Learn N' Trade

WORKSHOP STUDY GUIDE

RED Option
3304 N. Lincoln Ave Suite 2
Chicago, Il 60657
877-RED-OPTN (877-733-6786)
www.redoption.com

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Short Vertical Spreads

Strategy Description: This strategy is the most basic spread: buying one call or put and selling another at a different strike in the same expiration month. Short Verticals have defined risk and they profit from positive time decay (theta). Although Short Verticals have directional risk, they can still profit if the underlying stays where it is or moves in the desired direction, but can still sometimes be profitable if the underlying moves a small amount in the wrong direction.

Position Structure: The Short Vertical Call Spread is the sale of the lower strike call (sell nearer-to-the-money) and the purchase of a higher strike call (buy further-out-of-the-money) of the same expiration month, and is bearish to neutral. For example, with the stock at $78, selling a call vertical would be selling the 80 call and buying the 85 call of the same expiration month.

The Short Vertical Put Spread is the sale of the higher strike put (sell nearer-to-the-money) and the purchase of a lower strike put (buy-further-out-of-the-money) of the same expiration month, and is bullish to neutral. For example, with the stock at $78, selling a put vertical would be selling the 75 put and buying the 70 put of the same expiration month.

Maximum Profit: Short Verticals are executed for credits. The credit collected when you first place the trade, less commissions, is the maximum profit. Maximum profit is realized on a short put vertical if the underlying settles at or above the strike price of the short put at expiration. Maximum profit is realized on a short call vertical if the underlying settles at or below the strike price of the short call at expiration.

Maximum Loss: The dollar value of the difference between the strikes of the short call and long call, or short put and long put, minus the credit received when selling the vertical, plus commissions. Maximum loss occurs if the underlying settles lower than the strike price of the long put or higher than the strike of the long call.

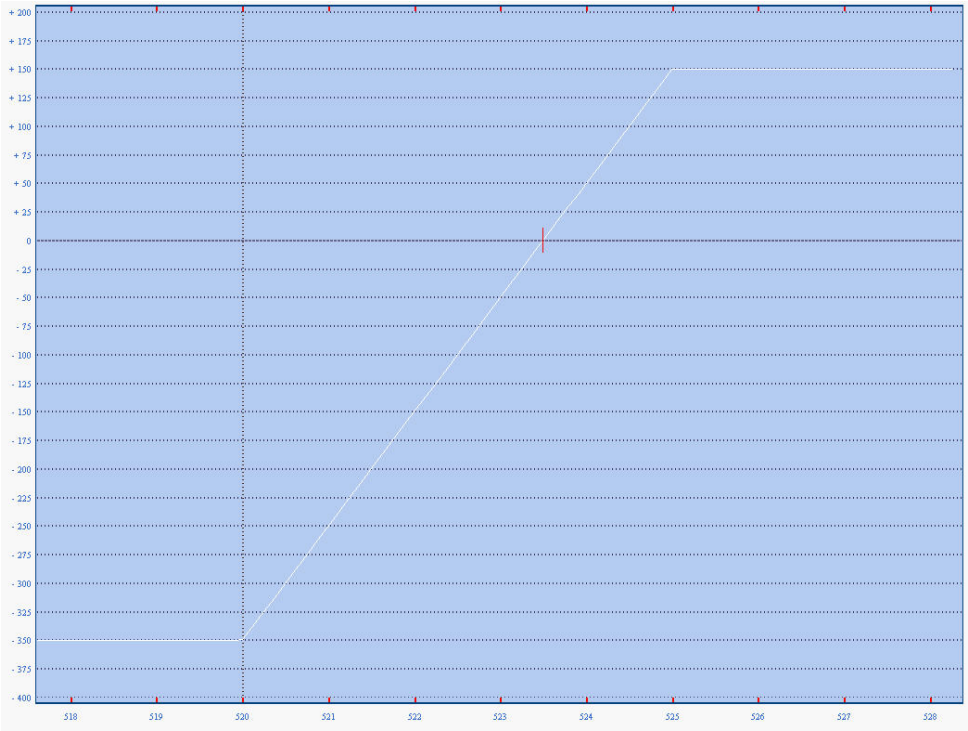
Break-even points: The break-even point at expiration of a short put spread is the strike price of the short put minus the premium that you sold the spread for, not counting commissions. The break-even point at expiration of a short call spread is the strike price of the short call plus the premium that you sold the spread for, not counting commissions. Ex. If you sell the 80/85 call spread for $1.75, the break-even point is $81.75.

Capital Requirement: The amount of buying power necessary to trade short vertical spreads is the maximum loss of the position, which is the difference between the strike prices of the long and short options, less any credit received. For example, if you sell the 80/85 call spread for a $1.75 credit, the buying power used to do this trade will be $3.25 (5 – 1.75 = 3.25) which works out to be $325 per spread as each contract has a 100 share multiplier.

Candidates: Short Verticals are best used on stock and indices that are not expected to make substantial price moves.

Execution: It is best to execute Short Verticals as one trade. Attempting to leg into the position can expose you to significant execution risk. The likelihood of one side "getting away" from you before you have the entire position established is very high. The result can be a very poor price for the trade, resulting in sub-par profit potential and increased overall risk. This trade can be executed online with single click functionality using the thinkorswim software.

The following graph taken from the *Analyze Page – Plot Risk Profile* tab of the thinkorswim trading software shows risk profile of a Short Vertical Put Spread at expiration.



Entrance Criteria for Short Vertical Spreads

1. You should consider doing Short Verticals on stocks or indices with which you feel reasonable comfort in picking direction, or that you feel won't move very much. Also, it's best to sell verticals when the implied volatility is higher than normal, as you will be able to capture more of the premium when volatility drops back. Look at your candidate's daily chart and determine whether you can estimate the stocks near term direction from a technical standpoint.

2. The combined open interest of front-month options should be at least twenty times the number of vertical spreads you want to do.

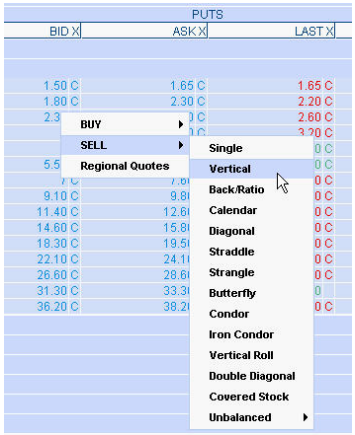
3. Check the news and make sure it helps confirm your anticipated underlying price movement. Also keep in mind that news can affect the volatility. For example, you may want to close out any short spreads on a particular candidate well before earnings announcements. You also might consider putting short spreads on just before earnings when volatility is still high with the anticipation it will quickly decrease. The rule of thumb is to buy back in low volatility and sell in high volatility.

4. Look to place a Short Put Spread if you are bullish. If you are bearish, look to place a Short Call Spread. In our XEO example, we are bullish and will look to sell a Short Put Spread.

5. Select the expiration month that will give you between four and eight weeks until expiration. Selling verticals for a shorter period of time typically does not yield enough

credit to offset the risk of the position. Selling verticals for a longer period of time is not recommended because the underlying's price behavior becomes too unpredictable, and extrinsic value decays at too slow a rate. In periods of low volatility you will usually have to go longer in time to receive a reasonable amount of premium to make the spread worth selling. In periods of higher volatility, selling a spread four weeks from expiration is reasonable.

6. To evaluate various Short Vertical Spreads using the thinkorswim software, go to the TRADE window and enter your candidate's symbol and then hit enter. Then select the expiration month you wish to do the trade. Now right click on the bid or ask price of any strike call, if you want to evaluate a Short Call Spread or, right click on the bid or ask price of any strike put, if you want to evaluate a Short Put spread. Move the cursor first to "SELL" and then left click on "Vertical" from the pull down screen. See below.



7. A short spread will now be placed in the "ORDER ENTRY" section at the bottom of the TRADE screen. You can view and adjust various strike prices by left clicking on the down arrows on the "STRIKE" column.

In our XEO example, the adjusted mid price of the 520-525 put spread is shown to be 1.50. Even if we give up $0.10 to $0.15 to fill we will receive more than 20% of the width of the $5 spread which is $1.00. The 525-530 spread can be sold for only slightly more so it makes more sense to sell the spread further OTM because the index can in wrong direction further before the trade begins losing money. Although, the 515-520 put spread is even further OTM we can not receive at least $1.00 for selling it (20% of its $5 width). So by process of elimination, the 520-525 spread is the one we will choose.

8. The combined open interest of the options selected for the spread should be at least 20 times the number of spreads you are considering placing.

9. Determine the break-even point of the spread. With a Short Put Spread this is done by subtracting the premium you will receive from the short put strike price. With a Short Call Spread this is done by adding the premium you will receive to the short call strike price.

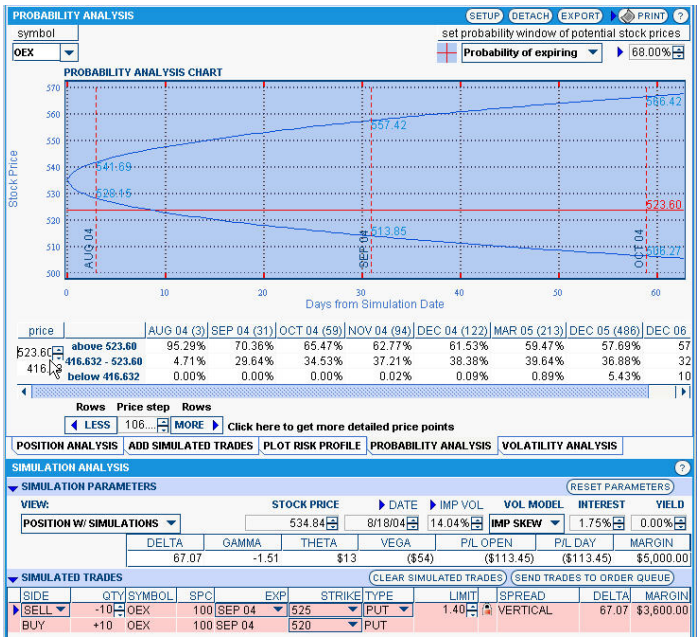
   In our example we are selling the September 525 puts and buying the 520 puts. The adjusted mid price of this short spread is shown to be $1.50. However, it is unreasonable to expect a fill at this price. You will have to give up approximately ten cents from this price to expect a fill so most likely you will receive $1.40 for selling the spread. If you deduct 1.40 from the short put strike of 525, the break-even point at expiration will be 523.60. The "Order Confirmation" Screen of the thinkorswim software calculates the break-even point for you.

10. To determine the trade's probability of success, send the trade to the "ANALYZE" screen by left clicking the "Analyze" button on the bottom of the ORDER ENTRY section of the thinkorswim software's TRADE screen. The trade will now be placed on the ANALYZE screen. Once you have your trade on the ANALYZE page do the following:

    a. Select the "PROBABILITY ANALYSIS" tab by left mouse clicking it.

    b. In the "price" column type in the break-even price point of your trade. With a short put spread the break-even price point will be typed in the top row so it is shown as "above." With a short call spread the break-even price point will be typed in the bottom row so it is shown as "below." In our example, since we are selling a short put spread we have typed in the break-even point of 523.60.

    c. If you are selling a put spread note the probability of the stock or index staying <u>above</u> your break-even point at the option's expiration. If you are selling a call spread note the probability of the stock or index staying <u>below</u> your break-even point. This is the trade's probability of success. In our example, we see that the probability of the XEO staying above 523.60 (our break-even point) by the September expiration is 70.36%



11. If you are comfortable with the trade and would like to place it, click on the "SEND TRADES TO ORDER QUEUE" button at the bottom of the ANALYZE screen and the trade will be ready for order placement. Make sure you have adjusted trade price to one that is likely to fill. You will note in the previous screen shot we have adjusted the $1.50 mid price to $1.40, a price that has a decent probability of filling.

12. Use the following dialogue if you wish to place the trade over the telephone:

    "Sell to open the XEO September 520/525 put spread for a $1.40 credit, ten times. That is, buy ten September 520 puts and sell ten September 525 puts for a $1.40 credit."

Exit Criteria for Short Vertical Spreads

1. With Short Vertical spreads, you can let the position run to near expiration to let it make its maximum profit. But it may be prudent to close out the position before expiration if any of the following occur:

    a. It usually makes sense to close the entire Short Vertical whenever you can receive 80% of the potential profit, or if the spread can be bought back for $0.15 or less. For example, if you sold a vertical spread for $1.00 and you can close it out for a debit of $0.20, you might want to do so. That allows you to keep most of the profit on the trade and prevents a winner from turning into a loser if the stock or index moves sharply. When the short spread can be bought back so cheap, the extra profit you could make does not offset the risk of holding the position.

    b. Before you buy back the Short Vertical to close it out, first check to see what you can receive for selling the long option in the spread. If it is trading very cheaply, at say $0.05, do not close out the entire Short Vertical; only buy back the short option. You will now own a long option that may become valuable should the stock make a dramatic move.

    c. If news is coming out such as an earnings announcement or economic or political news that could dramatically increase the overall market or the stock or index's volatility, it is usually wise to close the trade.

Short Iron Condors

Strategy Description: Market-neutral, defined-risk position that profits from positive time decay (theta) and can be profitable over a wide range of stock or index prices at expiration.

Position Structure: A Short Iron Condor is the sale of an out-of the-money vertical call spread (strike prices above the underlying price) and an out-of-the-money vertical put spread (strike prices below the underlying price) on the same underlying in the same expiration month (i.e., Long Dec 80 put, short Dec 85 put, short Dec 90 call and long Dec 95 call). When the trade shares a common short strike, it is referred to as Short Iron Butterfly (i.e. Long Dec 80 put, short Dec 85 put and short Dec 85 call and long the Dec 90 call).

Maximum Profit: Iron Condors are executed for credits. The credit received when you sell the Iron Condor is the maximum amount you can make on it. Maximum profit occurs if the underlying price settles in between the short put strike and the short call strike at expiration.

Maximum Loss: The dollar value of the difference between the strikes of either the short call vertical or the short put vertical, whichever is greater, minus the credit received when selling the Iron Condor, plus commissions. Maximum loss occurs if the underlying price is below the strike price of the long put or above the strike price of the long call at expiration.

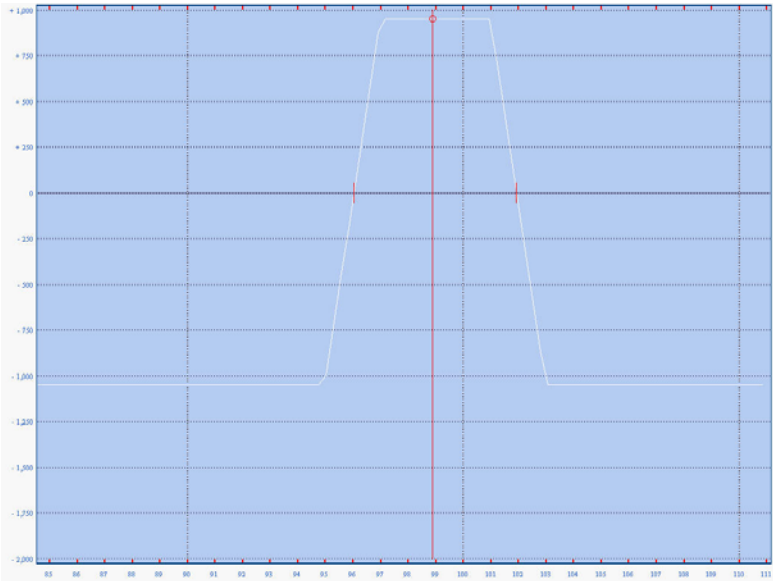
Break-even Points: Subtract the amount received from the short put strike and add the amount received to the short call strike, not counting commission.

Capital Requirement: The amount of buying power necessary to do an Iron Condor is the amount of the maximum loss on the entire position. The requirement is NOT the risk of both the short call vertical and short put vertical. That is because only one can be a loser at expiration. For example, selling the Dec 80/85/90/95 Iron Condor for $2.75 requires you to have $2.25 in buying power in your account.

Candidates: Best used on range-bound stocks or indices that are expected to be relatively stable.

Execution: It is best to execute Iron Condors as one trade. Attempting to leg into the position via four individual calls and puts or via a call vertical and put vertical can expose you to significant execution risk. The likelihood of one side "getting away" from you before you have the entire position established is very high. The result can be a very poor credit for the Iron Condor, resulting in sub-par profit potential and increased overall risk.

The following graph taken from the *Analyze Page – Plot Risk Profile* tab of the thinkorswim trading software shows the risk profile of the Short Iron Condor at expiration.



Short Iron Condor Entrance Criteria:

1. Seek credits that are roughly 50% of the difference between the strikes of the verticals, that is, where the reward of the Iron Condor is approximately the same as the risk.

2. Select a candidate that you believe will trade in a range without a strong tendency to trend. Indices and tracking stocks such as the DJX, DIA, MNX, XEO, ONEQ and QQQ are great candidates for Iron Condors, as well as individual stocks priced between $50 and $75 that exhibit range-bound, non-trending price action.

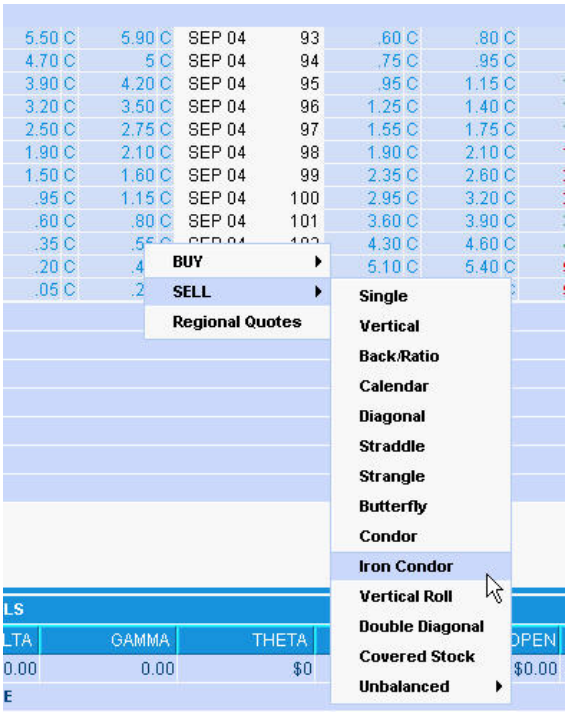
3. Total open interest in all the options of the expiration month you are looking at should be at least 10 times, but ideally closer to 20 times, your trading quantity. That will let you get a good execution price in both opening and closing the position.

4. The implied volatility of the options is a key determinant in how much credit you will receive for selling the Iron Condor. All other things being equal, the higher the volatility, the greater the credit. Therefore, it is better to look to establish Iron Condors during periods of higher volatility with the anticipation that it will drop or at least or revert towards the mean. However, Iron Condors should be avoided prior to news announcements or earnings that could significantly increase the volatility in the stock. For example, before news that could dramatically impact the outlook for a stock, such as drug stocks before an FDA announcement, the uncertainty and fear can increase implied volatilities to very high levels. High implied volatility generates large credits for Iron Condors and makes them very attractive on paper. But more often than not, the actual stock movement after the announcement can drive the price beyond either of the long strike prices of the Iron Condor.

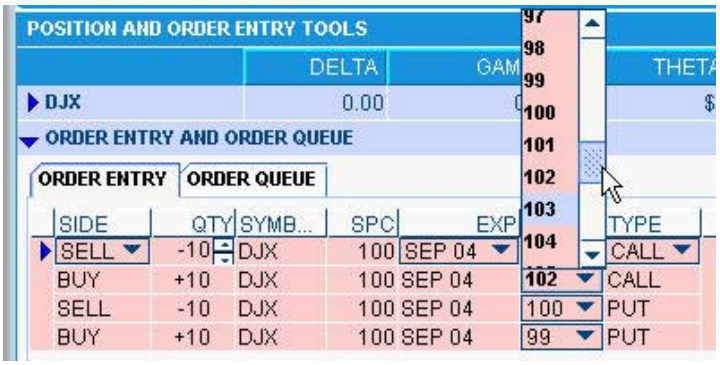
5. Iron Condors are best placed in options that have at least four weeks but no greater than eight weeks before expiration. The reason for this is that with less than four weeks, the credit received for Iron Condors is too low to be attractive. Beyond eight weeks, the

predictability of the volatility of the stock or index drops; there is too much that can happen beyond eight weeks.

6. To execute a Short Iron Condor as one trade, go to the thinkorswim "TRADE" window, enter in the symbol and hit "ENTER". Then choose the month and click on the blue arrow to view the options. Right click on the bid or ask price of a call or put near the anticipated trading range and select "SELL" then "Iron Condor."



7. Now adjust the strike prices of the puts and the calls until you have a call spread near the upper anticipated trading range and a put spread near the lower portion of the anticipated trading range.



8. Adjust the strikes until you have two spreads that are near the outer portions of the trading range and whose mid price (average of the bid and ask prices of the options in

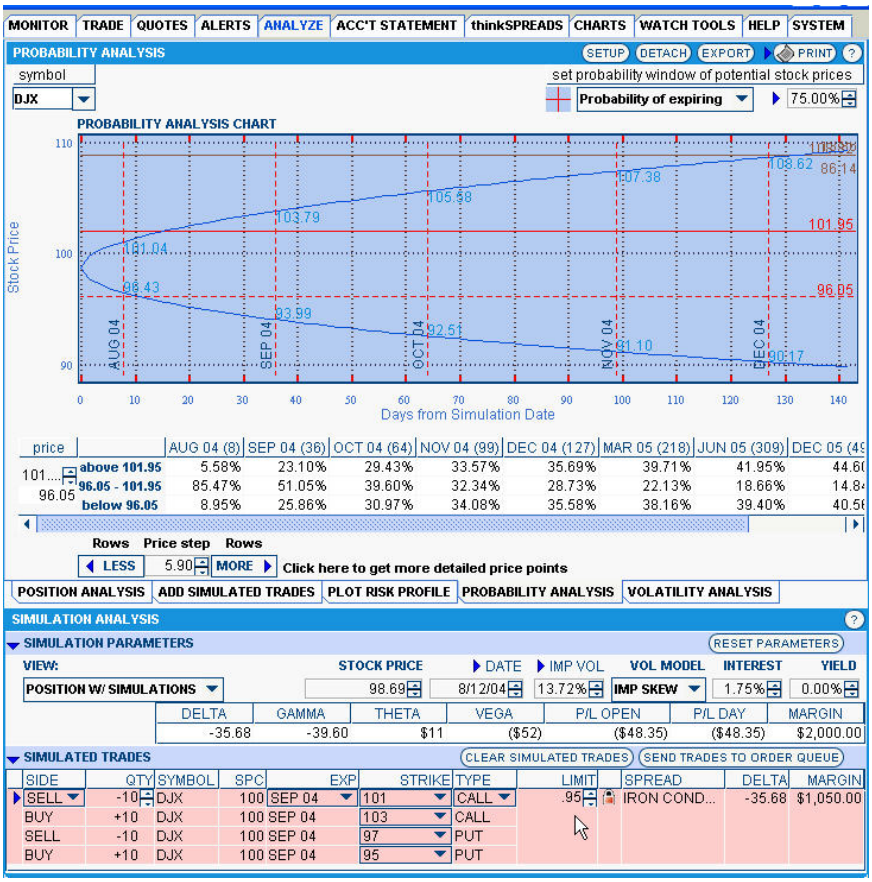
the Iron Condor) is 40-50% of the average width of the spreads. In this example we have chosen the 95-97 put spread and the 101-103 call spread that is trading for mid price of $1.00 which is 50% of the average width of the spreads (2.00 ÷ 1.00 = .50 or 50%).

9. Now calculate the break-even points of the Iron Condor by subtracting the estimated premium you will receive by selling the spread from the short put strike and adding the estimated premium you will receive to the short call strike.

   In our example we will estimate that we will receive $0.95 for the sale of the Iron Condor as we will submit our offer for .05 less then the mid price of 1.00 as we will have to give up a slight edge from fair value (the mid price) to have any expectations of filling the order. Our break-even points, therefore, will be 96.05 (97 - .95) and 101.95 (101 + .95). If the DJX stays between these break-even points we will make money. Notice that the break-even points are right near our anticipated trading range of 96 and 102. Drawing horizontal lines at the break-even points on the underlying daily chart will help you visualize the underlying's probability of staying between these points until expiration.

10. Select the "Analyze" button below the Order Entry section. Then do the following:

    a. Click on the "Probability Analysis" tab.
    b. Type in the upside or downside break-even point in the "price" section.
    c. Type in the distance between the break even points (5.90) in the "Price step" box.
    d. You will note that the middle row now shows the break-even points (96.05-101.95) and the probability of the underlying price staying between them calculated for various expirations. You will note that the probability of the stock staying between the break even points by September expiration is 51.05%.



Ideally you would like to receive one half the width of the spread, giving you a risk/reward ration of 1:1 and a 50% probability of the stock staying between the break-even points by expiration. In periods of low volatility sometimes these parameters are hard to meet, but the closer you get to them the better. If the risk is more than you want, the probability of success could be higher and if the risk is lower the probability of success could be lower.

12. Remember there is a margin requirement for placing this trade. With thinkorswim, the margin requirement or reduction of buying power is equal to the maximum potential loss on this trade. This amount is shown on the "ORDER CONFIRMATION" screen of the thinkorswim software and is calculated by subtracting the premium received from the distance between the strike prices of the widest spread. If you are using any other broker, check their margin requirement for this trade as it will most likely be more. In our example the margin requirement is $1.05 ($2.00 - .95) or $105 per spread.

13. Once you are done analyzing the trade and you decide to do the trade, you can click the "SEND TRADES TO ORDER QUEUE" where it will be ready for order placement.

14. The following is the dialogue to place the order by telephone:

    "Sell to open the DJX September 95/97/101/103 Iron Condor for a $0.95 credit ten times. That is sell ten DJX September 95/97 put spreads and sell ten DJX September 101/103 call spreads for a $0.95 credit."

Exit Criteria for Short Iron Condor Spreads

2. With the Short Iron Condor, it is usually best to let the position run to near expiration to let it make its maximum profit. But it may be prudent to close out the position before expiration if any of the following occur:

    a. If either the call vertical or put vertical is trading at a very cheap price, say $0.15 or less, it may be an opportunity to close it out. Stocks rarely move in one direction non-stop; they typically reverse after a move up or down. If the put or call vertical decreased in value substantially because the stock has moved away from the strike prices, it may be best to take that spread off before the stock begins to retrace that movement.

    b. If the long option in any spread is trading very cheaply, at say $0.05, do not close it out. Only buy back the short option. You will now own a long option that may become valuable should the stock make a dramatic move.

    c. If news is coming out such as an earnings announcement or economic or political new that could dramatically increase the overall market or the underlying's volatility it is usually wise to close the trade.

    d. It usually makes sense to close the entire trade whenever you can collect 80% of the potential profit. That is, if you sold an Iron Condor for $2.50 and can close it out for a $0.50 debit, you might want to do so. That takes the profit on the trade and prevents a winner from turning into a loser if the stock or index moves sharply. When the Iron Condor is so cheap, the extra profit you could make by holding onto it does not offset the risk of the position.

Long Calendar Spreads

Strategy Description: This is one of the basic spread positions that is used by traders of all experience levels and is a component of more complex spreads. Calendar spreads feature low capital requirements, zero margin, defined-risk, opportunities to collect premium from rolling short front month options forward, and wide profit ranges. Calendar spreads, also referred to as Time spreads or Horizontal spreads, can be positioned to speculate on market direction or as a market-neutral strategy that profits from time decay. The trader simply picks the strike price he or she believes the underlying will close at upon expiration of the near-term option and the trade profits when the underlying moves toward it.

Position Structure: A long Calendar spread is the simultaneous sale of a near (front) term call or put and the purchase of a far (back) term call or put of the same strike price. The long and short options in a Calendar spread are either both calls or puts.

Long Call Calendar: Short Sept. 50 Calls Long Oct. 50 Calls

Long Put Calendar: Short Sept. 45 Puts Long Oct. 45 Puts

The following table below will help you understand the value of a Calendar spread at expiration.

Sell to Close the Sep.-Oct. 50 Call Calendar Spread at September Expiration					
Stock Price	**Buy September 50 Calls**		**Sell October 50 Calls**		**Total Value**
	Intrinsic Value	Time Value	Intrinsic Value	Time Value	
40	0	0	0	.40	.40
45	0	0	0	.80	.80
50	**0**	**0**	**0**	**2.50**	**2.50**
55	-5	0	+ 5	.80	.80
60	-10	0	+10	.40	.40

Note the following:

- The time value of an option is the highest when it is at the money (50). Therefore, the Calendar spread is worth the most money when it closes at the money (50) of the near term short option.
- The Calendar spread will be worth the most money when the stock is at the same price of the strike selected (50) at expiration of the near term (Sept.). This is when the near term option expires and has no time value left and the far term (Oct.) is at the money with one full month left.
- It is worth approximately the same if the selected strike closes an equal distance in or out of the money. Note if the stock is at 45 or at 55 at expiration, the spread is worth the same (.80).
- To establish the profit range of the Calendar spread, determine how far away from the stock price one can be and still profit. If, in the example in the table above, we paid $0.80 for this Calendar spread we can see that we will profit if the stock is between 45 and 55 at expiration of the near term option.
- Since both options use the same strike price, any intrinsic value will be the same for both and will cancel each other out due to the fact that you are buying one option and selling another. This is shown above at the stock price of 55 and 60. You can only make money on time value, thus Calendar spreads are sometimes referred to as Time spreads.

Maximum Profit: The maximum profit is realized on a Calendar spread when the underlying price settles at the strike price of the short option at expiration. In that case, the front-month

option expires worthless, and the back-month long option has the greatest time (extrinsic) value because it is at the money. If the underlying price doesn't settle exactly at the strike price, any intrinsic value would be cancelled out because both options have the same strike price.

In the case where a Calendar spread is purchased where there is more than one month separating the short and long options, the profit of a Calendar spread can be augmented by "rolling" the short front-month option to the next expiration month for a credit. Rolling is the process of buying back the short options near expiration and reselling the same strike for the next expiration month. For example, if you buy a Sep/Dec call Calendar spread, there are two rolls "embedded" in the Calendar spread. You can roll the short Sep call to Oct, and later roll the short Oct call to Dec. The rolls have the greatest value when the underlying price is right at the strike price. That lets you sell the next month option for the greatest amount of time value. However, you can never be certain of the credit you will get for a roll, or even the amount you can receive for closing out an entire Calendar spread because you can only guess at the value of the long back-month option. The value of that back-month option depends on its implied volatility, which itself moves up and down. So, it is impossible to quantify precisely the maximum profit of a Calendar spread. However, by estimating what the implied volatility of the long back-month option might be, you can get a pretty close estimate of what the profit of the Calendar spread could be.

Maximum Loss: Calendar spreads are executed for debits, and the maximum loss on a Calendar spread is the original debit (cost) of putting on the trade, plus commission. This occurs when the underlying price is so far away from the strike price of the Calendar spread that the long back-month has $0 extrinsic value.

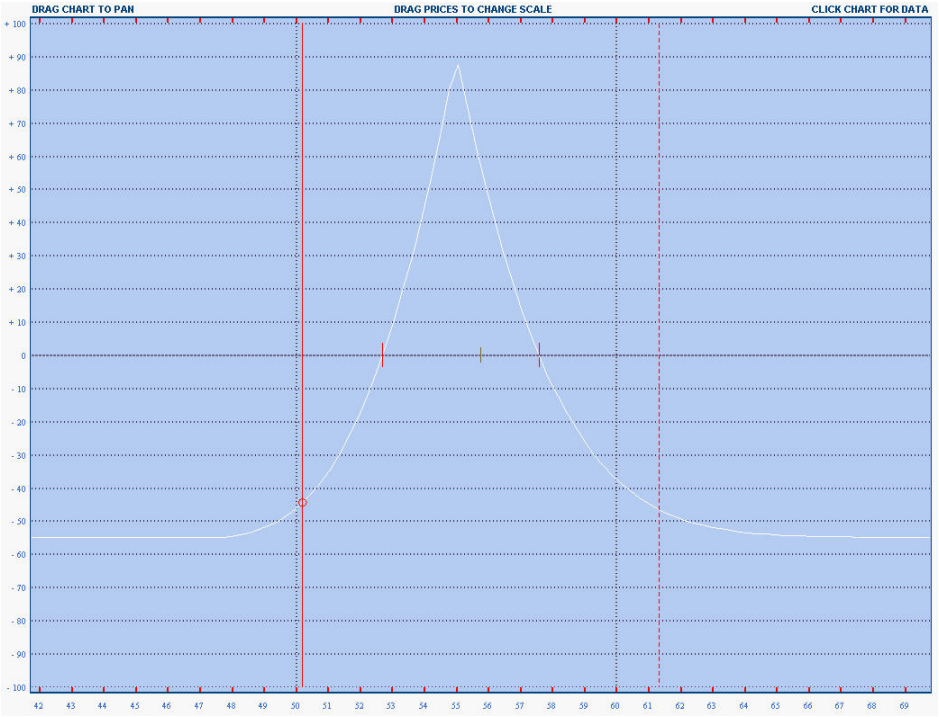
Break-even points: The break-even points of a Calendar spread are the points both above and below at which the option results in neither a profit nor a loss. This is hard to quantify as volatilities can and do change and usually an estimate is made based on implied volatility.

Capital Requirement: The capital requirement for a long Calendar spread is simply the net dollar value of the long option premium, less the short option premium plus commissions. That is, the debit of the Calendar spread plus commissions.

Candidates: This strategy can be used on a broad range of stocks and indices. The best candidates allow you to buy the long back-month option for a lower implied volatility than the short front-month option.

Execution: It is best to execute calendar spreads as one trade. The higher the deltas of the individual legs of the Calendar spread, the greater the likelihood that one side will "get away" from you before you have the entire position established. The result is a very poor execution price for the Calendar spread.

The following graph taken from the *Analyze Page – Plot Risk Profile* tab of the thinkorswim trading software shows the risk profile of the Calendar spread at expiration.



Long Calendar Spread Entrance Criteria:

11. The Calendar spreads with the best probability of making money have at least one roll embedded in them (that is, with a month in between the expiration months of the short and long options) and incorporate back-month options with implied volatility that is the same, lower, or not much higher than the front-month options. The lower the back month volatility is relative to the front month, the cheaper the Calendar spread.

12. The combined open interest of front-month options should be at least twenty times the number of Calendar spreads you want to do.

13. Select the expiration month of the near-term short option that gives you between 3 and 7 weeks from expiration.

14. The expiration month for the far-term long options will usually be the next available month after the expiration month of the near-term options, as dictated by its expiration cycle. Some traders, when using Calendar spreads on indices as an example, prefer to skip a month or two between the long and short options to give themselves roll opportunities (i.e. Sep/Nov or Sep/Dec). Having roll opportunities are beneficial when one feels the underlying price will stay near the selected strike for a longer period of time and when the options one to two strikes away from the one selected have a decent amount of time value in them. Otherwise one might be better off going month to month, employing Calendar spreads that have no roll opportunities. The advantage is the strike price selected can change from month to month.

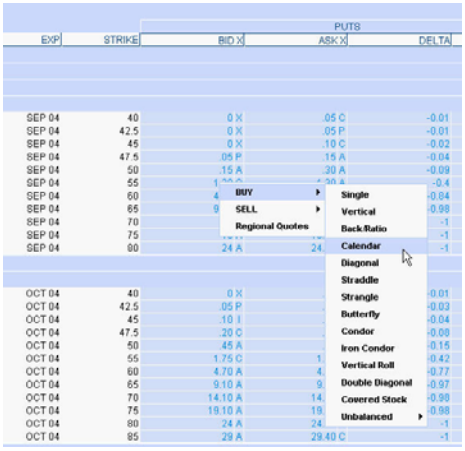
In our example we have selected the month of September for our near-term short option as it has approximately 5 weeks until expiration. The next available month for AMGN is October, which will be the month we will use for the far-term long options.

15. Pick the strike price of the Calendar spread by selecting the strike that is nearest to where you believe the stock will close at the expiration of the near-term short options.

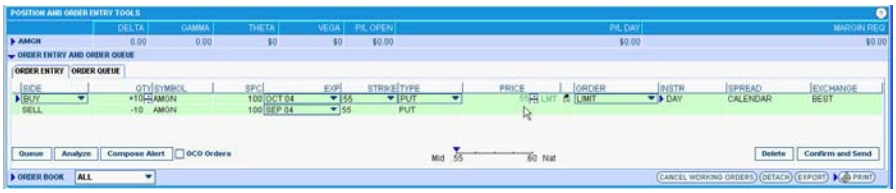
16. Choose puts if the strike you selected is below the current stock price and pick calls if the strike you selected is above the current stock price.

17. In the case where you are evaluating a Calendar spread with roll opportunities, check the value of the rolls (one-month Calendar spreads) for the strike of the Calendar spread, and for the two strikes above and below the strike of the Calendar. This will indicate how much credit you might receive when you roll the short front-month option forward if the underlying price stays where it is or moves up or down by a couple strikes. If the estimated value of the rolls embedded in the Calendar spread is close to or greater than the debit of the Calendar spread, you have a good candidate. That will give you a chance to recoup the cost of the Calendar spread through its rolls.

18. To execute the time spread as a package, go to the thinkorswim "TRADE" window, enter in the symbol and click enter on your keyboard. Then choose the month and click on the blue arrow to view the options. Choose the option's bid or ask price and right click on it. Then choose "BUY" and highlight and click on "CALENDAR".



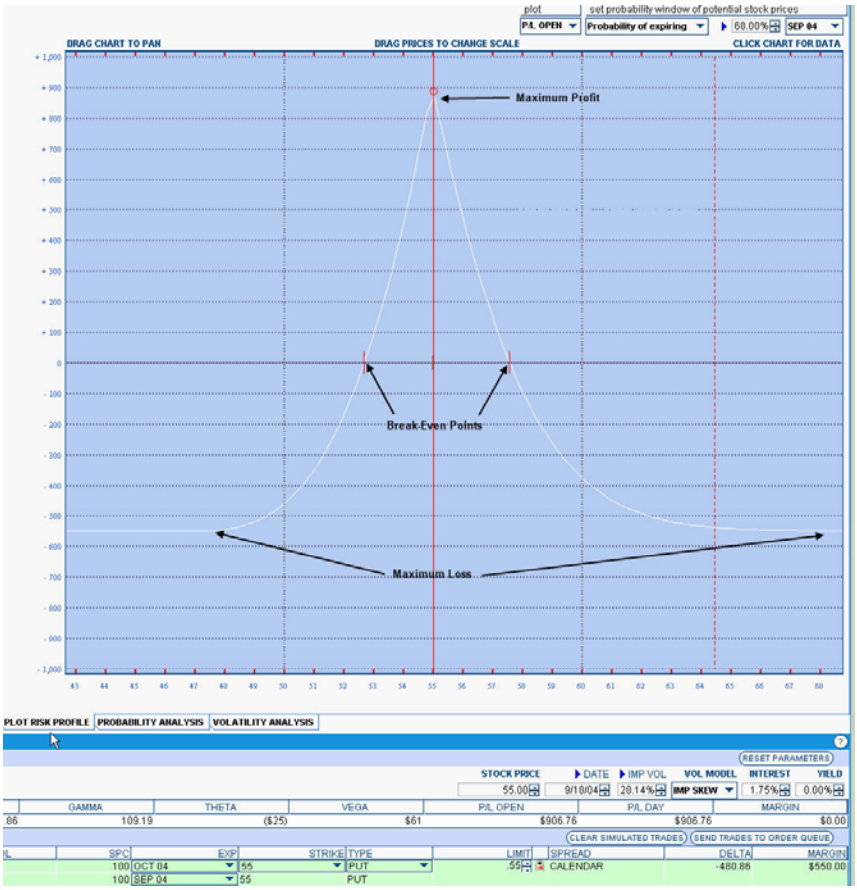
19. The trade will now be placed in the order entry screen. Notice the software has calculated adjusted mid price of the Calendar Spread in the "PRICE" column. This is the best price one could hope to fill on the trade. This is one of the few trades where you have some probability of filling at the adjusted mid price. Pit traders are sometimes willing to trade Calendar spreads for a very small edge to collect the extra time value in the far-term long options. If you don't fill at the adjusted mid price of the spread within a reasonable period of time, resubmit the trade at a nickel or dime above the adjusted mid price.



20. To determine the profit potential of the selected Calendar Spread, select the "Analyze" button at the bottom left corner of the "ORDER ENTRY" section of the software.

21. Select the "PLOT RISK PROFILE" tab and make the following settings:

    a. In the upper right hand corner of the screen, set the expiration month to that of the near-term short option (SEP).
    b. In the bottom left portion of the screen, set the stock price to the selected strike price of the Calendar spread (55).
    c. Change the "Date" to the day after expiration of the near-term short options.



From the resulting graph you will be able to determine the following:

    a. The estimated maximum profit that can be realized on the spread, should the stock close at the strike price selected at expiration. We see the maximum profit to be about $.85 or $85 per spread and $850 for ten spreads.

b. The estimated break-even points or profit window on the trade at expiration. In our example the break-even points are 52.75 and 57.75, giving us a $5.00 wide profit window.

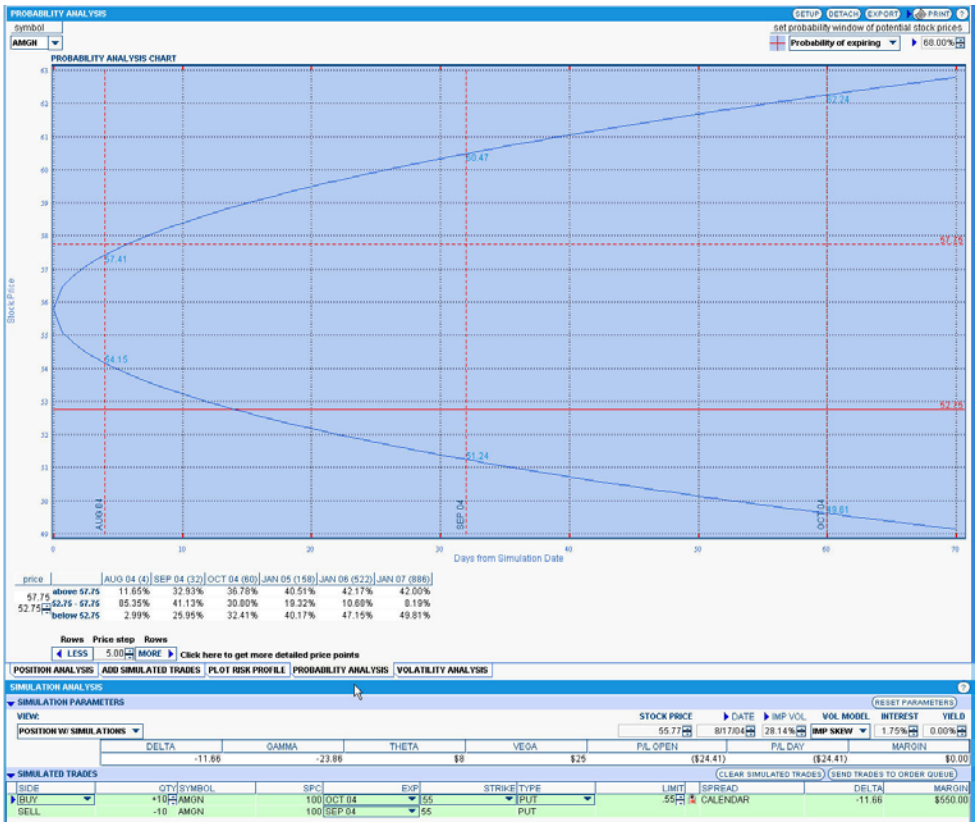
c. The estimated price where one would suffer the maximum loss.

22. Compare the maximum loss (the cost of the trade plus commissions) to the estimated maximum profit. The maximum profit should be at least equal to or greater than the cost of the trade.

    Maximum Profit ≥ Maximum Loss

    85 ≥ 55 (our example)

23. To determine the trade's probability of success, select the "Probability Analysis" tab on the ANALYZER page of the software and adjust the following:



a. Type in the upside (57.75) or downside (52.25) break-even price and set the "Price Step" to the distance between the upside and downside break-evens (5).

b. Make sure the date is set to the current date.

c. Looking at the row that indicates the break-even point, go to the column that represents the near-term option expiration (September) to get the probability of the underlying closing between the break-even points. This will give you the

probability of success on the trade. In our example the probability of the success by the September expiration is shown to be 41.13%.

24. If you are comfortable with the trade and would like to place the order, left click the "SEND TRADES TO ORDER QUEUE" button at the bottom of the ANALYZE page and submit the order.

25. Use the following dialogue to place the trade over the telephone:
"Buy to open the AMGN 55 Sep.-Oct. put Calendar Spread for a $0.55 debit, ten times. That is, buy ten AMGN October 55 puts and sell ten AMGN September 55 calls for a $0.55 debit."

Exit Criteria for Calendar Spreads

The following are some considerations for closing out Calendar spreads when the long option's expiration month is the next month beyond the short option's expiration.

A. Close the position should the value of the spread reach your loss exit point. A realistic loss exit point is about 50% of the amount paid. For example, if you paid $0.55 for the spread you might consider closing the trade when it could be sold for $0.30 and suffer a $0.25 loss.

B. Close the trade if the value of the spread reaches a realistic profit point. A realistic profit point for a Calendar spread is about twice the amount you are willing to lose. Therefore, in our example, if we are willing to lose $0.25, you should sell the trade if a profit of $0.50 above what you paid can be realized which would be $1.05 in this example.

C. Should news come out that you believe could cause the stock to move outside the break-even points, immediately close the trade.

D. Calendar spreads are worth the most when they are at the money at expiration of the near-term option. The closer to expiration and nearer the stock is to the strike price, the greater the profit. So, you should start to look to close the trade as you get into the last week to 10 days before expiration. That will let you avoid having a winning trade turn into a loser with a large move in the underlying close to expiration.

E. If you have not reached your profit or loss exit point by the expiration of the near-month option, close the position. If you don't you will be left with a naked long option that is subject to major price changes due to the underlying's price movement.

The following are some considerations for closing out Calendar spreads with roll opportunities, that is, there are one or more expiration months between the short and the long option's expiration.

A. The key for managing Calendar spreads with roll opportunities is getting as much credit as possible from the rolls. For example, if the front month expiration is September and the back month is November, you will look to buy back the short September options when the premium has decayed and sell the October (the roll), thus increasing the amount of premium received that reduces the risk of the trade.

The way to maximize that amount received from the rolls is to hold on to the short options as long as possible so they will decay as much as possible. But the longer you hold on to them, the more short the Calendar spread will become in gamma and the more sensitive it is to changes in the underlying price. That's why it makes sense to begin looking to buy the short front-month options back and sell out the same strike options in the next month starting, at about 10 days before expiration. Between 10 days away and 4 days away, you should look to roll the options unless there is a more pressing need to do so earlier.

One exception to this would be if the expiration month you want to roll the options to spikes in implied volatility, it could make sense to do the roll at that time. When the options you want to sell have a higher implied volatility than the options you need to buy, you will receive more credit than you ordinarily would.

B. Once you have rolled to the last month, always close the position on or before expiration of the short option. If you don't you will be left with a naked long option that is subject to major price changes due to the underlying's price movement and time decay.

The following considerations should be made if the short option goes in-the-money.

A. Should the time spread go ITM and there is little or no time value left in the near-term option you should close the position before you are assigned early. If the short option is trading for more than the difference between the underlying price and the strike price, it still has time value left in it. If there is little or no extrinsic value it is best to close the trade before you are assigned early. Even though early assignment will not create any more risk in the trade (you will be left with a synthetic long call or put), you will usually net more dollars by closing out the position before it happens. If you have a put Calendar spread and your short near-term put is early exercised, you will be assigned the stock. Your resulting position would be long stock (that you were assigned) and long a put (the remaining leg of your Calendar spread), which is a synthetic long call. If you have a call Calendar spread and your short near-term call is exercised, you are assigned a short stock position. Your resulting position will be short stock and long a call. This is a long synthetic put. If early assignment should happen and you are left in one of these positions, don't panic. Use the following steps:

B. **If you have a call time spread and your short call is early exercised** you will be left with short stock and long a call (synthetic put). There are three choices that can be made when in this position, each of which is covered below. If you do not have enough money to cover the margin requirement of the short stock, your broker will typically use step "a" or "b" below to close out the position.

1. Exercise the long calls. If there is not enough time value in the long calls to more than cover the commission cost for selling them, then simply exercise them. Exercising your right to buy the stock will cover the short stock position by buying back the stock at the same price you were assigned the short stock. Your loss on the trade will be equal to what you paid for the time spread plus commissions.

2. Buy the stock to cover the short sale and sell the long calls. This step should be taken to take advantage of any remaining time value in the calls. Say the stock was at 33 and the 30 calls were trading at $3.50, by buying the stock at 33 and selling the 30 calls for $3.50 you cover your short position and collect fifty cents more per share than you would have by merely exercising the calls.

3. Keep the short stock position with the long call as a hedge. Deposit money to cover the margin requirements of the short stock position and keep the long call as a hedge. If you have enough money in your account to satisfy the margin requirements, this will automatically happen. If this does happen and you do not want the short stock position, simply follow step "1" or "2" above to close out the position. The only reason to keep this position is if you believe the stock is going down as you will benefit from the short stock position. Regardless, you are never at any more risk than the original cost of the Calendar spread so long as you own the long call which insures that you can buy the stock back at the same price you went short. The position should be closed by buying back the stock and selling the call (provided it has any value) prior to the expiration of the long calls. If you wish to be short the stock beyond the term of the long call, another call should be purchased for a longer term. Most traders do not keep this position but choose "1" or "2" above and close out the position.

C. **If you have a put time spread and your short put is early** exercised you will be left with long stock and long put (synthetic call). You have three choices neither one can result in more than a loss greater than the cost of the trade. You must make one of the following choices the day after expiration, otherwise your broker will make the decision for you. If you do not have enough money to cover the margin requirement for the long stock your broker will typically use step "1" or "2" below to close out the position.

1. Exercise the long puts. If there is not enough time value in the long puts to more than cover the commission cost for selling them then simply exercise them. Exercising your right to sell the stock will cover close your long stock position by selling the stock at the same price you were assigned it. Your loss on the trade will be equal to what you paid for the time spread plus commissions.

2. Sell the stock and then sell the long puts. This step should be taken to take advantage of any remaining time value in the puts. Say the stock was at 27 and the 30 puts were trading at $3.50, by selling the stock at 27 and selling the 30 puts for $3.50 you close out the stock position and collect an extra fifty cents more per share than you would have by merely exercising the calls.

3. Deposit enough money to cover the margin requirements of the long stock position and keep the long put as a hedge. If you have enough money in your account to satisfy the margin requirements this will automatically happen. If this does happen and you do not want the short stock position, simply follow step "1" or "2" above to close out the position. The only reason to keep this position is if you believe the stock is going up as you will benefit from the long stock position. Regardless, you are never at any more risk than the original cost of the Calendar spread, so long as you own the long puts which insures that you can sell the stock at same price you paid for it. The position should be closed by selling the stock and selling the put (provided it has any value) prior to the expiration of the long puts. If you wish to keep the stock beyond the expiration of the long puts, another put should be purchased for a longer term in accordance with the criteria taught in the chapter on "Hedging Your Portfolio." Most traders do not keep this position, but choose "1" or "2" above and close out the position.

Long Double Diagonals and Straddle-Strangle Swaps

Strategy Description: Market-neutral, defined-risk position that profits from positive time decay (theta) as well as collecting credits from rolling short options forward (buy back the short front-month option before their expiration and sell the same strike calls and puts in a further expiration).

Position Structure: A Double Diagonal is the sale of a front-month (near tem) strangle and the purchase of a back-month (farther term) strangle with strikes wider than the front-month strangle. For example, Short Oct 85 put and short Oct 90 call and, long Dec 80 put and long Dec 95 call.

A Straddle-Strangle Swap is the sale of a front-month Straddle and the purchase of a back-month Strangle. For example, Short Oct 85 put and short Oct 85 call and, long Dec 80 put and long Dec 90 call.

The structure above is the net resulting position. In reality Double Diagonals and Straddle-Strangle Swaps are embedded strategies composed of call calendar and put calendar spreads, plus short calls and put verticals in the front month. The only difference between Double Diagonals and Straddle-Strangle Swaps is that the calendar spreads of the Straddle-Strangle Swaps are at the same strike, and for Double Diagonals they are at different strikes. See the example below:

Long Calendar Spreads:	Short Oct. 85 puts	Short Oct. 90 calls	(Short Strangle)
	~~Long Dec. 85 puts~~	~~Long Dec. 90 calls~~	
Short Vertical Spreads:	~~Short Dec. 85 puts~~	~~Short Dec. 90 calls~~	
	Long Dec. 80 puts	Long Dec. 90 calls	(Long Strangle)

Maximum Profit: The value of a Double Diagonal or Straddle-Strangle Swap is greatest when the underlying price is at a short strike at expiration, and after you have rolled the short front month options forward for credits. That way, the calendar spread embedded in the position will maximize its value, and the short verticals in the front month will have dropped in value. Because of the calendar spreads embedded in the Double Diagonal and Straddle-Strangle Swaps, you can't quantify their maximum profit specifically because you can't be certain what the implied volatility of the back-month options will be at the expiration of the front month. But like a calendar spread, you can estimate it by using current implied volatilities to value the back-month option at the front-month expiration. You can also estimate the amount of credit you can get for rolling the short front-month options.

Maximum Loss: The dollar value of the difference between the strikes of the short front-month call and long back-month call, or short front-month put and long back-month put, whichever is greater, plus any debit paid or minus any credit received when buying the Double Diagonal or Straddle-Strangle Swap, plus commissions. Maximum loss occurs if the underlying settles either lower than the strike price of the long back-month put or higher than the strike of the long back-month call.

Break-even points: The break-even points are very hard to quantify because Double Diagonals and Straddle-Strangle Swaps have at least one opportunity to roll the front-month options to the back month. However, the break-even points are always between the strike prices of the back month long call and long put.

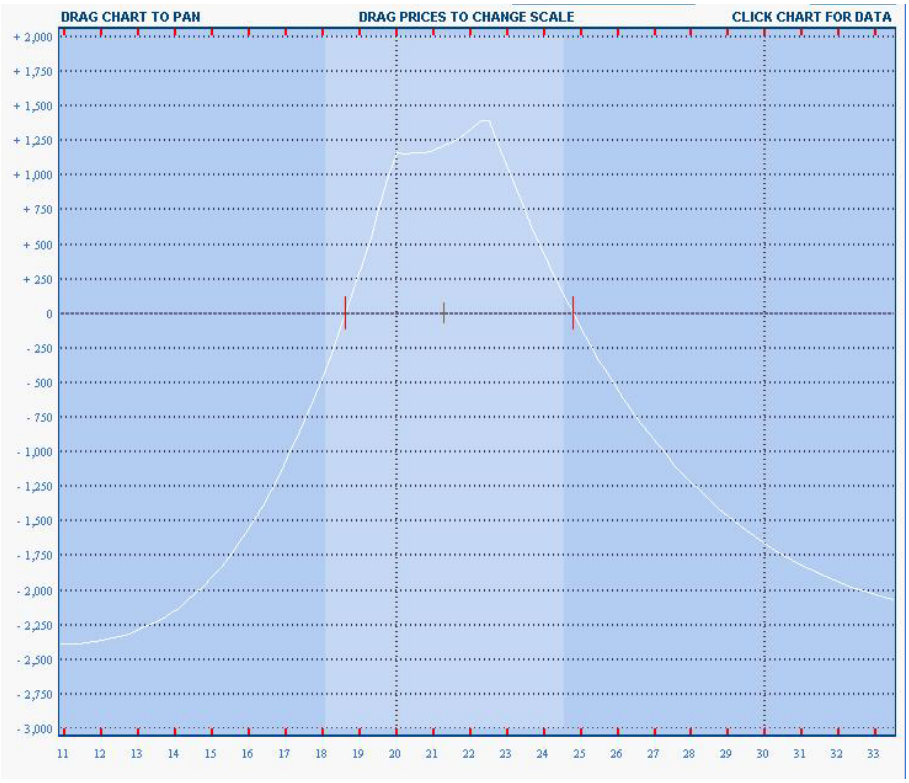
Capital Requirement: The amount of buying power necessary to trade a Double Diagonal or Straddle-Strangle Swap is the amount of the maximum loss on the entire position. The requirement is NOT the risk of both the embedded short call vertical and short put vertical. That is because, like for an Iron Condor, only one of the verticals can be a loser. For example, Sell Oct

85 put, sell Oct 90 call, buy Dec 80 put and buy Dec 95 call for $0.10 debit requires you to have $510 buying power in your account per spread.

Candidates: Double Diagonals and Straddle-Strangle Swaps are best used on range bound stocks or indices with 1.00 or 2.5 point increments between strikes, in order to keep the capital requirements lower.

Execution: It is best to execute Double Diagonals and Straddle-Strangle Swaps as one trade. Attempting to leg into the position via four individual calls and puts or via a straddle and strangle can expose you to significant execution risk. The likelihood of one side "getting away" from you before you have the entire position established is very high. The result can be a very poor price for the trade, resulting in sub-par profit potential and increased overall risk.

The following graph taken from the *Analyze Page – Plot Risk Profile* tab of the thinkorswim trading software shows risk profile of the Long Double Diagonal expiration.



Double Diagonal Entrance Criteria

1. You should begin your search for Double Diagonals and Straddle-Strangle Swaps in stocks and indices that have a tendency to settle at the same price from one expiration cycle to the next, and that have relatively small increments between strikes, say 1.00 or 2.50 points. The reason is that the capital requirements are based on the difference between the strikes. So, lower priced stocks and index products such as QQQ and MNX are candidates. You should also look for stocks and indices that have expiration months that would allow you to have at least two rolls. For example, if the front month expiration is September, you would look for a back month of at least November. The more potential rolls you have, the more credit you can take in to reduce the risk of the position.

2. Double Diagonals and Straddle-Strangle Swaps can be executed for debits or credits. The debit or credit of the trade depends on the amount of time between the expiration months of the short and long options, and the difference between the implied volatilities of the two months. The greater the time between the long and short options, the more expensive the Double Diagonal, but the greater the time, the more credits you can receive for rolling the short front-month options. Also, if the options you are buying have a lower implied volatility than the ones you are selling, they will make the Double Diagonals less expensive. But just because the back month implied volatility is the same or higher than the front month implied volatility doesn't mean you shouldn't do a Double Diagonal. If the lower front month implied volatility reflects lack of short-term movement in the stock, it can ultimately make the Double Diagonal profitable. The less the stock moves, the more credit you can collect when you roll the short front-month options forward. Ultimately, after all the rolls, the Double Diagonal will turn into an Iron Condor in the back month, and a Straddle-Strangle Swap will turn into an Iron Butterfly in the back month. The greater the credits collected from the rolls, the lower the risk and the higher the potential reward of those condors and butterflies.

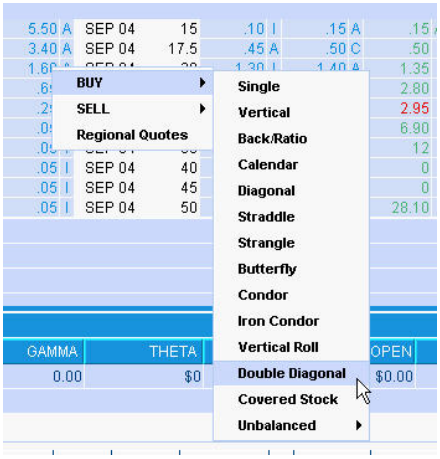
3. The combined open interest in all the options of the expiration month you're looking at should be 20 times your trading quantity. That will let you get a good execution price in both opening and closing the position.

4. Check the news for any upcoming events to make sure there aren't any reports or earning announcements that could increase the short-term volatility of the stock or index. Double Diagonals and Straddle-Strangle Swaps are long Vega, so an overall increase in implied volatilities benefits the position. But front month implied volatility rising faster or more than the implied volatility of the back month can hurt the position.

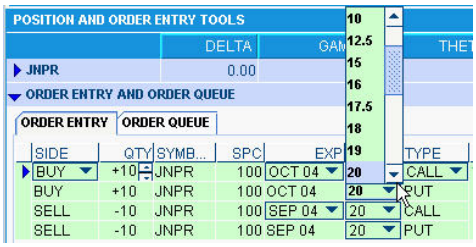
5. Pick the expiration month for your front-month short options that have between 3 and 6 weeks to expiration. You can use the next further month available in the expiration cycle for the back-month long options, but if you can get another month in between you will have an extra roll.

6. Check the potential value of the rolls if the stock moves up or down. The rolls are simply selling calendar spreads (buy front month option, sell back month option). What you're looking for is the credit you might receive when you want to buy the front-month short options back and short the next expiration month options at the same strike prices. Look at the one-month calendar spreads at the strikes you are shorting. Then look at the one-month calendar spreads at one and two-strike intervals away from the at-the-money. For example, if you are selling the 22.5 straddle, look at the 20 and 25 calendar spreads to see how much different they are from the 22.5 calendar spread. The greater the difference between the calendars at different strikes, the harder it will be to collect premium if the stock moves to those strikes. The way you use this information is that if the stock price is $22.5, the 22.5 calendar spread will have a value close to the 25 calendar spread if the stock drops to $20.

7. From the thinkorswim "TRADE" window, enter in the symbol and hit "ENTER" on the keyboard. Then choose the month and click on the blue arrow to view the options. Right click on the bid or ask price of a call or put near the anticipated trading range and select "BUY" then "Double Diagonal." (The menu does not list Straddle-Strangle Swap because it is a Double Diagonal where the short call and put share the same strike.)



8. The individual strike prices and expiration months that make up the Double Diagonal can now be selected in the "ORDER ENTRY" section of trading platform. Adjust the strike prices of the puts and the calls by left clicking the down arrow in the "STRIKE" section of the software.



9. Select the near term strikes that make up the Straddle or Strangle that you determined to sell in Step 6 above. Then select the far term long (BUY) options by selecting the next strike call above the near term short (SELL) call and the next strike put below the near term short (SELL) put.

Note: In cases where the underlying has $1 strike increments, evaluate the trade using the long options that are an additional $1 to $2 further out-of-the-money.

In our JNPR example, we are short (SELL) the September 20-22.50 Strangle and long (BUY) the October 17.50-25 wider Strangle.

10. Determine your bid price for the trade by giving up (slippage) from the adjusted mid price shown by the software as it is highly unlikely to fill at the mid price. Usually you will have to give up ten to fifteen cents. Left click on the up or down arrows in the "PRICE" column of the Order Entry screen to make the adjustment.

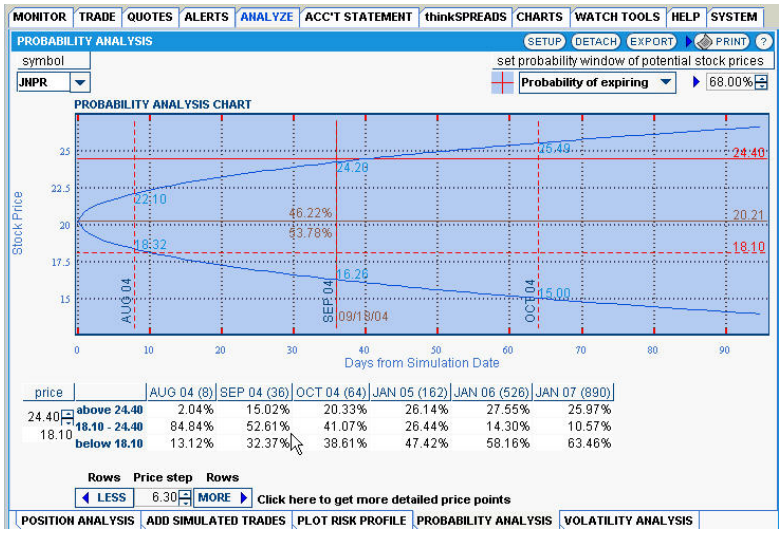
    In our example the software is showing us that the mid price of this trade is a $.60 credit. However, it is unlikely we can fill at this price and will have to give up (slippage) about $.10 to have a decent chance to fill on this trade. That means, we will adjust the price and place our order at a $0.50 credit.

11. Remember there is a margin requirement for placing this trade. With thinkorswim, the margin requirement and maximum potential loss on this trade are equal to the distance between the strike prices of the two calls or the two puts used in the trade, whichever one is the greatest, less any credit or plus any debit. If you are using any other broker, check their margin requirement for this trade as it will most likely be more.

    In our example the margin requirement and maximum potential loss is $2.00 (or $200 per spread). This was calculated by taking the distance between the widest spread, which in this case is $2.50 (the same for the 22.50 - 25 calls or the 17.50-20 puts), less the .50 credit we will receive for placing the trade.

12. To place this trade you want the probability of success to be at least 45%. You can determine the probability of success by selecting the "Analyze" button (below the "Order Entry" section), then do the following:

    a. Click on the "Probability Analysis" tab.
    b. Type in the upside or downside break-even point in the "price" section calculated in step 6.
    c. Type in the distance between the break even points (6.30) in the "Price step" box.
    d. You will note that the middle row now shows the break-even points (18.10 and 24.40)



You will note in our JNPR example, that the probability of the stock staying between the break even points by September expiration is 52.6%.

13. Once you are done analyzing the trade and you decide to do it, you can click the "SEND TRADES TO ORDER QUEUE" where it will be ready for order placement.

14. The combined open interest of all the options used in the Double Diagonal must be at least twenty times the number you would like to do. If not, do the trade smaller.

15. The following dialogue should be used if you wish to place the order by telephone:

    "Buy to open the JNPR October 17.50-25 Strangle and Sell the September 20-22.50 Strangle for a $0.55 credit, ten times."

Exit Criteria for Double Diagonal and Straddle-Strangle Swaps

3. The key for managing Double Diagonals and Straddle-Strangle Swaps is getting as much credit as possible from the rolls. The way to maximize that amount is to hold on to the short options as long as possible to let them decay as much as possible. But the longer you hold on to them, the more short you become in Gamma and the more sensitive they are to changes in the underlying price. That's why it makes sense to look to buy the short front-month options back and sell out the same strike options in the next month, starting at about 10 days before expiration. Between 10 days away and 4 days away, you should look to roll the options unless there is more pressing need to do so earlier. Some exceptions to this are as follows:

    a. If the expiration month you want to roll the options to spikes in implied volatility, it could make sense to do the roll at that time. When the options you want to sell have a higher implied volatility than the options you need to buy, you will receive more credit than you ordinarily would.

    b. If news is coming out such as an earnings announcement or economic or political news that could dramatically increase the overall market or the underlying's volatility, it is usually wise to close the trade.

Workshop Notes

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