smart flexible tool. Different strategies are useful for different market perceptions of the price movements. Option trading strategies are used for both hedging and speculation. Different strategies are useful depending on the objective of analyst, different market perceptions and price movements. Option strategies are complex positions created including a combination of options and underlying shares which help the investor to benefit from his view. Options give a commensurate solution through a serious of innovative strategies in the form of a combination of options of different types which helps in managing investment risks. 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.
References


8. www.optionsguide.com