Trading Implied Volatility Spikes with Iron Condors

Establishing consistent returns with acceptable risk

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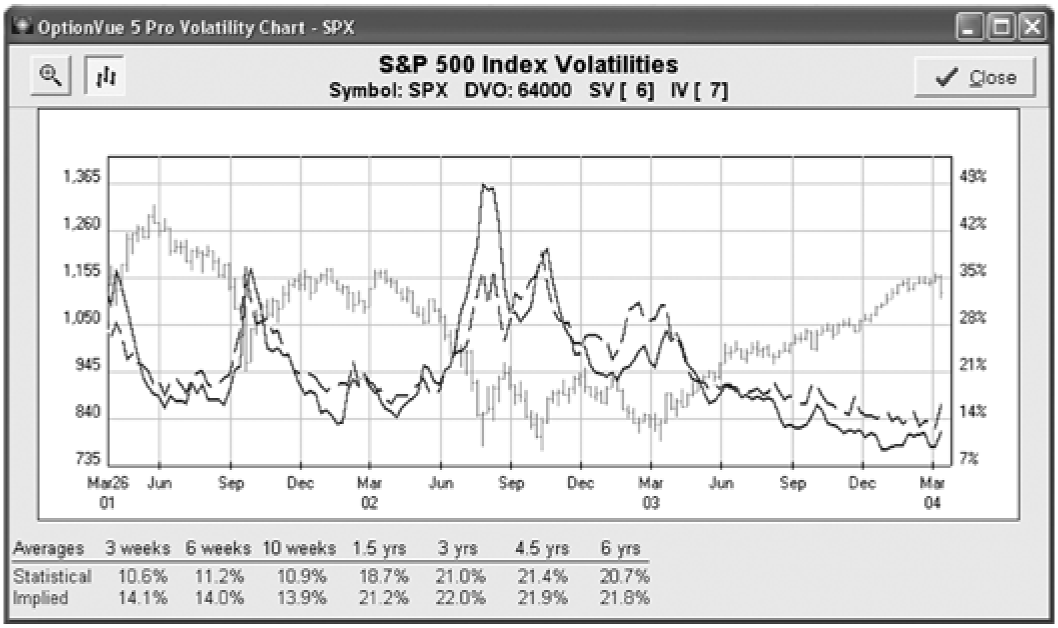
When explaining the principles of implied volatility (IV) to novice traders, I like to use the analogy that IV is the barometer measuring supply and demand for the available options, and can greatly affect their price. IV levels are dynamic and independent for each option as market fluctuations cause individual option prices to expand and contract over time. This holds true for all options whether they are on stocks, futures, commodities or indices.

Figure 1 displays a 2-year weekly chart of the SPX index's IV and SV (statistical volatility of the SPX index) with the price chart overlaid for reference. The solid line is a 20-day moving average of the SV while the dashed line represents the IV. By viewing the volatility chart we can determine many important items about volatility as it relates to the underlying security. We can see how volatility correlates with price movement, how IV and SV levels are relative to each other, the overall trend of volatility, and the overall level of both IV and SV in terms of a percentile ranking relative to the absolute range that volatilities have traded over the given course of time. The percentile rankings are indicated by the numbers in brackets on the second line at the top of the chart.



By taking a closer look at IV, we can see that it typically moves inversely to the price of the SPX index. (This does not hold true for all types of securities. Commo-dities, for example, have a tendency for price movement and volatility to directly correlate with one another). In addition, the trends are relatively smooth and lack exaggerated movement for the most part. Still, we can see many short-term peaks or "spikes" within the overall trend. These short-term spikes may provide tradable opportunities.

While there is plenty of truth in the old adage that "there are no guarantees in trading", there is at least one guarantee in options trading: There are going to be fewer days left until options expiration tomorrow than there are today.

That always being the case, you can leverage premium selling strategies to take advantage of the only guarantee in option trading, time decay (Theta).

By combining premium-selling strategies with the natural expansion and contraction of IV, high probability trades with very nice returns and limited risk can be constructed. When IV increases so do option values and the premiums received when selling them. This helps offset risk and increase returns.

The key to consistent success with premium-selling is to utilize a strategy that can create the desired return with a tolerable amount of risk. The iron condor can be a highly profitable premium-selling strategy that meets the risk tolerance of many traders and is scalable to virtually any size in many of the indices.
The iron condor takes advantage of time decay by selling both a call and a put. For protection, the options are purchased farther out of the money. This protection will reduce the cash taken in, but it will also limit your risk as your maximum potential loss is predetermined. Essentially, the strategy consists of a bear call spread along with a bull put spread. If it goes as planned, all options will expire worthless and the net difference of the premium sold and the lower cost of the protection will be kept.

The trade will enjoy positive time decay as long as the index's price remains between the expiration's break-even points. The trade can be adjusted relatively easily or can be closed while a new iron condor is opened with a better centered mid-point in the risk curves. If enough time has lapsed before a re-centering is necessary, the entire transaction may even be done at a profit.

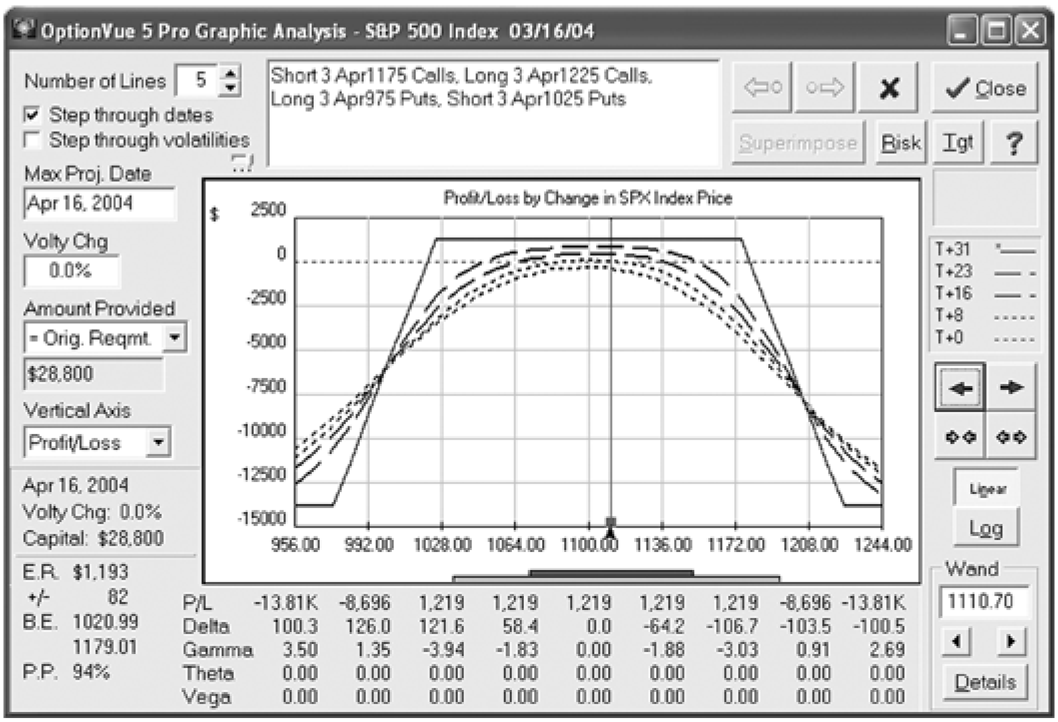
The iron condor's primary enemy is extreme price movement. So while this strategy can work for any underlying security, it works especially well with indices as they are not as prone to exaggerated price movement in the short-term. In the recent market, it is not uncommon for bad news to be released and a stock's value is cut in half over night. It is highly unlikely that an index will lose 50% of its value overnight.

Recognizing Opportunities

The recent pullback in the market (as of 3/16/2004) has brought a quick and significant move in the overall IV levels for the SPX index (as indicated in Figure 1). The average IV level has quickly snapped back towards the typically longer-term average from the extremely low levels that had been sustained over the previous several months. This sudden burst has brought the SPX option implied volatility back into a range that may yield some premium selling opportunities with advantageous risk/reward/ yield relationships.

The Trade

Our proposed trade was modeled in OptionVue 5 Professional v1.64 using the Cox/Ross/Rubenstein pricing model and "Hit Bid/Ask" slippage settings, after the market had closed. 28 days of IV and 20 days of SV were collected at the time of analysis (see Figure 2).



The iron condor consists of 2 short credit spreads (1 call and 1 put) that are 60-100 points out of the money. The maximum profit is achieved when the index remains between the short strikes of the credit spreads. The first (dark bar) and second (lighter bar) standard deviation of price movement using the current 20- day statistical volatility of 12.3 are indicated by the bars below the graph. Both the first and second standard deviations are almost entirely within the maximum profit area of this trade resulting in a 94% probability of profit (P.P. is shown in lower left of the graphic analysis window). The break-even points for this trade are 1021 on the low end and 1179 up high (shown above the P.P.). The market would have to break out to new highs for this year and surpass the highs of 2002 or sustain slightly more than an 8% drop over the next 4 weeks in order to move out of this zone.

Both the call and the put spreads are 50 points wide and carry $5000 (minus the credit taken in) of maximum risk. The example displays 3 Iron Condors consisting of the 1025/975 Bull Put Spread and the 1175/1225 Bear Call Spread collecting $4.20 per condor (Figure 3). Total risk is $15,000 minus the $1260 collected (not counting commissions). Depending on your broker, they may require margin for both sides or they may only require margin for one side of the condor, as both cannot be in-the- money at expiration. Therefore margin may be $30k or $15k minus the credit taken in for either case.

The expected return for the trade is $1138, which equates to either a 4% or 8% trade yield to the capital required (margin). The annualized return would be 47.5% or 98%, and the risk adjusted yield is 8% or 98% annualized, respectively.

Detailed Analysis - S&P 500 Index

Projected Date	Apr 16, 2004	Amount Provided	= Orig. Reqmt.
Price	1110.70		$28,800
Volty Change	0.0%		

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		Opening			Closing				
Pos	Series	At.Pr	Commis	Net	Th.Pr	At.Pr	Commis	Net	G/L
+3	Apr975 puts	2.20	15	(675)	0.00			0	(675)
-3	Apr1025 puts	4.20	15	1,245	0.00			0	1,245
-3	Apr1175 calls	2.70	15	795	0.00			0	795
+3	Apr1225 calls	0.50	15	(165)	0.00			0	(165)
									1,200

NET P/L		DAILY TIME EFFECT	
Total Capital G/L	+$1,200	From Option Positions	+$60.39
Cash Balance Interest	0	From Cash Balance	+0.62
Total P/L	+$1,200	Total Daily Time Effect	+$61.01
Yield	4.2%		

The trade has a positive daily time effect (theta) of about $61 in your favor and will increase as expiration draws nearer.

Risk

The risk to the trade is extreme movement of the SPX index (as can be seen in Figure 2). The trade will lose money if one of the short options is in-the-money by more than the premium taken in at expiration.

Additionally, the trade has negative gamma as indicated by the "upside down smile" of the time lines (risk curves) in the graphic analysis (Figure 2). Sudden moves away from the center of the condor may feel painful in the short-term even though the index remains within the maximum profit zone. As time decay takes its toll, the interim break-even points will widen and the trade will be less susceptible to the negative effects occurring from price movement.

Adjustments

If extreme movement occurs, proper adjustment may require the entire condor to be closed and reopened with a new center-point. Adding both short and long butterflies can shift the center-point of the iron condor if a less extreme adjustment is necessary. To shift the center point downward, the call butterfly can be sold while the put butterfly is purchased. To shift the center point upward, the put butterfly would be sold and the call butterfly would be purchased.

Options	APR04 <31>		
1250 calls	0.45	-3	+3
1225 calls	0.96		
1175 calls	3.88	+6	-3
1150 calls	7.97		
1125 calls	15.34	-3	
1120 calls	17.40		
1110 calls	22.06		
1100 calls>	27.55		
1090 calls	33.55		
1040 puts	6.17		
1030 puts	5.24		
1025 puts	4.79	+3	-3
1010 puts	3.94		
975 puts	2.50	-6	+3
950 puts	1.87		
925 puts	1.46	+3	

Options	APR04 <31>	
1250 calls	0.46	
1225 calls	0.97	
1175 calls	3.90	+3
1150 calls	7.99	
1125 calls	15.35	-3
1120 calls	17.41	
1110 calls	22.07	
1100 calls>	27.56	
1090 calls	33.55	
1040 puts	6.18	
1030 puts	5.24	
1025 puts	4.79	
1010 puts	3.95	
975 puts	2.51	-3
950 puts	1.87	
925 puts	1.47	+3

The strikes may have to be offset to avoid opening additional contracts from the butterfly that is being sold as indicated by the short 1125/1175/1250 call butterfly. However, equidistant butterflies may be used on both sides if you are comfortable with the additional risk that will be created. Figure 4 displays the adjustment along with the resulting position using butterflies. (The example shown was prepared at the time the trade was entered and therefore the prices on the left are not representative of the prices that would be available when the adjustment is necessary. The example displays the adjustment at the same index price and date as when the trade was initiated and is only intended to show the process of the adjustment.)

The Payoff

If all goes as intended, all options will expire worthless and the premium collected will be kept as profit. If the underlying security continues to trade in a "normal" oscillating fashion after the trade is initiated, the iron condor will benefit from the time decay and may be able to be closed at a profit shortly thereafter. I have never known a trader to go broke from booking profits!