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> GUIDETO MASTERING OPTIONS


## COVERED CALL (BUY-WRITE)

Construction - buy 100 shares of stock, sell (or write) one call option. By selling the call, you'll receive immediate cash but have the potential obligation to sell your shares for the call's strike price.

Function - to enhance profitability of stock ownership. It also provides a small downside hedge against adverse stock price movement. If the strategy is used in the long run, the downside hedge increases with the sale of each call.

Bias - neutral to slightly bullish.
When to Use - when you feel the stock will trade up slightly or in a tight range for a period of time.

Breakeven Point - stock purchase price minus the premium received. The premium received acts as a cushion against falling stock prices. The more premiums received, the more the breakeven point is reduced and the larger the hedge.

Max Gain - the maximum gain is limited to the premium received from selling the call plus any capital gains if you sell an out-of-the-money call.

Max Loss - the strategy incurs losses for all stock prices below the breakeven point. The maximum loss is the stock purchase price less the premium received from selling the call.

Key Concepts - if the stock trades up aggressively, your profits are limited by the short call strike price. If the stock price rises above the call strike, you will incur a lost opportunity. Further, if the stock closes above the strike price at expiration, the stock may be called away unless a closing or rolling adjustment is made. The passage of time helps the position. The Covered Call is philosophically identical to the Sell-Write strategy, which works the same way but in the opposite direction.


Example - Buy 100 shares of stock at $\$ 50$ per share, sell one \$50 call for \$2, or \$200 total. Your net cost is \$48 per share, or $\$ 4,800$. The $\$ 2$ premium acts as a small downside hedge, so the stock price could fall to \$48 and you'd just break even. For all stock prices below \$48, you'll incur losses. Because the stock price could theoretically fall to zero, the maximum loss is also \$48. Your maximum gain is the $\$ 2$ premium received from selling the call (If you sold a higher strike call, say \$105, you'd receive less money but be able to make more in capital gains.) If the stock price rises above \$50, you won't participate in those gains since you have the obligation to sell your shares for the $\$ 50$ strike. If the stock price is greater than the strike at expiration, you'll lose your shares and receive the strike price in cash $(\$ 5,000)$, which closes out the position. However, you can also choose to roll the call option to another date and collect additional option premiums, which further reduce your cost basis. If the stock price stagnates, your investment continues to grow because of the option premiums collected.

## COVERED PUT (SELL-WRITE)

Construction - short 100 shares of stock, sell one put. By selling the put, you'll receive immediate cash but have the potential obligation to buy shares for the strike price. Because you must eventually buy back the shares to close out the short position, the sale of the put creates an obligation you must eventually face.

Function - to enhance profitability of short stock position and to provide limited protection against adverse rising stock prices.

Bias - neutral to slightly bearish.

When to Use - when you feel the stock will trade slightly down or in a tight range for a period of time.

Breakeven - your breakeven point is the short stock price plus the put premium received. The premium received acts as a cushion against rising stock prices.

Maximum Gain - the maximum gain is limited to the premium received from selling the put plus any capital gains if you sell an out-of-the-money put.

Maximum Loss - you'll incur losses for all stock prices above the breakeven point (stock price plus the premium). Because there's no limit on how high a stock's price can rise, the strategy has unlimited upside risk.

Key Concepts - if the stock trades down aggressively, your profits are limited by the put's strike price. If the stock price falls below the put strike, you'll incur a lost opportunity. For all stock prices above the breakeven point, you'll head into unlimited losses. The Sell-Write strategy is philosophically identical to the Buy-Write strategy (Covered Call), which works the same way but in the opposite direction.


Example - short 100 shares of stock at \$50, and sell one \$50 put for \$2. Your effective selling price is increased to $\$ 52$, which is also your breakeven point. If the stock price rises above \$52, you'll incur losses with no upper limit. If the stock price falls, you can only make the $\$ 2$ received from selling the put. (If you sold a lower strike put, you'll receive less money but can also make a capital gain in addition to the put's premium.) If the stock price is below the strike at expiration, you won't participate in any further gains. Instead, you'll have to buy shares for the $\$ 50$ strike price $(\$ 5,000)$, which closes out the position leaving you with your maximum \$2 gain. However, you can also choose to roll the put option to another date, and receive additional option premiums, which further increases your short sale price. If the stock price stagnates, your investment continues to grow because of the option premiums collected.

## PROTECTIVE PUT (SYNTHETIC CALL)

Construction - buy 100 shares of stock, buy one put.

Function - to provide downside protection for a long stock position. It's like owning shares of stock with an insurance policy to limit losses.

Bias - bullish but cautious.

When to Use - when wishing to protect profits of a long-term stock position. You can also use it to protect speculative stock purchases such as buying potential technical breakouts, earnings, or other specific events that may cause large decreases in the stock's price.

Breakeven - your breakeven point is the stock purchase price plus the put premium.

Max Gain - gains are realized if the stock price rises above the breakeven point. Because you own the shares, there's no limit on how much you can make. Your upside profits are just reduced by the amount of the price purchased for the put.

Max Loss - losses are realized if the stock price falls below the breakeven point. The maximum loss occurs at the put's strike price. If the stock price falls to that strike or lower, you'll face a fixed loss. The maximum loss equals the total price paid for the stock plus the put premium, less the put strike price.


Key Concepts - due to the creation of time decay from the long put, the position is best used for protection of existing profits, or when a potentially aggressive or explosive upside move in the near future is a good possibility. The Protective Put is mathematically the opposite trade of the Sell-Write position.

Example - buy 100 shares of stock for $\$ 50$ per share, and buy one $\$ 45$ put for $\$ 2$. By purchasing the put, you have the right to sell your shares for the \$45 strike. Because you paid $\$ 2$ for the put, your breakeven price is $\$ 52$. If the stock price falls below the $\$ 45$ put at expiration, you can exercise the put and sell your shares for the $\$ 45$ strike. Your total loss would therefore be $\$ 52$ - $\$ 45$, or $\$ 7$. You could also choose hold on to your shares, but sell the put for cash, which offsets the loss in your long stock position.

Construction - short 100 shares of stock, buy one call

Function - to provide upside protection for a short stock position. It's like an insurance policy on short stock.

Bias - bearish but cautious.

When to Use - when wishing to limit risk of a short stock position, or to protect profits of short stock position while continuing to retain short position.

Breakeven - short stock sale price minus call price.

Max Gain - the position continues to make money for all stock prices below the breakeven point. The theoretical maximum gain occurs if the stock price falls to zero. At that point, your profit equals the breakeven price.

Max Loss - if the stock price trades above the breakeven point, losses will be realized. The maximum loss occurs if the stock price reaches the call strike price or higher. The maximum loss equals the difference between the call strike and the breakeven point.

Key Concepts - because of time decay created by the long call, the position is best used for protection of existing profits on a short stock position. It is also used to initiate a position when a potentially aggressive or explosive downside move in the near future is a good possibility, and you wish to capitalize on that outlook but with insurance against rising stock prices. The Protective Call is the opposing side of the Buy-Write. In other words, the trader who is on the opposite side of the trade from the Protective Call has the Buy-Write. It is philosophically identical to the Protective Put except for anticipation of stock going down.


Example - short 100 shares of stock at $\$ 50$. Buy one $\$ 55$ call for $\$ 2$. Your breakeven point is $\$ 48$. If the stock price is above $\$ 48$ at expiration, you'll incur losses. The maximum loss occurs at the $\$ 55$ call strike. At that point, you've effectively shorted shares at \$48, but can buy them back for $\$ 55$, so the maximum loss is $\$ 7$. For all stock prices below \$48, you'll make gains. The maximum profit is \$48 and would occur if the stock price falls to zero.


## COLLAR

Construction - long 100 shares of stock, simultaneously buy one out-of-the-money put and sell one out-of-themoney call. The position has limited gains and limited losses.

Function - provide no-to-low cost profit protection for a long stock position. The sale of the call is done to offset the cost of the put. By selling the call, you're giving up some of the upside gains in the stock in exchange for buying the put, which insures against downside losses, for little to no cost.

Bias - cautious or even short-term bearish.
When to Use - when you feel that your long stock position may run into a tough period of time, perhaps through earnings, but you want to keep the position.

Breakeven - the sale of the call and purchase of the put will usually create a net debit or credit. (In some cases, it can be established for zero cost.) The breakeven point is the stock purchase price minus the credit or plus the debit.

Max Gain - gains are made at expiration at expiration for all stock prices above the breakeven point. Your maximum gain is limited by the call strike. The maximum gain equals the call strike minus the breakeven point.

Max Loss - losses are realized at expiration for all stock prices below the breakeven. Your maximum loss is limited by the put strike. The maximum loss equals the breakeven point minus the put strike. The maximum gain plus the maximum loss will equal the difference in strike prices.

Key Concepts - collars are not designed to make a lot of money. They are designed to provide downside protection, similar to the Protective Put strategy, but at a much lower price. By using the Collar, your main goal is to limit the downside risk, but you're doing so by giving up some of the potential gains by selling the call. The sale of the call provides the cash to offset the cost of the put.


Example - buy 100 shares of stock at $\$ 50$. Sell one $\$ 55$ call for $\$ 2$, and buy one $\$ 45$ put for $\$ 1$. The net credit is the one-dollar difference. Depending on the strikes, the trade may result in a debit or a credit. Either way, the sale of the call reduces the put's cost. Because this example is a onedollar credit, your breakeven point is reduced by one dollar to \$49. Losses result for all stock prices below \$49 at expiration. The maximum loss is $\$ 4$ and occurs at the $\$ 45$ put strike. It's a $\$ 4$ loss since your breakeven point is \$49 but you can sell your shares for the $\$ 45$ strike. Gains are made for all stock prices above $\$ 49$. The maximum gain is \$6 and occurs for all stock prices above the \$55 call strike. With a cost basis of $\$ 49$, selling your shares at $\$ 55$ results in a maximum $\$ 6$ gain. By selling the call, you're sacrificing potential upside profits in exchange for receiving money to buy insurance to limit the downside risk. Note that the \$4 maximum loss plus the $\$ 6$ maximum gain must equal the $\$ 10$ difference in strikes. The Collar's profit and loss chart is identical to the Vertical Bull Spread.


## VERTICAL BULL SPREAD

Construction - buy one call, sell one call at a higher strike with the same expiration date. The strategy results in a debit. The strategy can also be constructed using puts: Buy one put, sell one put at a higher strike with the same expiration date. By using puts, the strategy results in a credit. Whether using calls or puts, the strategy provides limited gains and limited losses.

Function - low cost stock directional play which allows you two choices to put on the same trade: Long Vertical Call Spread or Short Vertical Put Spread.

Bias - bullish.

When to Use - use when you feel the stock is likely to rise but not too quickly nor explosively as this strategy has limited profits. Also, when constructed properly, this spread can be used as a premium collection strategy, which means it will appreciate with the passage of time.

Breakeven - if using call options, the breakeven point equals the long call strike plus the debit. If using put options, the breakeven equals the short put strike minus the credit.

Max Gain - gains are made for all stock prices above the breakeven point at expiration. For call options, the maximum gain is the difference in strikes minus the debit. For put options, the maximum gain is the credit received from selling the spread. For both calls and puts, the maximum gain is realized if the stock price reaches the short strike or higher.

Max Loss - losses are realized for all stock prices below the breakeven at expiration. For call options, the maximum loss is the amount paid for the spread (the debit). For put options, it's the difference in strikes minus the credit. The maximum gain plus the maximum loss must equal the difference in strikes. The maximum loss is always realized if the stock price reaches the long strike or lower at expiration.


Key Concepts - the strategy has a bullish bias, but with limited gains and limited losses. The maximum value of a Vertical Bull Spread will be equal to the difference between the two strikes. Depending on which strikes you use, time decay can help or hurt the position. The strategy shares the same profit and loss chart as the Collar.

## Examples

Calls - buy one January \$50 call and sell one January \$55 call for a net debit of $\$ 2$. The breakeven point is $\$ 52$. Your maximum loss is the $\$ 2$ paid for the spread. If the stock rises above $\$ 52$, you'll make money, but only up to the $\$ 55$ strike. The maximum gain is $\$ 3$, which occurs for all stock prices above the \$55 call.

Puts - buy one January \$50 put and sell one January \$55 put for a net credit of $\$ 3$. The breakeven point is $\$ 52$. If the stock falls below $\$ 52$, you'll incur losses, but the maximum loss is $\$ 2$ and occurs for all stock prices below the \$50 strike. For all stock prices above $\$ 52$, you'll make money but only up to the $\$ 55$ put. The maximum gain is the $\$ 3$ credit and occurs for all stock prices above the $\$ 55$ put. Note that both the call and put versions share the same breakevens, max gains, and max losses. That will be true unless a skew is present.


## VERTICAL BEAR SPREAD

Construction - buy one put, sell one put at a lower strike with the same expiration date (debit spread). The strategy can also be constructed using calls: Buy one call, sell one call at a lower strike with the same expiration date (credit spread). The strategy provides limited gains and limited losses. The Vertical Bear Spread is the same concept as the bull spread, just in the opposite direction.

Function - low cost stock directional play which allows you two choices to put on the same trade: Long Vertical Put Spread or Short Vertical Call Spread.

Bias - bearish.

When to Use - use when you feel the stock is likely to fall but not too quickly nor explosively as this strategy has limited profits. Also, when constructed properly, this spread can be used as a premium collection strategy, which will appreciate with the passage of time.

Breakeven - if using put options (debit spread), the breakeven point equals the long put strike minus the debit. If using call options, the breakeven equals the short call strike plus the credit.

Max Gain - gains are made for all stock prices below the breakeven at expiration. For put options (debit spread), the maximum gain is the difference in strikes minus the debit. For call options (credit spread), the maximum gain is the credit received from selling the spread. Whether using calls or puts, the maximum gain is realized if the stock reaches the short strike or lower.

Max Loss - losses are incurred for all stock prices above the breakeven point at expiration. For put options, the maximum loss is the amount paid for the spread (the debit). For call options (credit spread), the maximum loss is the difference in strikes minus the credit.


Key Concepts - the maximum value of any vertical spread will be equal to the difference between the two strikes. Therefore, both the buyer and the seller will have limited profits and losses. Depending on which strikes you use, time decay can help or hurt the position. Thus, some vertical spreads can make money over time even if stock stays stagnant.

## Examples

Puts - buy one January \$55 put and sell one January $\$ 50$ put for a net debit of $\$ 2$. The breakeven point is $\$ 53$. For all stock prices above \$53 at expiration, you'll have losses. The maximum loss is the $\$ 2$ paid for the spread and occurs for all stock prices above $\$ 55$. If the stock falls below $\$ 53$ at expiration, you'll make money, but only down to the $\$ 50$ strike. The maximum gain is $\$ 3$, which occurs for all stock prices below the $\$ 50$ put.

Calls - buy one January \$55 call and sell one January \$50 call for a net credit of $\$ 3$. The breakeven point is $\$ 53$. If the stock rises above \$53 at expiration, you'll incur losses with the maximum loss being \$2. The maximum loss occurs for all stock prices above the $\$ 55$ strike. For all stock prices below $\$ 53$, you'll make money but only down to the $\$ 50$ strike. The maximum gain is the $\$ 3$ credit and occurs for all stock prices below the $\$ 50$ call. As with Vertical Bull Spreads, notice that the max gains, max losses, and breakeven points are identical whether using calls or puts. That will always be true unless a skew is present.

## TIME SPREAD (CALENDAR SPREAD)

Construction - long one call in one expiration month while simultaneously short one call at the same strike with a shorter expiration date. The strategy can also be used with puts. Because the longer-dated option will always cost more money, the strategy results in a debit.

Function - to collect time premium by taking advantage of options' non-linear rate of decay. That is, all option prices decay over time, but longer-dated options decay at a slower rate as shown by the chart at the end of this section. Because the short-term option decays faster, the value of the Calendar Spread will widen (become profitable) over time if the stock price remains fairly stable.

Bias - neutral.
When to Use - best used during stagnant periods in order to collect premiums due to time decay. Unlike other premium collection strategies, the Time Spread offers limited losses whether the stock price rises or falls too far.

Breakeven - the strategy has two breakeven points, but you cannot calculate them with a simple formula because of the different expiration dates. When the short option is about to expire, the long option will still have some time value remaining, and you need to know that amount in order to calculate the breakeven points.

Max Gain - gains are realized if the stock price remains between the two breakeven points at expiration of the near-term option. If the stock remains stagnant, the position will profit by the nearer month option (which you are short) decaying at a faster rate than the longer-dated month option (which you are long). When this occurs, the spread will widen thus creating a profit. Profit can also be attained if implied volatility increases. However, for the same reasons as with the breakeven points, you cannot calculate the maximum gain without a pricing model. The maximum gain is always achieved if the stock closes at the strike price at expiration.

Max Loss - the strategy loses some of its maximum potential gain if the stock moves away from the strike by either rising or falling. If the stock moves away, the spread will tighten, thus losing value. Losses are created if the stock moves outside of the breakeven points at the nearterm expiration. Maximum losses are realized if the stock makes a substantial move, whether up or down, when the near-term option expires. The maximum loss is the amount paid for the Time Spread.


Key Concepts - the strategy is best done with at-the-money options where the extrinsic value is the highest, which accentuates the rate of decay. Best results are found in stocks that are in a stagnant period because stock movement away from the strike will lead to losses. The reason the strategy works is because of the passage of time.

Example - buy one April $\$ 50$ call for $\$ 4$, sell one January $\$ 50$ call for $\$ 2$, for a net debit of $\$ 3$. If the stock is $\$ 50$ at January expiration, the short option will have lost $100 \%$ of its value while the long call will lose less, say 50 cents, so the difference between the two options will widen to $\$ 3.50$. If the stock price rises or falls a small amount, the maximum gain will be reduced. However, if the stock price falls significantly, both option prices get close to zero, leaving you with a loss of the original \$3 debit. If the stock price rises significantly, both options converge to their intrinsic values, and the difference between both options again converges toward zero leaving you with the maximum loss of \$3.



## LONG STRADDLE

Construction - long one call and long one put with the same strike price and same expiration. Strike price used is normally at-the-money.

Function - to take advantage of potential fast, aggressive stock movements in either direction, or if you anticipate an increase in implied volatility.

Bias - expecting large stock price moves in either direction.

When to Use - normally used around news release time (i.e. earnings, FDA announcements, etc.) when you feel that the news can affect the stock aggressively but aren't sure in which direction. Also, good to use when you feel implied volatility is likely to increase sharply.

Breakeven - the strategy has two breakeven points, which are found by adding the straddle's cost to the strike and subtracting it from the strike price.

Max Gain - profits are made for all stock prices above the upper breakeven point or below the lower breakeven point. Because there's no limit on how high a stock's price can go, there's no limit on the amount of profits that can be made if the stock price rises. Because a stock can only fall to zero, however, the downside maximum gain is limited to the strike price minus the straddle's cost.

Max Loss - losses are realized for all stock prices between the two breakeven points at expiration. The maximum loss is the straddle's cost, which occurs if the stock price closes at exactly the strike price.


Key Concept - because the straddle owner owns a call and put, profits can be made regardless of the stock's direction, but it requires a large enough move to make up for the straddle's cost. Because of large decay associated with this position, time sensitivity is critical. If the stock doesn't make sudden, aggressive moves, time decay will begin to create losses. Once anticipated movement occurs, it is critical to close down position in order to secure profit and eliminate further risk of substantial decay. Rolling can also be used to secure profits but maintain exposure to further increase profits.

Example - buy one May $\$ 50$ call for $\$ 3.20$, and buy one May $\$ 50$ put for $\$ 3$. The total debit paid is $\$ 6.20$. The upper breakeven is $\$ 56.20$, and the lower breakeven is $\$ 43.80$. Losses are realized if the stock price stays between these two breakeven points at expiration. But if the stock price falls below $\$ 43.80$ or rises above $\$ 56.20$ at expiration, gains will be realized. The further the stock price falls or rises, the larger the profits.


## SHORT STRADDLE

Construction - short one call and short one put with the same strike price and same expiration month. Strike price used is normally at-the-money. The Short Straddle trader is on the opposite side of the trade of the Long Straddle trader. Because the position is sold, it always produces a credit.

Function - to take advantage of a stock entering a stagnant or low volatility trading range.

Bias - neutral.

When to Use - normally around a time away from expected news releases (i.e. earnings, FDA announcements, etc.) when you feel that the lack of news can lead to a period of stagnation. Also, good to use when you feel implied volatility is likely to decrease sharply.

Breakeven - the Short Straddle shares the same two breakeven points as the Long Straddle. The breakeven points are found by adding the straddle's credit to the strike and subtracting it from the strike.

Maximum Gain - profits are realized for all stock prices between the breakeven points. The maximum gain is the credit received and is realized if the stock closes at exactly the strike price.

Max Loss - losses occur if the stock price closes outside of the breakeven points. Because there's no maximum a stock price can climb, there's no limit on the amount that can be lost if the stock price rises. The greater the price increase above the upper breakeven, the larger the losses. To the downside, the maximum loss is limited to the strike price minus the credit received.


Key Concepts - because of large decay associated with this position, time sensitivity is critical. The passage of time aids this strategy, so the longer the stock remains stagnant or between the two break-even points, the better for the seller.

Example - sell one May $\$ 50$ call for $\$ 3.20$, and sell one May $\$ 50$ put for $\$ 3$. The total credit received is $\$ 6.20$ and is also the most you can make. The upper breakeven is $\$ 56.20$ and the lower breakeven is $\$ 43.80$. Maximum gain occurs at a stock price of exactly \$50 at expiration. Losses are realized for all stock prices above $\$ 56.20$ or below $\$ 43.80$ at expiration. Because there's no limit on how high a stock price can rise, there's no upper bound on the losses that can occur as the stock price rises beyond \$56.20. On the downside, if the stock price fell to zero, you'd be assigned on the $\$ 50$ put - but because you received \$6.20 to initiate the position, your maximum loss would be $\$ 43.80$.


## LONG STRANGLE

Construction - buy one call and buy one put with different strike prices but the same expiration date. Both options are usually out-of-the-money. The Long Strangle is conceptually similar to the Long Straddle with the exception of different strikes being used.

Function - to take advantage of large potential stock movements in either direction, or if you anticipate an increase in implied volatility.

Bias - expecting fast, aggressive stock price moves in either direction. This shares the same bias as the Long Straddle; however, the Long Strangle requires even bigger moves in the stock price before profits are realized. It has a lower probability for a payoff, so it will be cheaper than the Long Straddle assuming all other factors the same.

When to Use - normally around news release time (i.e. earnings, FDA announcements, etc.) when you feel that the news can affect the stock aggressively but aren't sure in which direction. Also, good to use when you feel implied volatility is likely to increase sharply.

Breakeven - the strategy has two breakeven points. For the lower, take the put strike and subtract the debit. For the upper, add the debit to the call strike.

Max Gain - profits are made for all stock prices above the upper breakeven point or below the lower breakeven point. Because there's no limit on how high a stock's price can go, there's no limit on the amount of profits that can be made if the stock price rises. If the stock price falls, however, the maximum gain is limited to the strike price minus the Strangle's cost, which occurs if the stock price falls to zero.

Max Loss - losses are realized if the stock closes between the breakeven points. The maximum loss is the amount paid and occurs if the stock closes between the call and put strikes.


Key Concepts - because of large decay associated with this position, time sensitivity is critical. Once anticipated stock or volatility movement occurs, it is critical to close down the position in order to secure profits and eliminate further risk of substantial decay. Philosophically identical to the Long Straddle except the Long Strangle will cost less because of the wider strikes used. The trade-off for this is the need for faster, more aggressive stock price moves before becoming profitable.

Example - with the stock at $\$ 52.50$, buy one March $\$ 50$ put for $\$ 1$, buy one March $\$ 55$ call for $\$ 1.20$. The total cost is $\$ 2.20$ and is the most you can lose. The lower breakeven point is the $\$ 50$ put strike minus the $\$ 2.20$ cost, or $\$ 47.80$. The upper breakeven is the $\$ 55$ call strike plus the $\$ 2.20$ cost, or $\$ 57.20$. Losses occur for all stock prices between $\$ 47.80$ and $\$ 57.20$. The maximum loss occurs for all stock prices between the $\$ 50$ and $\$ 55$ strikes. Gains are made only if the stock price falls below $\$ 47.80$ or rises above $\$ 57.20$ at expiration. The maximum gain to the upside is unlimited. To the downside, it is limited to $\$ 47.80$, and occurs if the stock price falls to zero. If the stock falls to zero, you could exercise the put and collect the \$50 strike. Because you paid $\$ 2.20$ for the Strangle, your max gain would be \$47.80.

## SHORT STRANGLE

Construction - short one call and short one put with different strike prices but the same expiration date. Both options are usually out-of-the-money. Because both options are sold, the strategy results in a credit.

Function - to take advantage of a stock entering a stagnant or low volatility trading range.

Bias - neutral.

When to Use - normally around a time away from expected news releases (i.e. earnings, FDA announcements, etc.) when you feel that the lack of news can lead to a period of stagnation. Also, good to use when you feel implied volatility is likely to decrease sharply.

Breakeven - the breakeven points for the Short Strangle are the same as the Long Strangle. For the upper breakeven point, take the credit amount received and add it to the call strike. For the lower, subtract the credit from the put strike.

Max Gain - profits are realized if the stock price stays between the breakeven points at expiration. The maximum gain is the initial credit, and is realized for all stock prices between the call and put strikes.

Max Loss - losses occur for all stock prices outside of the breakeven points. Because there's no upper limit on how high a stock price can rise, losses are unlimited to the upside. The max loss to the downside is the put strike minus the credit received (the breakeven price).


Key Concepts - the passage of time benefits the strategy. The longer the stock remains stagnant or between the two break-even points, the better. Decreasing implied volatility also benefits the strategy.

Example - with the stock at \$52.50, sell one March \$50 put for $\$ 1$, sell one March $\$ 55$ call for $\$ 1.20$. The total credit is $\$ 2.20$ and is also the most you can make. The maximum gain occurs for all stock prices between the \$50 and $\$ 55$ strikes. The upper breakeven is the $\$ 55$ call strike plus the $\$ 2.20$ cost, or $\$ 57.20$. The lower breakeven is the $\$ 50$ put strike minus the $\$ 2.20$ cost, or $\$ 47.80$. Losses are realized for all stock prices below $\$ 47.80$ or above $\$ 57.20$ at expiration. Because there's no limit on how high a stock price can rise, there's no upper bound on the losses that can occur as the stock price rises beyond \$57.20. The maximum loss is the put strike minus the initial credit received (breakeven price). If the stock price fell to zero, you'd be assigned on the $\$ 50$ put, but because you received $\$ 2.20$ to initiate the position, your maximum loss would be $\$ 47.80$.


## LONG BUTTERFLY SPREAD

Construction - the strategy can be constructed using all calls or all puts with the same expiration date. If using calls, buy one call, sell two calls at a higher strike, and buy one call at an even higher strike. All call strikes are usually equally spaced, but other constructions can be used. All calls must have the same expiration date. The standard butterfly using all calls (or all puts) always results in a debit. Another version called the Iron Butterfly is constructed using both calls and puts: Short a straddle while long a strangle around it. The Iron Butterfly results in a credit. All butterfly spreads, whether initiated for debits or credits, have limited gains and limited losses.

Function - premium collection strategy with upside and downside protection. Also can be used as a short volatility play.

Bias - neutral.

When to Use - when you feel the stock will trade in a very tight range near a strike price. Also, if you feel the stock has a likelihood of a decrease in implied volatility. The butterfly allows you to take advantage of these potential situations while offering the investor a hedged position.

Breakeven - the strategy has two breakeven points. The lower breakeven point is found by adding the debit to the lowest strike call. The upper breakeven is found by subtracting the debit from the highest strike call.

Max Gain - gains are realized for all stock prices between the breakeven points. The maximum gain is found by subtracting the debit from the difference between one of the long and short strikes. The maximum gain is realized only if the stock price closes at exactly the short strike at expiration.

Max Loss - losses occur for all stock prices outside of the breakeven points. The maximum loss is limited to the debit and occurs if the stock closes above the highest strike or below the lowest strike.


Key Concepts - the Long Butterfly is an ideal strategy for premium collectors who seek to limit potential losses in the event the stock moves adversely. This strategy can also take advantage of expected decreases in implied volatility. The strategy can be viewed as two separate trades: In the case of a traditional butterfly, the position can be broken down into two vertical spreads, one long and one short with each sharing the same short strike, and having different but equidistant long strikes. In the case of the Iron Butterfly, the position can be broken down to a Short Straddle surrounded by a Long Strangle. Butterflies are best entered into with longer dated options.

Example - buy one \$45 call, sell 2 \$50 calls, buy one \$55 call for a net debit of $\$ 2$. The lower breakeven point is found by taking the lower \$45 strike and adding it to the \$2 debit, or $\$ 47$. The upper breakeven is found by subtracting the $\$ 2$ debit from the upper $\$ 55$ strike, or $\$ 53$. If the stock price closes between \$47 and \$53 at expiration, some gain will be made. The maximum gain is $\$ 3$ and occurs if the stock closes at exactly \$50 at expiration. If the stock closes outside of the breakeven points (below \$47 or above \$53) losses are incurred.
The maximum loss is the $\$ 2$ debit, which is realized if the stock closes below \$45 or above \$55.


## SHORT BUTTERFLY SPREAD

Construction - the Short Butterfly spread is on the opposite side of the trade of the Long Butterfly spread. Therefore, the long and short options are exactly opposite of the long butterfly. The Short Butterfly trader therefore sells one call, buys two at a higher strike, and sells one at yet an even higher strike. A long Iron Butterfly produces the same profit and loss chart, but is established for a debit, and can be viewed as a Long Straddle with a short strangle around it.

Function - limited directional stock movement play. Also, it can be a long volatility play.

Bias - limited directional, regardless of the stock's direction.

When to Use - when you feel the stock will trade away from a strike but not aggressively. Also if you feel the stock has a likelihood of an increase in implied volatility. The Short Butterfly allows you to take advantage of these potential situations while offering the investor a hedged position.

Breakeven - the Short Butterfly shares the same two breakeven points as the Long Butterfly. The lower breakeven is found by adding the credit to the lowest strike. The upper breakeven is found by subtracting the credit from the highest strike price.

Maximum Gain - gains are made for all stock prices above the upper breakeven and below the lower breakeven. The maximum gain is the credit received and occurs if the stock closes above the highest strike, or below the lowest strike. The trade will also be profitable in event of increasing implied volatility.

Maximum Loss - losses are realized when the stock closes between the breakeven points. The maximum loss is the credit received minus the difference in the long and short strike.


Key Concepts - the strategy can be broken down and viewed as two trades: With traditional butterflies (using all calls or all puts), the position can be broken down into two opposing vertical spreads, one long, and one short with each sharing the same short strike and different but equidistant long strikes. The Iron Butterfly can be broken down to a Long Straddle surrounded by a short strangle. Short Butterflies are best used with longer-dated options.

Example - sell one \$45 call, buy 2 \$50 calls, sell one \$55 call for a net credit of $\$ 2$. The lower breakeven point is found by adding the $\$ 2$ credit to the lowest $\$ 45$ strike, which equals $\$ 47$. The upper breakeven point is found by subtracting the $\$ 2$ credit from the $\$ 55$ highest strike, which equals \$53. If the stock price closes between \$47 and \$53 at expiration, some losses will be incurred. The maximum loss is $\$ 3$ and occurs if the stock closes at exactly the \$50 center strike at expiration. If the stock closes outside of the breakeven points (below $\$ 47$ or above $\$ 53$ ) gains are made. The maximum gain is the $\$ 2$ credit, which is realized if the stock closes below \$45 or above \$55.


## LONG CONDOR

Construction - the Long Condor can be constructed using either all calls or all puts. All options must have the same expiration date. For calls, buy one call at one strike, sell another call at a higher strike, sell another call at yet a higher strike, and then buy one call at an even higher strike. All strikes can be equally spaced, but other variations can be created using different spacings. The strategy results in a debit. In the case of an Iron Condor, you're short a strangle while long a strangle around it, which results in a credit.

Function - premium collection strategy with upside and downside protection. Also a short volatility play.

Bias - neutral.

When to Use - when you feel the stock will trade in a fairly tight range between the two short strike prices and stagnate there. Also if you feel the stock has a likelihood of a decrease in implied volatility. The long condor allows you to take advantage of these potential situations while offering the investor a fully hedged position.

Breakeven - the strategy has two breakeven points. The lower breakeven is found by adding the debit to the lowest strike. The upper breakeven is found by subtracting the debit from the highest strike.

Max Gain - gains are made for all stock prices between the breakeven points. The maximum gain is the difference between the first two strikes minus the debit.

Max Loss - losses result for all stock prices below the lower breakeven and above the upper breakeven. The maximum loss is the debit paid for the strategy and occurs if the stock closes below the lowest strike, or rises above the highest strike.


Key Concepts - the Long Condor is an ideal strategy for premium collectors who seek to minimize potential losses in the event the stock moves adversely. This strategy can also take advantage of expected decreases in volatility. The strategy can be broken down and viewed as two trades: In the case of a traditional condor (using all calls or all puts), the position can be broken down into two opposing vertical spreads, one long and one short. In the case of an Iron Condor, the position can be broken down to a short strangle surrounded by a Long Strangle. Condors are best entered into with longer-dated options.

Example - buy one \$45 call, sell one \$50 call, sell one $\$ 55$ call, buy one $\$ 60$ call for a net debit of $\$ 3$. The lower breakeven point is $\$ 48$, and the upper breakeven is $\$ 57$. If the stock price stays between these two breakeven points, gains will be made. The maximum gain is $\$ 2$, which is found by considering the $\$ 5$ difference in the first two strikes (\$50-\$45) and subtracting that from the \$3 debit. The maximum gain is obtained if the stock price closes between the two center strikes of \$50 and \$55 at expiration. The maximum loss is the $\$ 3$ paid for the position and will occur if the stock closes below $\$ 45$ or above $\$ 60$.


## SHORT CONDOR

Construction - the Short Condor is the opposite trade of the Long Condor, so the strategy is constructed in exactly the opposite way. It can be constructed using all calls or all puts, but all options must have the same expiration date. Using calls, you sell one call at one strike, buy a call at a higher strike, buy one call at yet a higher strike, and then sell one call at an even higher strike. Generally, all strikes are equally spaced, but other constructions can be used. The trade always results in a credit. In the case of an Iron Condor, buy a strangle while selling a strangle around it.

Function - directional, but limited play whether the stock rises or falls. Also long volatility play.

Bias - bullish or bearish, but limited.

When to Use - when you feel the stock will trade away from a range between two center strikes but not aggressively. Also used if you feel the stock has a likelihood of an increase in implied volatility. The Short Condor allows you to take advantage of these potential situations with a hedged position.

Breakeven - the strategy shares the same two breakeven points as the Long Condor. The lower breakeven is found by adding the credit to the lowest strike. The upper breakeven is found by subtracting the credit from the highest strike.

Max Gain - gains are made if the stock price falls below the lower breakeven or rises above the upper breakeven. The maximum gain is the initial credit received and is realized if the stock falls below the lowest strike or rises above the highest strike. The trade will also be profitable in the event of increasing implied volatility.

Max Loss - losses are realized if the stock price stays between the two breakeven points. The maximum loss is limited to the difference of the first two strikes and subtracting the initial credit, and occurs if the stock stays between the two long center strikes.


Key Concepts - the Short Condor is an ideal strategy for long volatility players who seek to minimize potential losses in the event the stock moves adversely. The strategy can be broken down viewed as two trades: In the case of a traditional Short Condor, the position can be broken down into two opposing vertical spreads, one long, and one short. The Iron Condor can be broken down to a long interior strangle surrounded by a short exterior strangle. Short Condors are best entered into longer-dated months.

Example - sell one \$45 call, buy one \$50 call, buy one $\$ 55$ call, sell one $\$ 60$ call for a net credit of $\$ 2$. The lower breakeven point is \$48, and the upper breakeven is \$57. If the stock price stays between these two breakeven points, losses will be made. The maximum loss is found by considering the $\$ 5$ difference in the first two strikes (\$45 and \$50) and subtracting that from the $\$ 2$ credit. The maximum gain is the $\$ 2$ credit and occurs if the stock closes below \$45 or above \$60 at expiration.

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