

Delta Neutral

Trading without predicting market direction

In this paper I will briefly explain the concept of selling options as a non-directional way of trading, I will explain the concepts of time decay, delta and delta neutral trading, and describe the "Iron Condor" - a delta neutral trading strategy. Trading non-directional: There are many strategies a trader can pursue which are non-directional. Selling out of the money options is one way of trading without predicting where the market is heading. Without getting into too many details, an option premium is a combination of intrinsic value (a mathematical calculation of how deep it is in the money) and extrinsic value (time value). An out of the money option has no intrinsic value and its premium is greatly affected by the amount of time left to expiration. Every day that goes by an option loses time value. On expiration, if the underlying market did not reach the option strike price, the option will expire worthless, having no intrinsic value and no time value left. The process of an option losing time value is called time decay. Time decay is beneficial to option sellers and detrimental to option buyers.

If you are an option seller you are already familiar with the advantages of time decay as a factor in non-directional trading.

There are many occasions where the market moves adversely to your position, but your trade still ends up a winning one because the passage of time eroded the value of the option. Let us take a quick look at how this is possible. On September 4th, 2020, the December S&P500 Futures contract settled at 3407. Let us assume that at the

while constructing a call credit spread, which provides us with limited, pre-determined risk. One month later with the market at roughly the same level, the spread is only worth \$1050. Time decay has set in.

There are 50 ways to leave your lover but only 5 ways the market can move. 1) The market can stay range bound and trade between 3257 and 3557. 2) Enter a slow bearish trend reaching, at expiration, the 3150 level, 3) Enter a strong bearish trend expiring well below the 3000 level. 4) Enter a slow bullish trend expiring at the 3650 level. 5) Enter a strong bullish trend expiring above 3800. As the seller of this spread you may profit in four out of the five possible scenarios at expiration. Only a strong bullish trend, which will bring the underlying market well past your short option strike price at expiration, will turn this spread into a losing one. Any of the other four scenarios will make your trade a winner at expiration. The challenge for option sellers arises if the market indeed enters a strong trend adverse to your position. But what if you could trade in such a way that would minimize your dependency on market moves? Delta Neutral trading is exactly that. Indeed, in any system of trading there is some consideration, as small as it may be, to direction. Delta Neutral, while indeed influenced by quick moves or gapping markets, attempts to minimize the effect of such market movement on your position and focuses on benefiting mostly from the one factor all option sellers seek - time decay. **What is Delta? In simple words, Delta is the measure of change in an option** value because of a move in the underlying market. Delta is measured from 0.0 to 1.0 and from 0.0 to -1.0. Short calls have negative delta (-) and short puts have positive delta (+). If you sell 1 S&P 500 call and the delta on your position is -0.5, your option should gain 0.5(\$125) on a 1 point move up of the S&P future contract and should lose the same on a 1 point move down of the

S&P. If the delta on the position is 1.0, the option should gain 1 point (\$250) for a 1 point move up and should lose the same on a 1 point move down. A negative delta (-0.5 or -1.0) simply mirrors the above. An at-the-money short call option (an option strike price at the same level of the underlying market) has a value of $D-0.5$ and an at-the-money short put option has a value of $D+0.5$. The further an option is in-the-money the higher the delta is, therefore, the change in premium because of a market move will be greater. The further away an option strike price is (out-of-the money) the lower the delta is and the smaller the market influence on its premium. It is also worthwhile noting that delta is influenced by the time left to expiration. What is Delta Neutral: Delta Neutral traders seek to position themselves in such a way where the Delta on a given position is 0.0 or close to it. It is easy to see the logic and appeal of Delta Neutral trading. If your Delta is 0.0 your position will not gain nor lose because of small market movements. This leaves the stage entirely open to the passage of time - time decay, to take its course and erode the option value - the goal of all option sellers. The Iron Condor: Let us see how we can apply theory to trading. The "Iron Condor" is a Delta Neutral strategy often used by option sellers who write options on the S&P500.

The Iron Condor is a combination of two spreads. Selling (or buying) a call spread above the market and a put spread below the market creates the Iron Condor, The strategy draws its name from the resemblance to the majestic bird, as it would spread its wings wide open. It is particularly important, in my opinion, not to "leg" into an Iron Condor but rather place the order as one package (selling the call spread and the put spread at the same time). Remember, we are not trying to trade directionally and legging into one side first is trading directionally, if even for only a minute or two. Adjusting an Iron Condor: At the heart of Delta Neutral trading is the adjustment process. When the market moves and the position's

delta inevitably becomes unbalanced, an adjustment needs to be made to bring the position back to equilibrium and the delta back to neutral. Clearly, since the market is rarely unchanged at the end of a trading session, and due to time decay influence, the delta on any given position changes each day and is almost never completely neutral; Delta Neutral traders do not adjust their position every day. Rather, an acceptable range of delta is determined, or a predetermined range in which the underlying market can trade. Only once these levels are violated, an adjustment will take place. Let us examine a scenario where a gradual bullish trend is developing. As the market moves up the delta of the calls becomes closer to 0.5 as the market nears the short call strike price. The delta of the puts, on the other hand, becomes closer to 0.0 as they become further out-of-the money options. This will be manifested in call premiums gaining gradually more and more on a move up and put premium deflating less and less on the same move up. If no steps are taken to bring back the balance, the delta on the puts will become so small, a move up in the underlying market will result in nothing but a minute change to the put premium. There are several corrective steps a trader can make to bring back symmetry to the trade. I will briefly note three possible adjustments.

1) Selling more options: Selling more put options and bringing more put premium into the equation will balance the delta. Some traders like to add on to the existing puts while others prefer replacing the existing put spreads that lost most of their value.

2) Narrowing the spread: Making the call spread narrower will result in more balance to the Iron Condor. This occurs by bringing the long option with positive delta closer to the short option with the negative delta, which in turn lowers the overall delta of the

spread. Here too, there are two ways to act. The first, "narrowing from the bottom", buying back the short option and selling a new call option a little farther out of the money. The second, "narrowing from the top", selling the long call we own and buying a new call closer to the money.

3) Rolling the spread: Closing the call spread and selling the same spread or a spread at a higher strike in a farther out month. Since the delta increases as we near expiration and decreases as we go farther out in time, rolling the spread out in time will result in lower delta. Conclusion: Many traders adopt non-directional trading approaches - trading with little regard to market direction. Selling options and, specifically, constructing Delta Neutral option writing strategies such as the iron Condor allows traders to be less subjected to market direction influence as they focus on the advantages of time decay. The greatest challenge facing option sellers who use Delta Neutral principals, might very well be the adjusting phase. Generally, this separates the professional from the amateur. All traders do well when the market is moving in their favor. But when it is not, knowing how and when to adjust is pivotal to success. Traders who implement the Iron Condor, concentrate on keeping the overall position in a Delta Neutral range, thus allowing time decay to prevail as they inevitably near expiration.

There is risk of loss trading futures and options. Past performance does not necessarily indicate future results. Trade with risk capital only