

[Time / Diagonal Spreads](#)

Time spread and its reaction to increasing volatility

The chart below shows a time spread and its reaction to increasing volatility. As you can see, each time implied volatility increases, the value of the time spreads increase. This increase would naturally favor the buyer.

Chart 4			
Stock Price	Vol.	June / July 65	October / July 65
65.5	30	1.09	2.09
65.5	40	1.43	2.75
65.5	50	1.77	3.41
65.5	60	2.11	4.05
65.5	70	2.49	4.60

As you can see, if an investor bought the time spread at low volatility and within a few weeks volatility had increased and pushed the spread price higher, the investor could sell the spread at a profit even before expiration.

Of course, the vega can also demonstrate the opposing effect. As implied volatility decreases, the spread tightens or decreases in value. As volatility comes down, the out-month option with its higher vega will lose value more quickly than will the nearer month option with its lower vega. In the chart below, you will see how the time spread's value is affected by decreasing volatility

Chart 5			
Stock Price	Vol.	June / July 65	October / July 65
65.5	70	2.49	4.60
65.5	60	2.11	4.05
65.5	50	1.77	3.41
65.5	40	1.43	2.75
65.5	30	1.09	2.09

Glance back to Charts 4 and 5. Take note that the stock price is constant. The changes in the price of the spreads are due to the change in volatility.

We discussed how to use vega to calculate an option's price when volatility changes. The same calculation method works for time spreads but the calculation is slightly more difficult.

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