Derivative Based Investment Strategies

Research paper

Submitted for presentation

At

4th Annual Conference-Asian Pacific Association of Derivatives (APAD) June 20-22, 2007

To held at

Management Development Institute (MDI),
Gurgaon, India

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Brief Biography of the Author:

Dr. N. S. Malik, is, at present, working as Reader in the Department of Business Management, Gurujambheshwar University of Science & Technology, Hisar-125001 (Haryana). I received Ph. D on Equity Prices in India in 1997 and have contributed number of research papers in national and international research journals. I have completed two consultancy project funded by World Vision, USAID through City Alliance during my foreign teaching assignment in Rwanda sponsored by UNDP.

Presently, I am involved in providing online consultancy and training in the area of Investment Management, Financial Planning & Advisory and Trading/Investment Strategies in Derivative Products etc. through the website (www.centre4investmentstrategies.com) and conducts workshops on Trading/Investment Strategies.

Derivative Based Investment Strategies

Abstract

The present study is looking beyond the traditional approach to focus on the value emerging out of the exponential growth taking place due to arrangement of marriage between theory and practice in the use over the valuation of financial assets across the globe in general and the emerging markets in particular.

Derivative based investment strategies on equities have been empirically tested over varying period of time during bullish, bearish and stable market conditions. A Rolling Investment Strategy (RIS) on Nifty between 28th December 2000 and 9th March 2007 (75 months) have delivered a CAGR of 38.00 percent against the Nifty return of 19.4 percent.

Over a short period of 18 months (9th September 2005 to 29th March 2007) the same strategy on Nifty provided a CAGR of 81.1 percent against the Nifty's 28.5 percent where as long future covered with out of money call provided a CAGR of 63.6 percent. Straddle on Nifty gave CAGR of 14.7 percent where as Strangle on Nifty gave a CAGR of 30.6 percent over this period of 18 months.

Very short period of 15 days and 21 days news based derivative investment strategy on IDBI (News: IDBI-UWB merger) and HPCL (cease fire in Lebanon-Israel) respectively have also been empirically tested and found to be very remunerative amidst higher degree of risk.

Key words: Derivatives; Strategies; CAGR; Straddle; Strangle;

Derivative Based Investment Strategies

Rational investors wish to maximize the returns on their funds for a given level of risk. All the investment decisions possess varying degree of risks. Returns come in the form of income such as interest or dividends or through growth in capital values (i.e. capital gains) short terms as well as long term.

Any investment process must recognize the importance of risk. The best way to appreciate the concept of risk is to compare it to the idea of probability. What is the probability of making money? Or … losing money? If the probability is low, risk is high.

On the other hand, if the probability of making money is high, risk is low. Investors should invest more money when risk is low because the probability of making money is high. This is the time to be aggressive. On the other hand, when the risk is high, the odds of making money are low. When the odds of making money on a specific asset are low, sell the asset and become defensive.

An in-depth knowledge the risk associated to the investment chosen would be used to establish the winning strategies. Strategy improves the odds of winning. As the market environment changes, we continually evaluate how risk has changed and devise a new strategy.

Investing your money offers challenges, you may like it or not, we all participate in the investment game. The economy and financial markets is the table upon which the game is played. Investors continually change the risk/reward profile of each market based on various variables impacting the investment environment.

We need to adapt our investment strategy and change the size of our investment. Adapting the portfolio to the changing risk is the only tool under control to avoid serious losses. The major advantage in lowering the risk, thus lowering the volatility of your portfolio, is to make your returns more predictable.

Risk is an essential ingredient of every investment. The expected return is a function of risk involved. One can not avoid risks altogether but should learn to embrace and manage them to achieve the desired financial goals over a realistic time-frame.

When inflation rises, risk increases because the central banks shifts to a restrictive monetary policy and stocks decline. When inflation declines, the risk in the financial markets is low.
Bond prices start going up, followed by a rising stock market. By looking at economic indicators (like inflation), investors can assess the direction of risk and develop their investment strategy.

Many events dramatized by the press are irrelevant in developing an investment strategy. The so-called energy shortage is one example. When the price of crude oil spikes and rises sharply, the press dramatizes the event. At other times, the financial press talks about shortages in natural gas. The idea of shortages is very misleading. All commodity prices move in the same direction. This includes short-term interest rates. Short-term interest rates in effect are the price of the commodity money. If crude oil spikes, the odds favor a strong upward move in copper, aluminum, natural gas, and short-term interest rates.

Risk also depends on the knowledge of the investor. The successful investors recognize there is always room to learn in a field of failures. Financial markets require a specialized, in depth, diversified, flexible knowledge, and attitude. Lack of investment knowledge is highly correlated with big losses. Smart investors satisfy themselves with modest returns and protections against loss. They know that if they lose money they must work harder to regain the losses. The professional investor gears their portfolio to that outcome. The individual investor doesn't recognize this possibility.

Formula for investing, indexing, averaging down, buy and hold, diversifications are all easy to understand, but they are not necessarily profitable. Beware of anything that sounds simple.
<u>Some examples of failure due to market risk:</u>

1. Collapse of Baring Bank in U.K;
2. Collapse of domestic financial institutions due to unhedged long dated higher interest rate obligations initiated during 1995-98;
3. Bifurcation of UTI in 2003;
4. South –East Asian Crises;
5. IMD (India Millennium Deposit): October 2000-Oct 2005;
6. Yen (Japanese) carry trade;

7. Mukesh Ambani-Anil Ambani (together) grew from $2.9 billion to $38.11billion i.e. 13 times in 5 years (2002-2007), where Bill gate grew by 10 percent and Warren Buffet grew by 50 percent during this time.
8. Theory of equilibrium or managing in-equilibrium

These are a few instances to mention, which tells their own tail story surrounded by one or the other types of risk to which they knowingly or unknowingly exposed to.
Hence the research has found an immediate need to look out for using derivatives investment strategies to manage the potential market risk.

Investment Strategy: A strategy is a unified, comprehensive and integrated plan of action to ensure that the basic objective of the investment that revolves around return on the corresponding risk involved over varying period of time.

The following are the derivative based investment strategies to enhance rate of return on the investment and hedge against the risk during bullish, bearish and stable market conditions.
1. Rolling Investment Strategies (RIS): This is a pure investment strategy on a fundamentally strong script through derivatives for a long period of time by rolling over from one expiry to another. This strategy is backed by a slogan "Let's Grow with the Growing Economy"
2. Butterfly Investment Strategy (BIS): It is aimed to capitalize on the investment opportunities arising from particular development or information and the ability and knowledge of the investor to digest that information. This strategy is basically a technical call on to capitalize on a development over a short time horizon. The strategy is based on the slogan "Feeling the Heat before Sunrise".
3. Trading Investment Strategy (TIS): This strategy is aimed to capitalize on the strength emerging on the basis of some material news/development and the technical analysis in the case of a particular asset. These strategies are for a short time duration of 3-4 weeks and are based on the slogan "Let's Board the Train, which has just Started Moving"

Stock Derivatives in India:
The trading in index futures began on 12th June 2000 where as index options were introduced on 4th June 2001in India. The options and futures on individual securities began in July and November 2001 respectively.

At the moment future contracts are available 159 individual securities. More three fourth of the total turn over is from the futures and options segment and close to 40 percent within this segment is contributed by the S&P CNX Nifty indices.

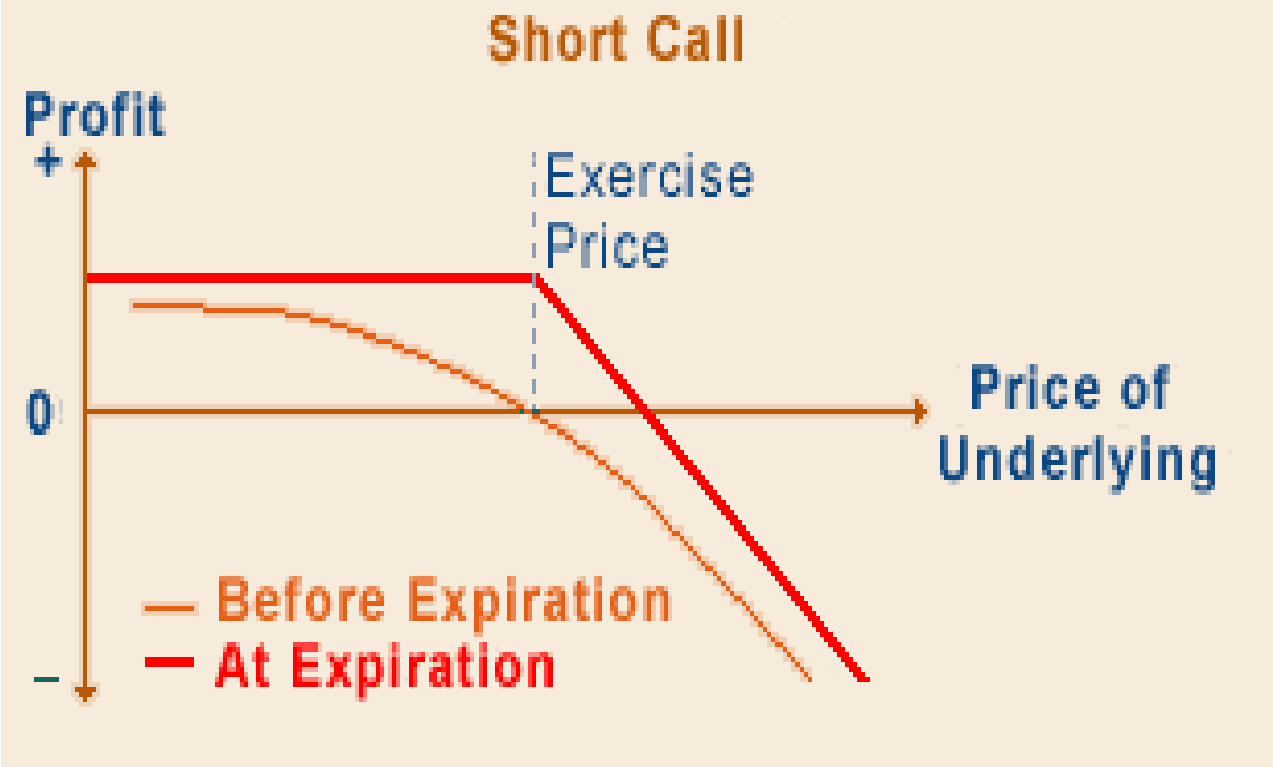
Recently the NSE (National Stock Exchange of India) has been awarded "Derivatives Exchange of the Year" by Asia Risk Magazine, only publication in Asia-Pacific Region since 1995.

Conceptual Framework of Derivatives Strategies

The concept regarding the various derivative based investment strategies to enhance rate of return and to hedge against the risk during bullish, bearish and stable market conditions has been discussed below.

Bull Market Strategies

Calls in a Bullish Strategy: An investor with a bullish market outlook should buy call options. If you expect the market price of the underlying asset to rise, then you would rather have the right to purchase at a specified price and sell later at a higher price than have the obligation to deliver later at a higher price.



The investor's profit potential buying a call option is unlimited. The investor's profit is the market price less the exercise price less the premium. The greater the increase in price of the underlying, the greater the investor's profit.

The investor's potential loss is limited. Even if the market takes a drastic decline in price levels, the holder of a call is under no obligation to exercise the option. He may let the option expire worthless.

The investor breaks even when the market price equals the exercise price plus the premium.

An increase in volatility will increase the value of your call and increase your return. Because of the increased likelihood that the option will become in- the-money, an increase in the underlying volatility (before expiration), will increase the value of a long options position. As an option holder, your return will also increase.

Puts in a Bullish Strategy: An investor with a bullish market outlook can also go short on a Put option. Basically, an investor anticipating a bull market could write Put options. If the market price increases and puts become out-of-the-money, investors with long put positions will let their options expire worthless.

By writing Puts, profit potential is limited. A Put writer profits when the price of the underlying asset increases and the option expires worthless. The maximum profit is limited to the premium received.

However, the potential loss is unlimited. Because a short put position holder has an obligation to purchase if exercised. He will be exposed to potentially large losses if the market moves against his position and declines.

The break-even point occurs when the market price equals the exercise price: minus the premium. At any price less than the exercise price minus the premium, the investor loses money on the transaction. At higher prices, his option is profitable.

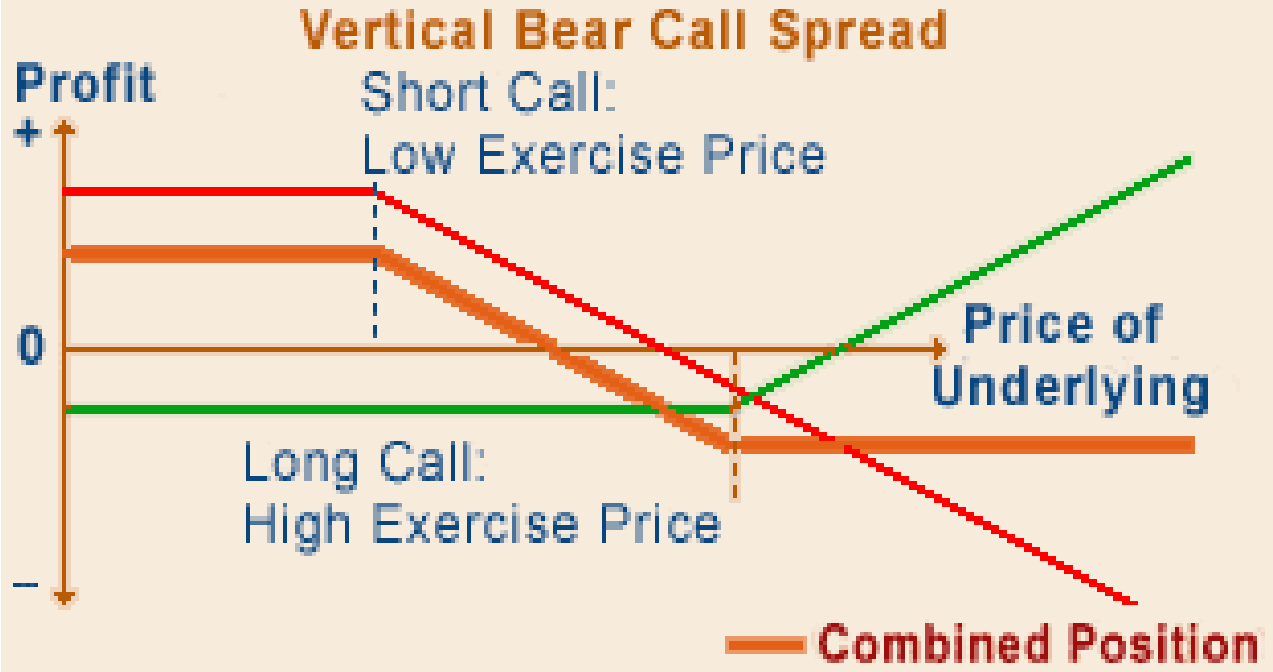
An increase in volatility will increase the value of your put and decrease your return. As an option writer, the higher price you will be forced to pay in order to buy back the option at a later date, lower is the return.

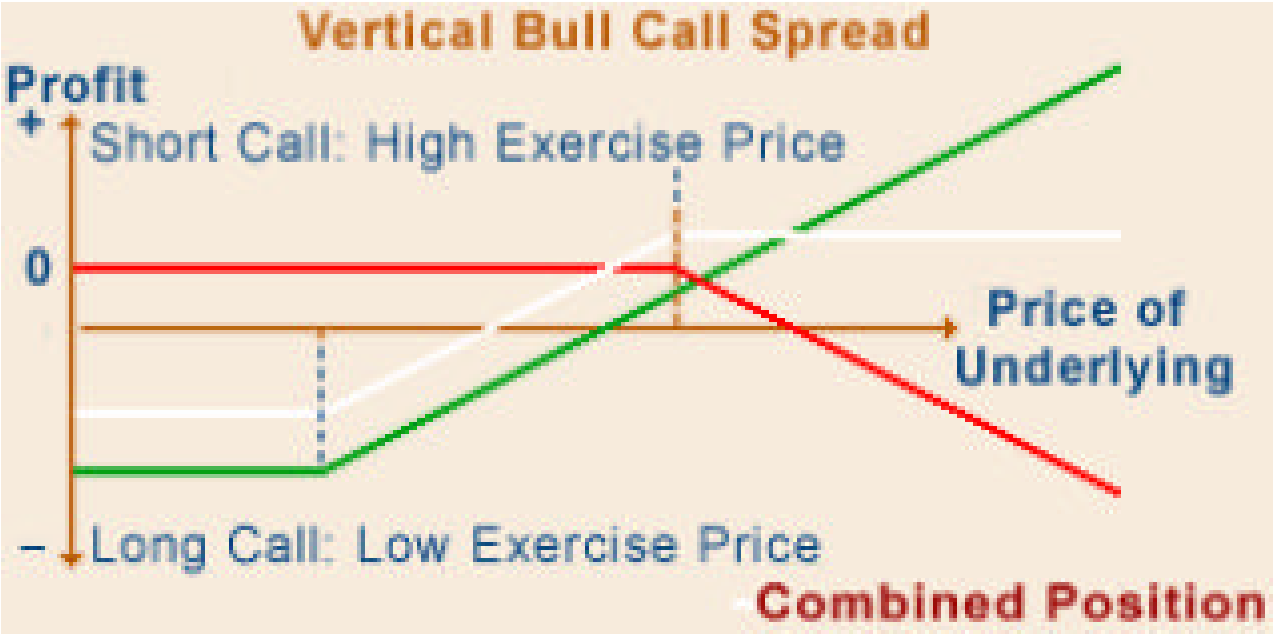
Bullish Call Spread Strategies: A vertical call spread is the simultaneous purchase and sale of identical call options but with different exercise prices.

To "buy a call spread" is to purchase a call with a lower exercise price and to write a call with a higher exercise price. The trader pays a net premium for the position.

To "sell a call spread" is the opposite, here the trader buys a call with a higher exercise price and writes a call with a lower exercise price, receiving a net premium for the position.

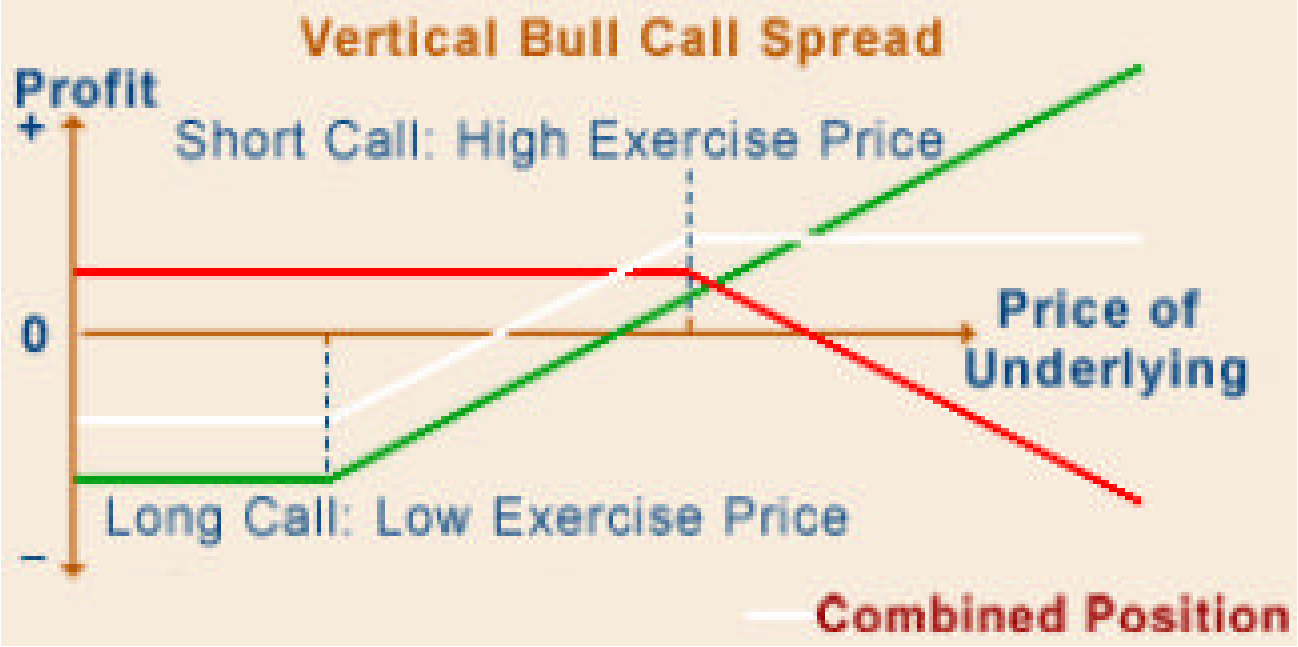
An investor with a bullish market outlook should buy a call spread. The "Bull Call Spread" allows the investor to participate to a limited extent in a bull market, while at the same time limiting risk exposure.





To put on a bull spread, the trader needs to buy the lower strike call and sell the higher strike call. The combination of these two options will result in a bought spread. The cost of Putting on this position will be the difference between the premium paid for the low strike call and the premium received for the high strike call.

The investor's profit potential is limited. When both calls are in-the-money, both will be exercised and the maximum profit will be realized. The investor delivers on his short call and receives a higher price than he is paid for receiving delivery on his long call.



The investor's potential loss is limited. At the most, the investor can lose is the net premium. He pays a higher premium for the lower exercise price call than he receives for writing the higher exercise price call.

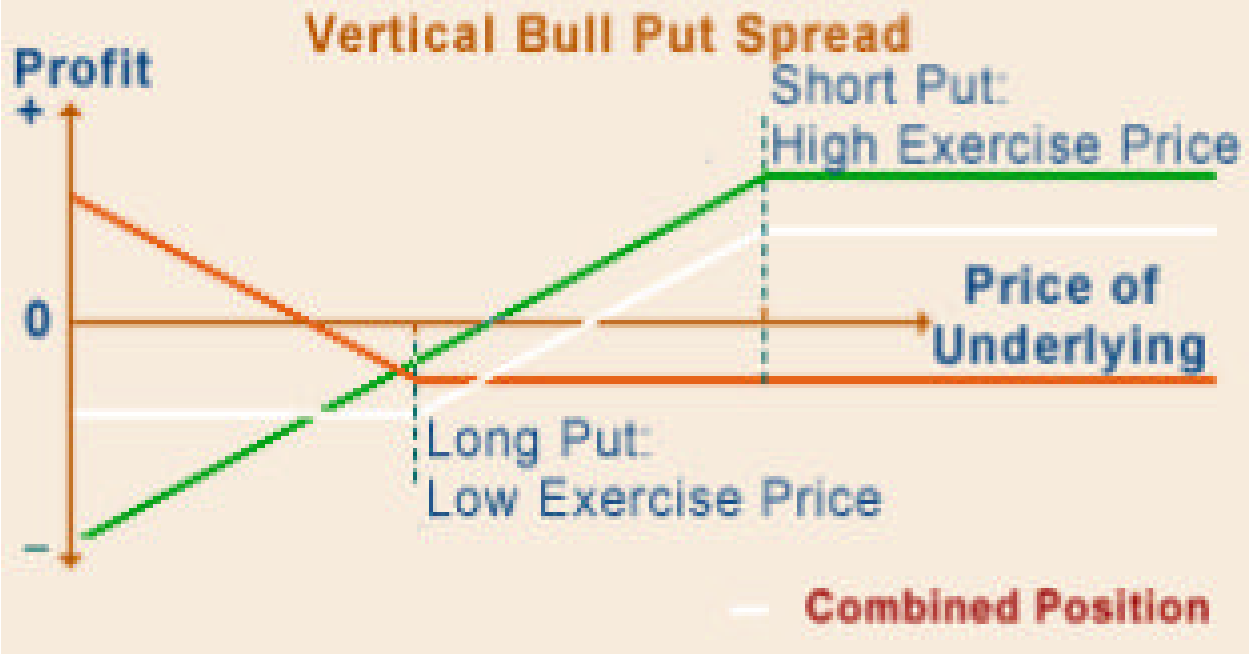
The investor breaks even when the market price equals the lower exercise price plus the net premium. At the most, an investor can lose is the net premium paid. To recover the premium, the market price must be as great as the lower exercise price plus the net premium.

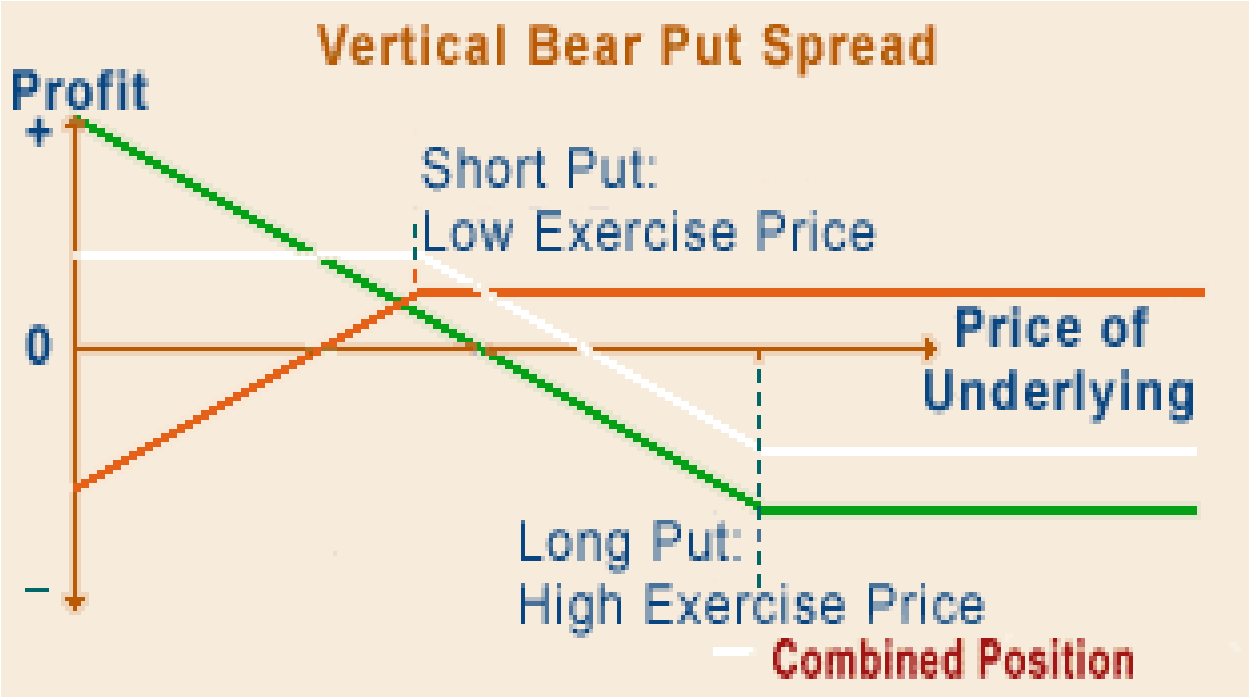
Bullish Put Spread Strategies: A vertical Put spread is the simultaneous purchase and sale of identical Put options but with different exercise prices.

To "buy a put spread" is to purchase a Put with a higher exercise price and to write a Put with a lower exercise price. The trader pays a net premium for the position.

To "sell a put spread" is the opposite: the trader buys a Put with a lower exercise price and writes a put with a higher exercise price, receiving a net premium for the position.

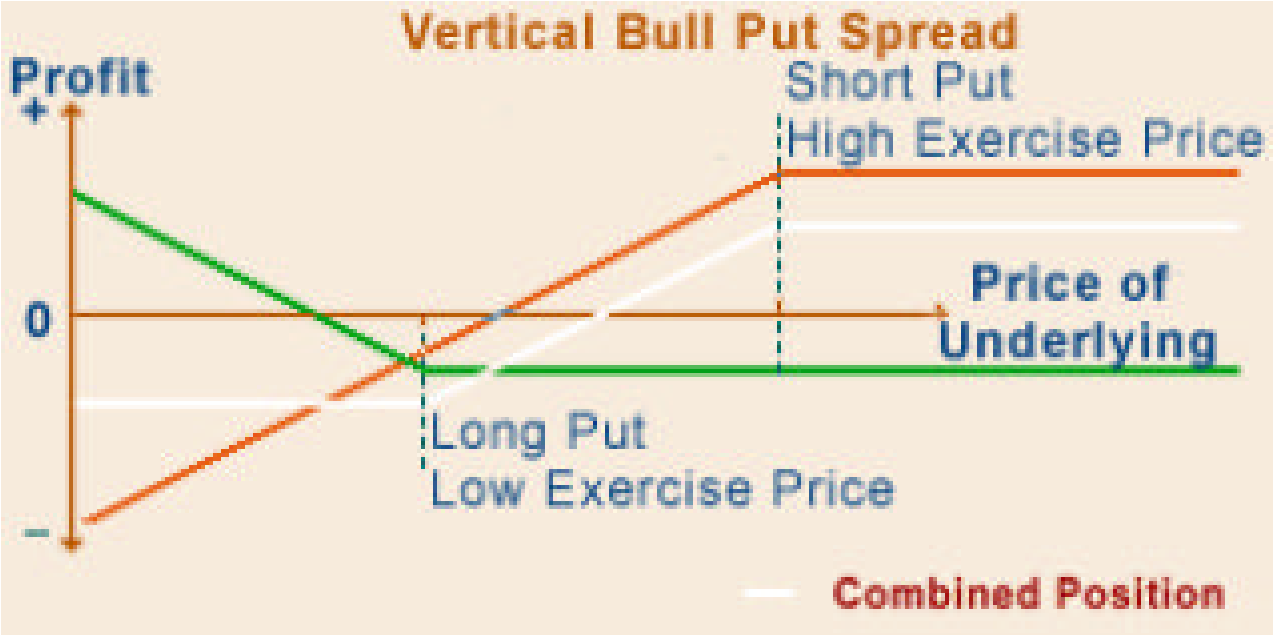
An investor with a bullish market outlook should sell a Put spread. The "vertical bull put spread" allows the investor to participate to a limited extent in a bull market, while at the same time limiting risk exposure.





To put on a bull spread, a trader sells the higher strike put and buys the lower strike put. The bull spread can be created by buying the lower strike and selling the higher strike of either calls or put. The difference between the premiums paid and received makes up one leg of the spread.

The investor's profit potential is limited. When the market price reaches or exceeds the higher exercise price, both options will be out-of-the-money and will expire worthless. The trader will realize his maximum profit, the net premium



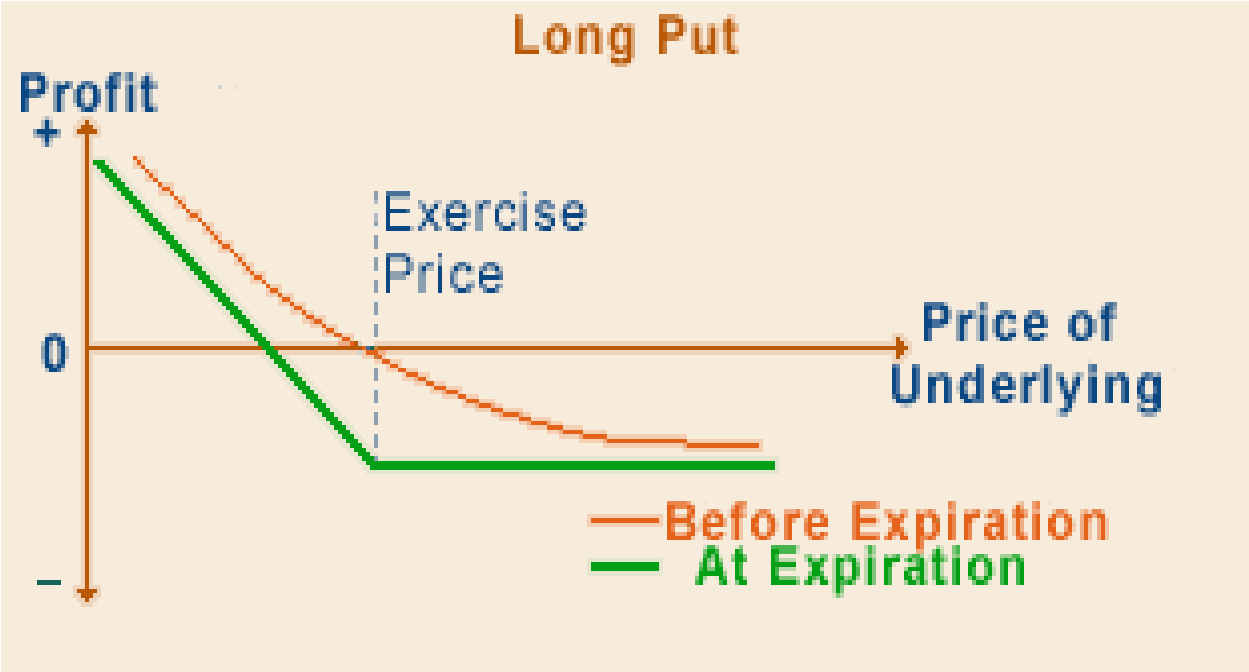
The investor's potential loss is also limited. If the market falls, the options will be in-the-money. The puts will offset one another, but at different exercise prices.

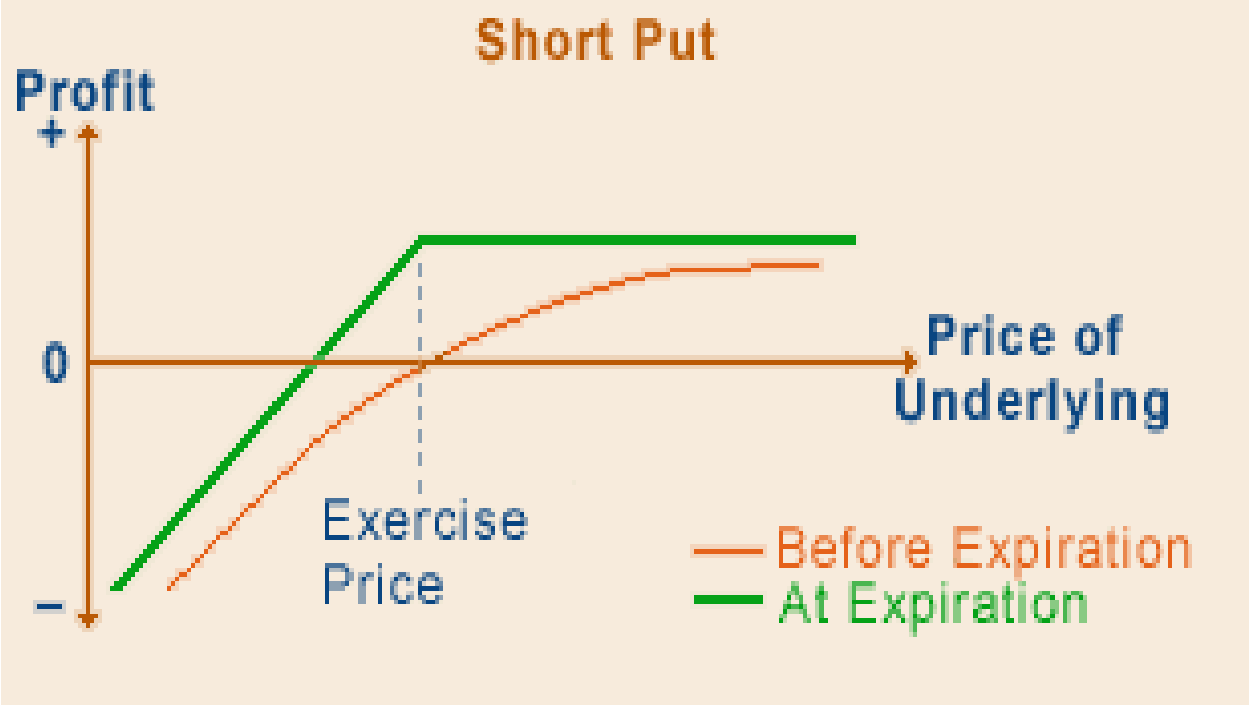
The investor breaks-even when the market price equals the lower exercise price less the net premium. The investor achieves maximum profit i.e the premium received; when the market price moves up beyond the higher exercise price (both puts are then worthless).

Bear Market Strategies

Puts in a Bearish Strategy: When you purchase a put you are long and want the market to fall. A put option is a bearish position. It will increase in value if the market falls. An investor with a bearish market outlook shall buy put options. By purchasing put options, the trader has the right to

choose whether to sell the underlying asset at the exercise price. In a falling market, this choice is preferable to being obligated to buy the underlying at a price higher.





An investor's profit potential is practically unlimited. The higher the fall in price of the underlying asset, higher the profits.

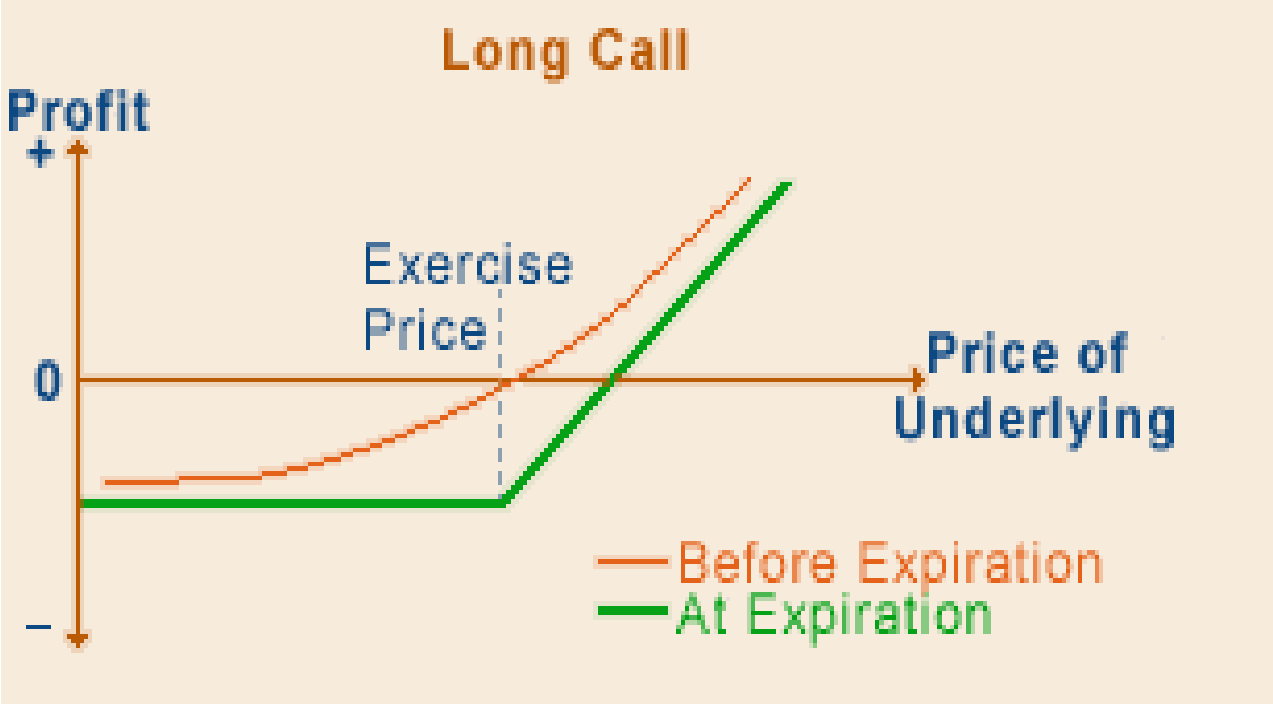
The investor's potential loss is limited. If the price of the underlying asset rises instead of falling as the investor has anticipated, he may let the option expire worthless. At the most, he may lose the premium for the option.

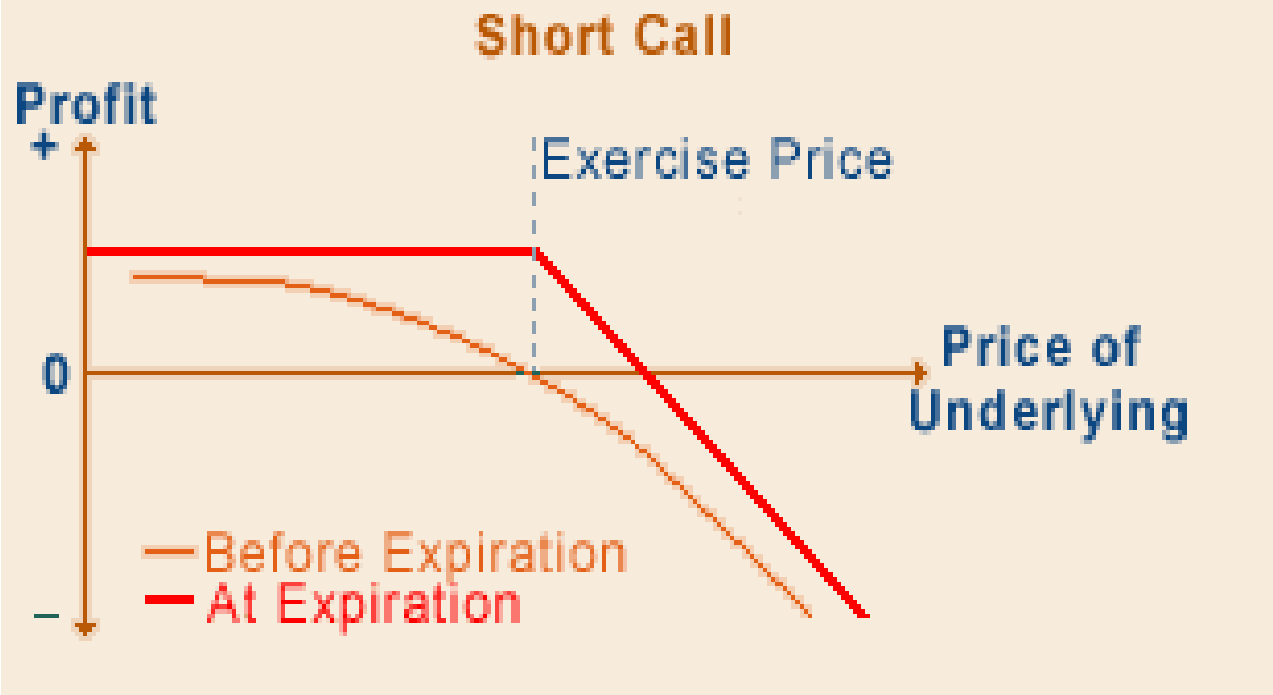
The trader's breakeven point is the exercise price minus the premium. To profit, the market price must be below the exercise price. Since the trader has paid a premium he must recover the premium he paid for the option.

An increase in volatility will increase the value of your put and increase your return. An increase in volatility will make it more likely that the price of the underlying instrument will move. This increases the value of the option.

Calls in a Bearish Strategy: Another option for a bearish investor is to go short on a call with the intent to purchase it back in the future. By selling a call, you have a net short position and needs to be bought back before expiration and cancel out your position.

For this an investor needs to write a call option. If the market price falls, long call holders will let their out-of-the-money options expire worthless, because they could purchase the underlying asset at the lower market price.





The investor's profit potential is limited because the trader's maximum profit is limited to the premium received for writing the option.

Here the loss potential is unlimited because a short call position holder has an obligation to sell if exercised; he will be exposed to potentially large losses if the market rises against his position.

The investor breaks even when the market price equals the exercise price: plus the premium. At any price greater than the exercise price plus the premium, the trader is losing money. When the market price equals the exercise price plus the premium, the trader breaks even.

An increase in volatility will increase the value of your call and decrease your return. When the option writer has to buy back the option in order to cancel out his position, he will be forced to pay a higher price due to the increased value of the calls.

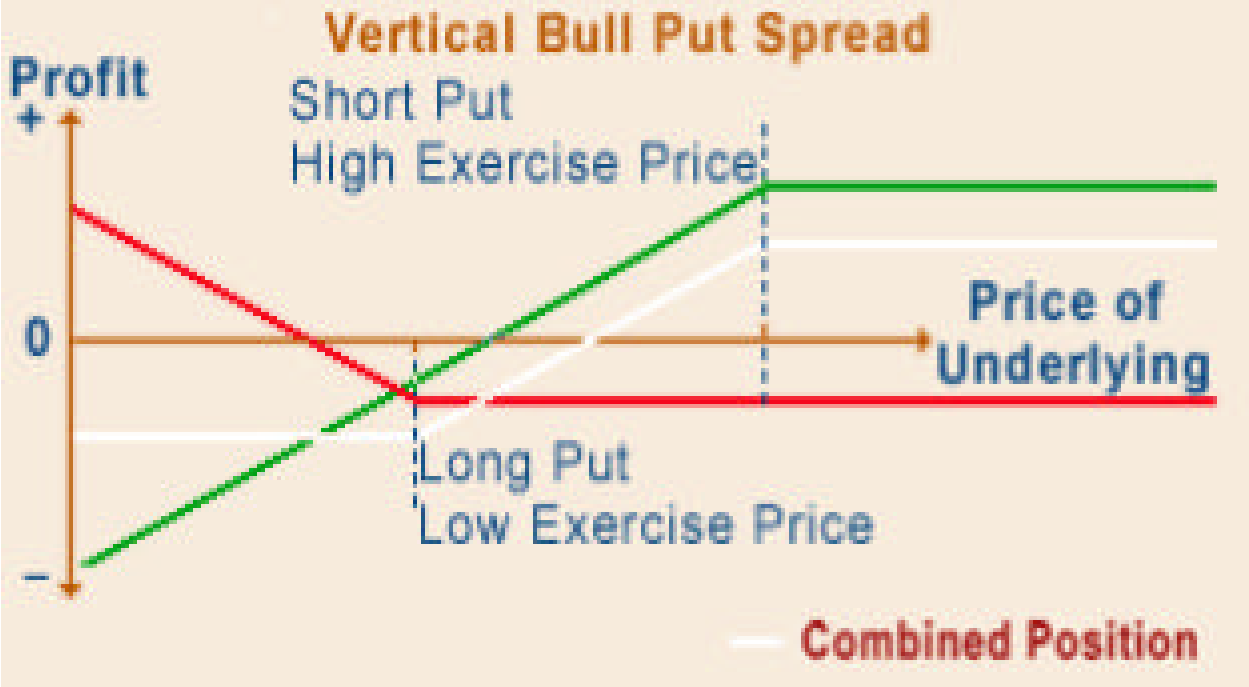
Bearish Put Spread Strategies: A vertical put spread is the simultaneous purchase and sale of identical put options but with different exercise prices.

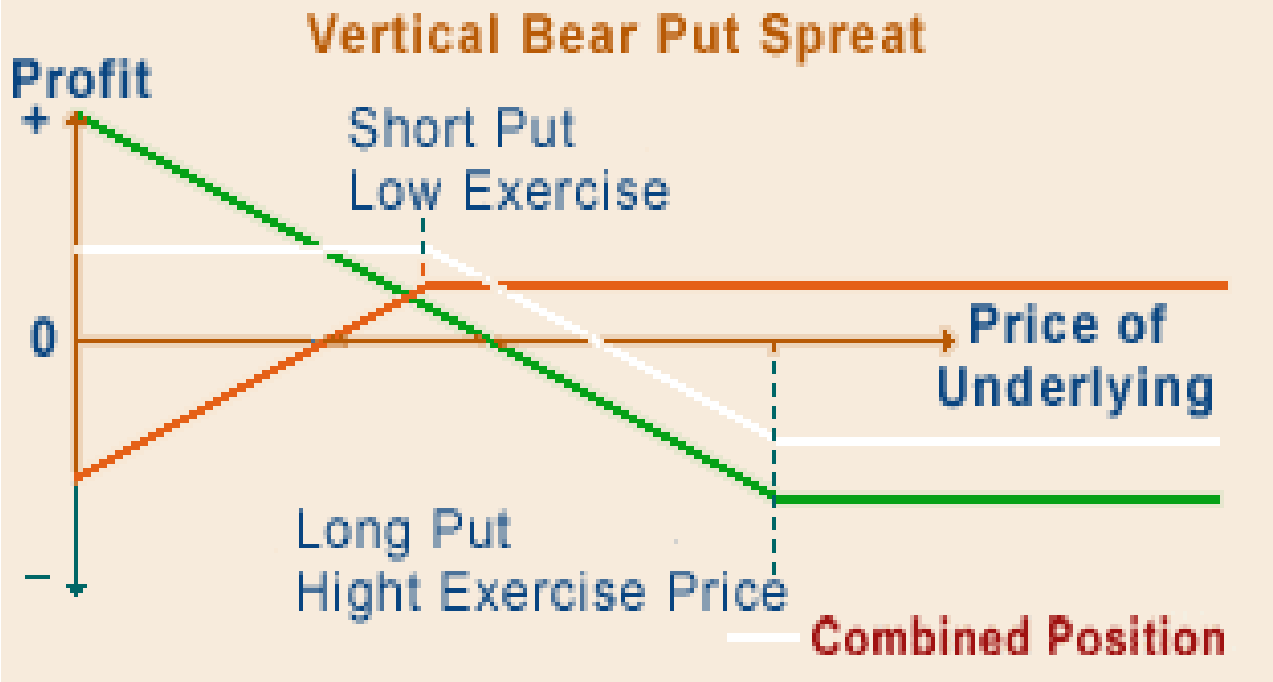
To "buy a put spread" is to purchase a put with a higher exercise price and to write a put with a lower exercise price. The trader pays a net premium for the position.

To "sell a put spread" is the opposite. The trader buys a put with a lower exercise price and writes a put with a higher exercise price, receiving a net premium for the position.

To put on a bear put spread you buy the higher strike put and sell the lower strike put. You sell the lower strike and buy the higher strike of either calls or puts to set up a bear spread.

An investor with a bearish market outlook should: buy a put spread. The "Bear Put Spread" allows the investor to participate to a limited extent in a bear market, while at the same time limiting risk exposure.





The investor's profit potential is limited. When the market price falls to or below the lower exercise price, both options will be in-the-money and the trader will realize his maximum profit when he recovers the net premium paid for the options.

The investor's potential loss is limited. The trader has offsetting positions at different exercise prices. If the market rises rather than falls, the options will be out-of-the-money and expire worthless. Since the trader has paid a net premium

The investor breaks even when the market price equals the higher exercise price less the net premium. For the strategy to be profitable, the market price must fall. When the market price falls to the high exercise price less the net premium, the trader breaks even and when the market falls beyond this point, the trader gains.

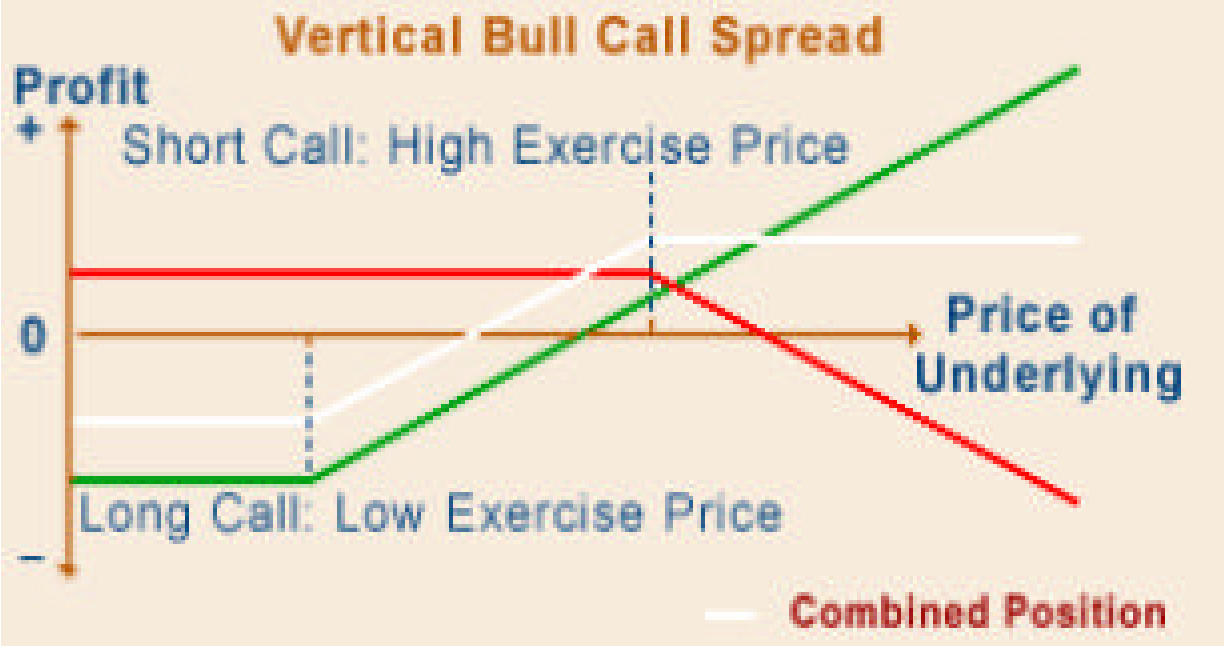
Bearish Call Spread Strategies: A vertical call spread is the simultaneous purchase and sale of identical call options but with different exercise prices.

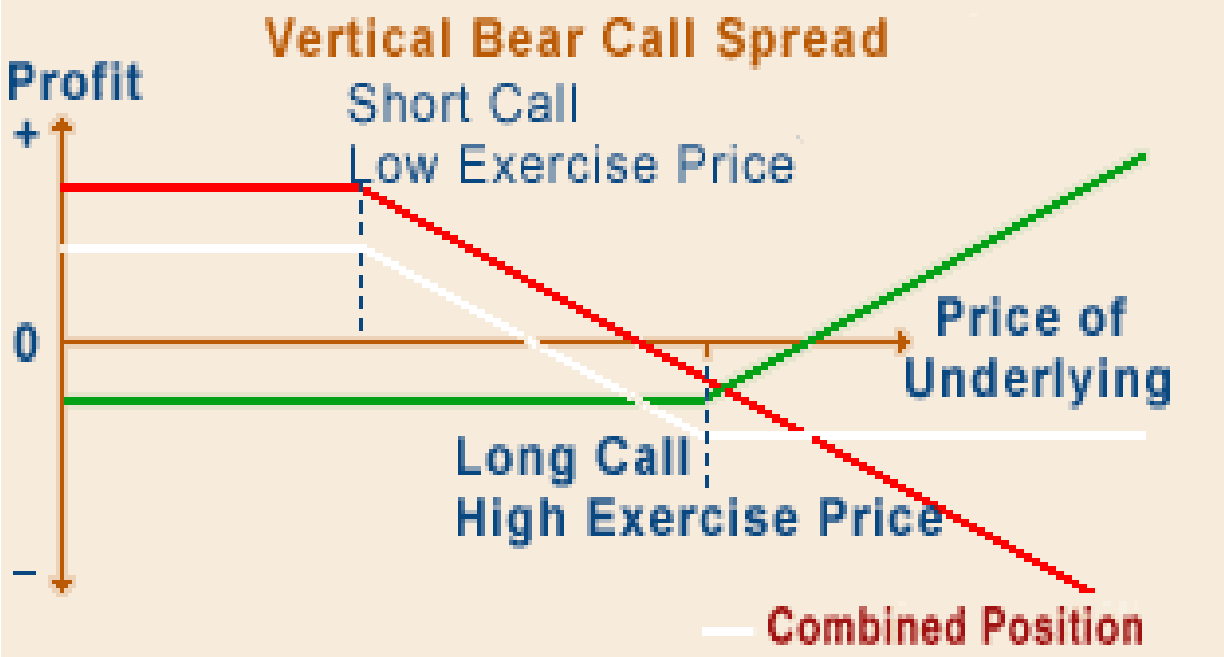
To "buy a call spread" is to purchase a call with a lower exercise price and to write a call with a higher exercise price. The trader pays a net premium for the position.

To "sell a call spread" is the opposite: the trader buys a call with a higher exercise price and writes a call with a lower exercise price, receiving a net premium for the position.

To put on a bear call spread you sell the lower strike call and buy the higher strike call. An investor sells the lower strike and buys the higher strike of either calls or puts to put on a bear spread.

An investor with a bearish market outlook should: sell a call spread. The "Bear Call Spread" allows the investor to participate to a limited extent in a bear market, while at the same time limiting risk exposure.

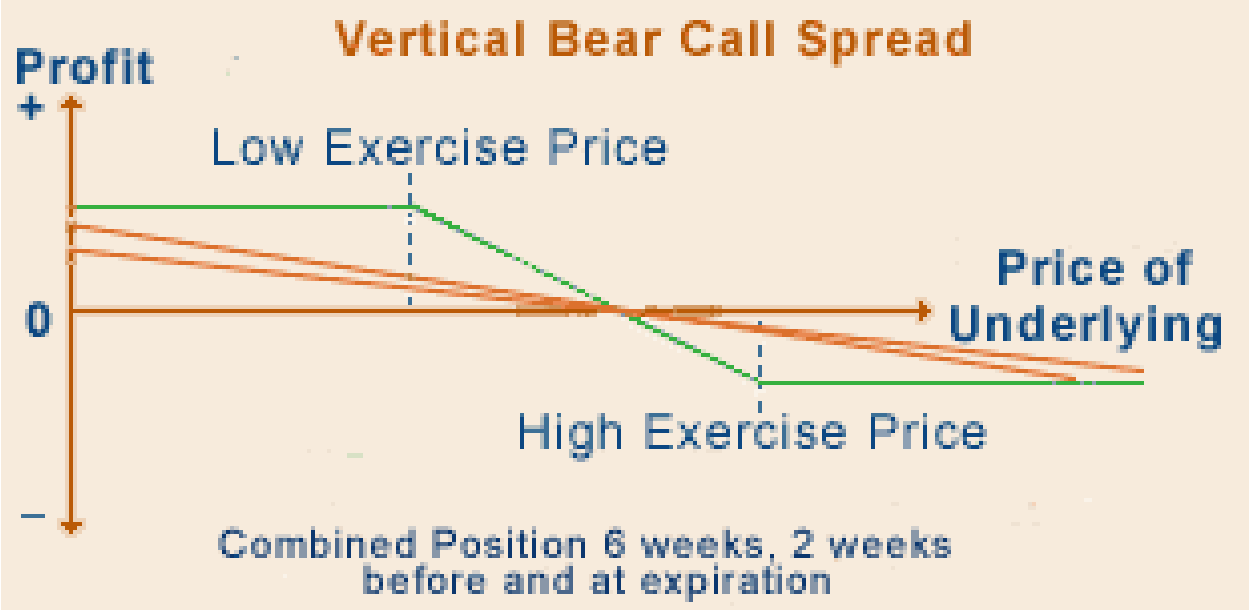




The investor's profit potential is limited. When the market price falls to the lower exercise price, both out-of-the-money options will expire worthless. The maximum profit that the trader can realize is the net premium: The premium he receives for the call at the higher exercise price.

Here the investor's potential loss is limited. If the market rises, the options will offset one another. At any price greater than the high exercise price, the maximum loss will equal high exercise price minus low exercise price minus net premium.

The investor breaks even when the market price equals the lower exercise price plus the net premium. The strategy becomes profitable as the market price declines. Since the trader is receiving a net premium, the market price does not have to fall as low as the lower exercise price to breakeven.

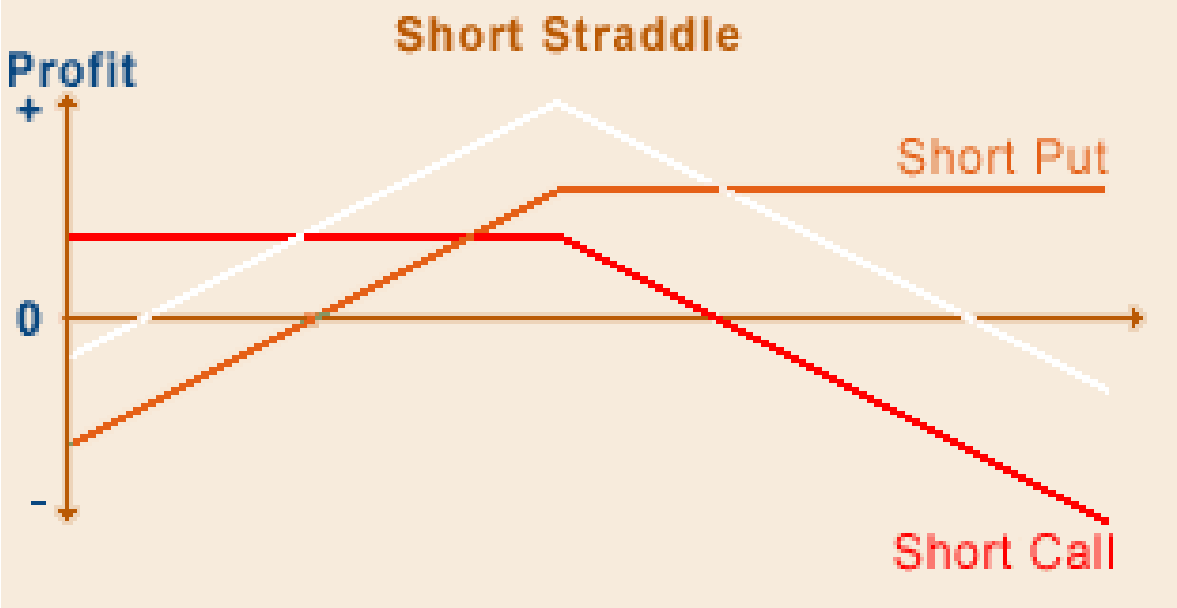


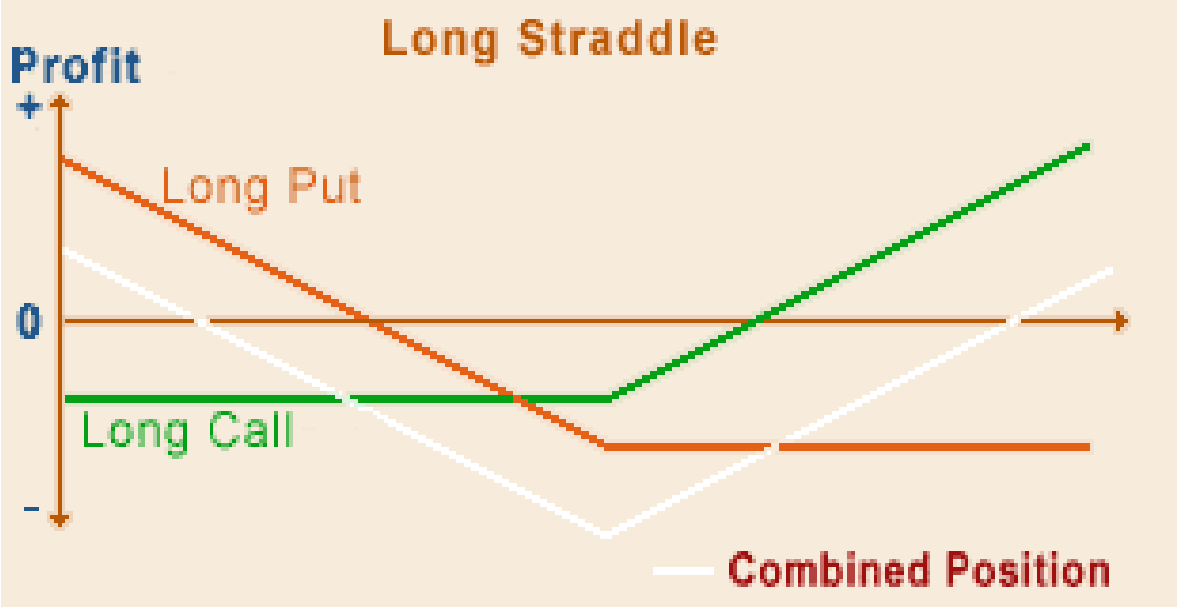
Stable Market Strategies

Straddles in a Stable Market Outlook: Volatile market trading strategies are appropriate when the trader believes the market will move but does not have an opinion on the direction of movement of the market. As long as there is significant movement upwards or downwards, these strategies offer profit opportunities. A trader need not be bullish or bearish. He must simply be of the opinion that the market is volatile. This market outlook is also referred to as "neutral volatility."

- A straddle is the simultaneous purchase (or sale) of two identical options, one a call and the other a put.
- To "buy a straddle" is to purchase a call and a put with the same exercise price and expiration date.
- To "sell a straddle" is the opposite: the trader sells a call and a put with the same exercise price and expiration date.

A trader, viewing a market as stable, should: write option straddles. A "straddle sale" allows the trader to profit from writing calls and puts in a stable market environment.





The investor's profit potential is limited. If the market remains stable, traders long out-of-the-money calls or puts will let their options expire worthless. Writers of these options will not have be called to deliver and will profit from the sum of the premiums received.

The investor's potential loss is unlimited. Should the price of the underlying rise or fall, the writer of a call or put would have to deliver, exposing himself to unlimited loss if he has to deliver on the call and practically unlimited loss if on the put.

The breakeven points occur when the market price at expiration equals the exercise price plus the premium and minus the premium. The trader is short two positions and thus, two breakeven points; One for the call (common exercise price plus the premiums paid), and one for the put (common exercise price minus the premiums paid).

Strangles in a Stable Market Outlook: A strangle is similar to a straddle, except that the call and the put have different exercise prices. Usually, both the call and the put are out-of-the-money.

The breakeven points occur when market price at expiration equals...the high exercise price plus the premium and the low exercise price minus the premium. The trader is short two positions and thus, two breakeven points. One for the call (high exercise price plus the premiums paid), and one for the put (low exercise price minus the premiums paid).

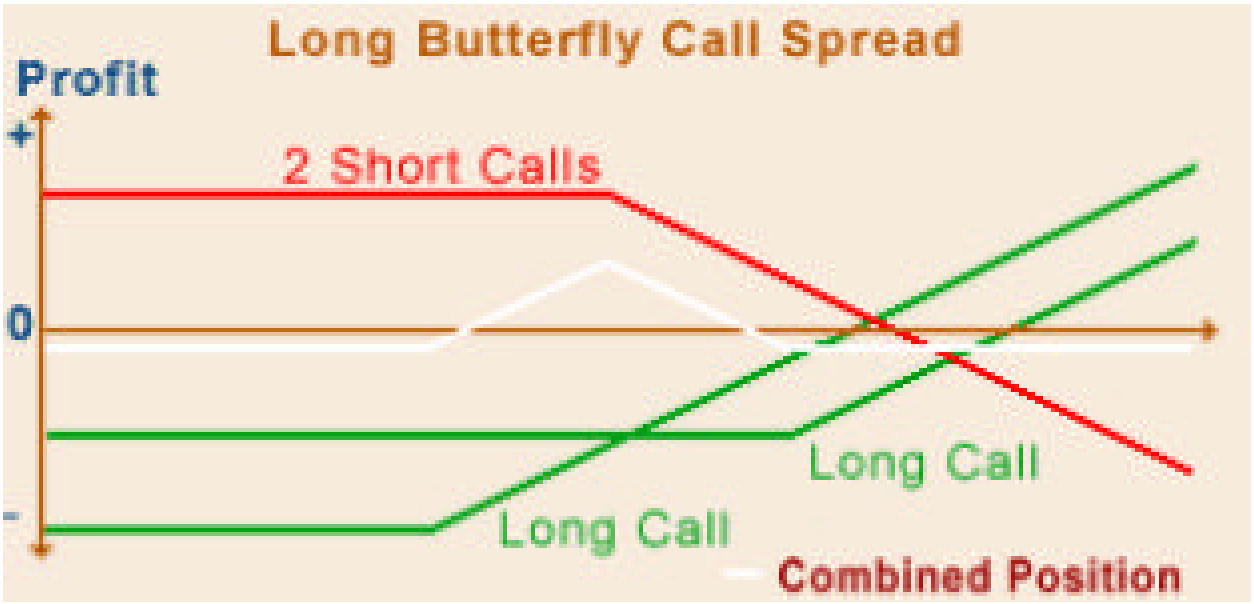
Why would a trader choose to sell a strangle rather than a straddle?

The risk is lower with a strangle. Although the seller gives up a substantial amount of potential profit by selling a strangle rather than a straddle, he also holds less risk. Notice that the strangle requires more of a price move in both directions before it begins to lose money.

Long Butterfly Call Spread Strategy: The long butterfly call spread is a combination of a bull spread and a bear spread, utilizing calls and three different exercise prices.

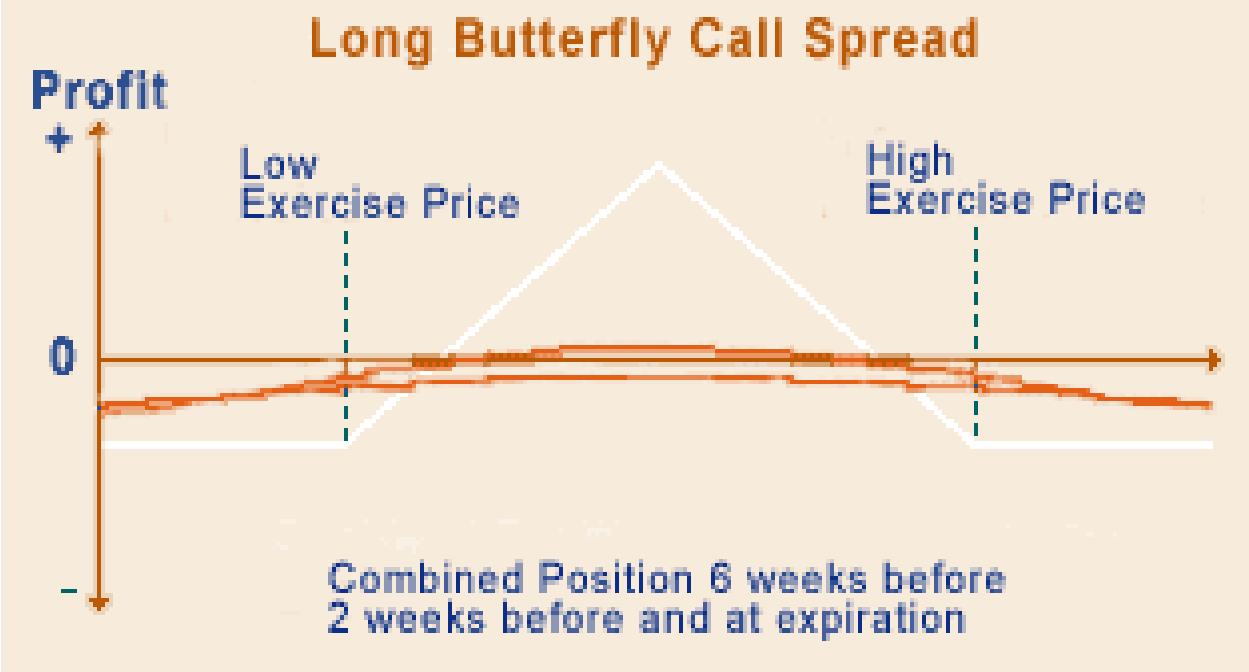
A long butterfly call spread involves:

- Buying a call with a low exercise price,
- Writing two calls with a mid-range exercise price,
- Buying a call with a high exercise price.



The maximum loss is limited to the net premium paid and is realized when the market price of the underlying asset is higher than the high exercise price or lower than the low exercise price.

The breakeven points occur when the market price at expiration equals ... the high exercise price minus the premium and the low exercise price plus the premium. The strategy is profitable when the market price is between the low exercise price plus the net premium and the high exercise price minus the net premium.



Empirical Evidences on the Derivatives based Investment Strategies

Objectives:

The study based on the case studies of various stocks including the index has been aimed:

- to empirically examine whether the use of derivatives enhances the rate of return and reduces the risk;
- to test on the various hypothesis that various derivative based investment strategies holds during bullish, bearish and stable market conditions;
- to empirically assess and examine whether the use of derivatives is good hedge against the market risk reflected through price movement during various market conditions of bullishness, bearishness and stableness.

Research Methodology:

Although there are numerous approaches to assess the out come of any investment decision but it is the rate of return that matters at the end of the day. Hence the compounded annual growth rate (CAGR) has been considered for all the derivatives based investment strategies on various scripts including the S&P CNX Nifty over varying periods of time used in the present study. The scripts, time periods and the number of observations used are as follows:

1) Nifty Futures & Options: 75 months i.e. 28th December 2000 to 29th March 2007, comprising of 150 observations on Nifty Futures;
2) Nifty Futures & Options: 18 months i.e. 29th September 2005 to 9th March 2007. In total 144 observations (36 on futures & 108 on options) have been used;
3) ITC Futures & Options: 18 months i.e. 29th September 2005 to 9th March 2007, and 108 observations in total have been used;
4) HPCL Futures: 21 days i.e. 11th August 2006 to 31st August 2006 and 19 observations were used;
5) IDBI Futures & Options: 15 days i.e. 13th September 2006 to 28th September 2006 and observations used were more than 45 on daily prices;

Hence in total 466 observations on futures and options have been used in the course of this study to assess and examine the impact of use of derivatives for enhancing return while keeping the risk checked amounting to hedging of risk.

In case of strategies involving options the out money call options and in the money put options have been used to factor in the normal growth in the market as well as the volatility factor of the Indian market. The standard deviation on the basis of monthly returns for last nine calendar years ending 31st December 2006 has been 7.36 percent. The normal historical growth in BSE Sensex has been 21 percent (including two percent for dividend). Hence taking into the normal rate of return and the volatility in the India indices, the researcher has chosen out-of - money calls with strike price higher by 1-2 percent as well as with strike price higher by 2-3 percent of the spot price and in- the- money put with strike price higher by 1-2 percent of the spot price.

Results:

Case Study on S&P CNX Nifty:

1. Long Nifty Future: Long position in Nifty future was initiated on 28th December 2000 and rolled over every month till 29th March 2007 for 75 months. It has delivered a CAGR of 38 percent as compared to the 19.4 percent by the Nifty indices over this period of time. Hence it may be inferred that leveraging compensate duly for excess amount of risk the investor is exposed to since Indian Capital Market have a high degree of volatility as compared to other markets in the world.

2. Long Nifty Future: Long position in Nifty future was initiated on 29th September 2005 and rolled over on month on month basis till 29th March 2007 for 18 months. This strategy delivered a CAGR of 81.1 percent vis-à-vis 28.5 percent by the Nifty Indices.

The comparative investigation of the two similar strategies on the same class of asset but over different time horizon indicates that higher risk amounts in higher profit/loss. In this case the 46.91percent {(28.5-19.4)/19.4} higher risk taken has been compensated by 113.42 percent {(81.1-38.0)/38.0} higher rate of return.

Case Study on ITC: The similar strategy on ITC has been able to provide CAGR of 9.62 percent vis-à-vis 4.08 percent in case of spot price of ITC.

3. Covered Call on Nifty: Long on Nifty Future covered by Short Nifty Call (out of money call with a strike price higher by 2-3 percent of the spot price).

This strategy has been able to give a CAGR of 63.6 percent vis-à-vis 28.5 percent of the Nifty indices. It is worth to mention that the risk involved in this strategy is significantly lower than the above strategy involving only long position in Nifty future.

Case Study on ITC: the similar strategy on ITC ended with a CAGR of 53.40 percent;

4. Straddle on Nifty: Short Call and Short Put (1-2 percent higher strike price than spot price):

This strategy has been proved to be under performer over the last 18 months ending 29th March 2007, as it delivered a CAGR of only 14.7 percent.

Case Study on ITC: The Straddle on ITC with close to money call and put has resulted in CAGR of 99.03 percent vis-à-vis a CAGR of only 4.08 percent in case of the spot price of ITC during these 18 months. This fact supports the hypothesis that straddle pay a rich dividend in case of stable market conditions.

5. Strangle on Nifty: Short call (2-3 percent higher strike price than spot price) and Short put (1-2 percent higher strike price than spot price):

The strangle has proved to be relatively better than the straddle over the last 18 months ending 29th March 2007, as it has provided a CAGR of 30.6 percent which is well above the return of the Nifty.

It is of outmost importance that the straddle and strangle involves very low to moderate degree of risk compared to the risk involved with the investment in the market represented by the Nifty Indices.

Case Study on HPCL:

Theme of the case study: Cracking of News (HPCL): Cease-fire in the Lebanon-Israel war.

Name of Investment Strategy: Butterfly Investment Strategy (BIS)

Time period of study: 11th August 2006 to 31st August 2006 (21-days).

Returns: HPCL=433.24%p.a. Vs. 78.78% for BSE Sensex

Case Study on IDBI:

Theme of the case study: Major development/ Cracking of News (RBI permitted UWB merger with IDBI on 13/09/2006)

The Centre 4 Investment Strategies (C4IS) sensing the same, in advance prepared various investment strategies for its subscribers. On 17/09/2006, the C4IS on its website wrote that IDBI would be heading towards its first target of 76-78, and if the resistance of 78 is broken with convincing volumes than it would touch 90 by September end.

Name of Investment Strategy: BIS and TIS

Time period of study: 13th September to 28th September 2006 (15-days).

Performance:

The C4IS proposed 5 investment strategies for various types of its customers. These investment strategies performed as follows:

Investment Strategy-1: Plain Vanilla: Taking long position in cash market (delivery base) in IDBI:

Returns (15-days): IDBI=23.73% Vs. 03.39% for S&P CNX Nifty

Investment Strategy- 2: Safest (safety level= more than 90%): Futures covered by Calls:

Returns (15-days): IDBI=37.84% Vs. 03.39% for S&P CNX Nifty

Investment Strategy-3: Balanced and well protected (safety level= more than three quarters): Calls covered by Calls:

Returns (15-days): IDBI=49.27% Vs. 03.39% for S&P CNX Nifty

Investment Strategy- 4: Aggressive (safety level= do not bother, just look at the returns):

Long uncovered futures:

Returns (15-days): IDBI=89.79% Vs. 03.39% for S&P CNX Nifty

Investment Strategy- 5: Very Aggressive (safety level= no losses but may be reduced profit): Combination of long position in case market & future along with long in covered calls with trading strategies involving shifting of long position into out of money calls from deep into money calls based on support and resistance levels.

Returns (15 days): IDBI=173.86% Vs. 03.39% for S&P CNX Nifty

Conclusions:

On the through exploration of the results of the above derivatives based investment strategies, it may be inferred that on the whole if the derivatives are being used carefully, they results in relatively higher rate of return and protects the investor under different market conditions.

Broadly, it may also be concluded that the hypothesis under different derivative based investment strategies do hold true during different market conditions in the case of Indian Capital Market.

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