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## Commission Rates Comparison

	\$300K	Equity Trades	Options <sup>1</sup> Base per contract
<input checked="" type="radio"/> <b>Interactive Brokers<sup>2</sup></b>	<b>3.08%<sup>3</sup></b>	<b>\$2.31</b>	<b>no base cost</b> <b>\$0.68</b> per contract <sup>4</sup>
<input type="radio"/> <b>E-Trade</b>	8.50%	\$6.95	\$6.95 base + \$0.75 per contract
<input type="radio"/> <b>Fidelity</b>	7.57%	\$4.95	\$4.95 base + \$0.65 per contract
<input type="radio"/> <b>Schwab</b>	7.57%	\$4.95	\$4.95 base + \$0.65 per contract
<input type="radio"/> <b>TD Ameritrade</b>	8.25%	\$6.95	\$6.95 base + \$0.75 per contract

Each firm's information reflects the standard online trades pricing obtained from the respective firm's websites as of 9/10/18. Pricing and offers subject to change without notice.

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*What You See Vs. What You Get*

# The Options Risk Curve

## Part 2

*Your beautiful risk curve didn't provide you with the beautiful profits it seemed to promise on day one. Why? We asked the experts. In part 1, we covered nine of those 12 reasons. Here, we look at the next three.*

*by John A. Sarkett*

recap from part 1, our options experts gave the following nine reasons for not seeing the profits you expected:

1. Options are more like quantum physics than classical physics.
2. The map is not the territory. The risk curve is merely a theoretical model.
3. Vega—implied volatility—will make or break you.
4. Supply & demand are the final arbiters of options value, not risk curves.
5. Your options may not mirror the VIX.
6. Market-wide risk is always lurking in the background,



## OPTIONS

even in today's ever-upward market. A "volatility eruption" has the same effect as extending days to expiration (DTE). The opposite is true as well: a "vol crush" is the same as shortening DTE.

7. Theta expectation is more reliable early in a position versus late.
8. Then there's the little matter of execution. If you pay too much, it will affect the P/L of your risk curve.
9. There is also anomaly weekend pricing. Neophyte options sellers think it's a great idea to sell on Friday and collect theta over the weekend. But in reality, market makers mark down options in advance of the weekend. Translation: There is no free lunch.

Here are the last three considerations in our list of 12 reasons you may not be seeing the profits you expected in your options position:

### 10. Theta is not linear!

If you could isolate theta, as scientists do with chemicals in a lab, and follow it along, you would expect theta to be mathematical, precise, and ever-accruing; like an hourglass, dispensing not sand but cash, equally, every second. Stan Freifeld of McMillan Analysis Corporation explains: "Theta is actually a continuous derivative product (partial derivative of options premium relative to time) and it's being used in a discrete manner. Let me explain what I mean. Assume a stock price of \$50 and let's examine the 50 call with one day to go, IV=40% and risk-free rate = 1%. The premium is equal to 0.42 and the theta = -0.20. Well, you would think that theta should be -0.42, since at the end of the day the value of the call will be zero, assuming the price remains at 50. But the theta of -0.20 is correct.

"Let's break the day into, say, 10 parts. During the first 1/10th of a day, the 0.42 premium will decay by 1/10th of 0.20 or 0.02 to 0.40 (0.42-0.02). During the second 10th of the day, theta will increase to -0.22 and so the premium will decay by 1/10th of that or 0.022 to 0.378. This will continue to happen as we approach expiration; premium decreases and theta increases. Just before expiration, the premium will be very small and theta will be high and they will cancel out to zero.

"The same thing is happening when the time to expiration is greater than one day, but because it's a small difference, it usually isn't too important or noticed."

What is noticed, then, across the life of an option, assuming that lifespan is days or weeks, is the "lumpiness" of theta, versus the anticipated smoothness of an hourglass, if you will, which may actually be caused by other greeks.

Another market mentor, Mark Sebastian of Option Pit, puts it simply: "Theta is *not* linear! Why? The issue is it is hard to isolate theta because 99% of the time, other greeks are in play and change prices—and decay."

**11. At-the-money (ATM) and out-of-the-money (OTM) options manifest differential volatility. As a result, they**

**can decay at different rates (ATMs are typically faster-decaying), which standard risk curves do not illustrate.**

Sebastian writes: "When I first began mentoring options traders, one thing struck me: the insistence that theta is nonlinear and that almost all of an options decay took place inside the final 30 days of its life. This statement is only half true. We have all seen the options decay chart. It's a chart that shows options decay sloping downward in the final 30 days of its life, with the decay getting greater and greater each day.

"There is only one problem: This chart only applies to a very small portion of options, that is, to ATM options. While it is true theta is nonlinear in the rate of decay, the actual price points where the theta is at its highest is also nonlinear. While decay continues to increase for all strikes, the rapid acceleration doesn't happen on the outer strikes. The at-the-moneys (ATMs) lose faster."

Tom Nunamaker cited this phenomenon as well but sees it differently. He says, "One reason that risk curve reality and real market reality vary could be that out-of-the-money and in-the-money options have a different decay rate than at-the-money. The farther from the spot price, the more the time decay happens farther out in time. In our Road Trip Trades, for instance, the far-OTM options decay much faster.

"It makes sense as an option that is five sigma (standard deviations) from the market a week before expiration is essentially already at zero time premium. As some options sage once said, "Volatility is time and time is volatility." If you increase one and keep everything else constant, it has the same effect as if you allow a different variable to change and keep all other variables constant."

His aeromir.com partner and noted options income strategist Dan Harvey agrees: "The answer lies in the differential volatility of the front and back options. Often, *the front option doesn't show the expected theta decay even while the volatility and price of the back option are decreasing*. Theta is not a major factor in time spreads for this reason. This is especially evident in diagonal spreads in which the theta may be negligible but a moderate-to-large move in the 'right' direction will generate a significant profit, while the converse is true for a move in the 'wrong' direction. Call diagonal spreads have been called 'covered calls on steroids' for this reason. If the underlying moves down sharply, the back-leg volatility and price are crushed, and the trade usually 'blows up' from this juncture.



### 12. News events override risk curves.

Dan Harvey continues: "Also, supply/demand forces, particularly centered around earnings or news events, definitely affect the pricing structure. This phenomenon is even more evident in today's algo/HFT markets. If the 'big boy' firms are bullish on a stock near earnings, the premium won't leave the ATM or near-the-money strike until very shortly before expiration because they may be doubling down on their bets. The back-leg strike may lose money quickly, however, since its volatility will collapse

## Change in profit potential is as much a part of the game as bid & ask, implied volatility, and yes, theta itself.

after the earnings event or news event is announced whether or not the earnings release result was as expected.”

So how do you capitalize on these 12 points when considering decay-capturing strategies? Here are five takeaways:

- **Trade calendars with care or avoid altogether.** As a result, with the deck stacked in the way I described earlier, Dan Harvey says he is not a fan of time spreads. They are much more complicated than is generally viewed (with them generally being viewed as “sell this, buy this, boom, make money”—except it isn’t that simple)! His preferred vehicle is the so-called “Road Trip Trade,” which I wrote about in my February 2017 S&C article, “A Road Trip With Options Supertraders.”
- **Trade short weekly condors with care or avoid altogether.** ATM rapid decay is also a reason to *not* do a common and popular trade, Mark Sebastian says, “It is also a reason *not* to be short weekly condors. While the likelihood of being hit is low, the need of the trader to stay in the trade too close to or through expiration makes the risk/reward very suspect.”
- **Consider butterflies that are closer to expiration versus farther.** Mark Sebastian says: “Butterflies may perform better closer to expiration instead of further out. This could explain the success of weekly butterflies beyond that of the simple pin (meaning expiration at the short strike middle). The butterfly holder is long the cheap

option that has a slow demise and short two options that are quickly losing their value when at-the-money. It is taking advantage of theta convergence.”

- **Take profits when targets are hit.** If a short-option, long-theta trader achieves a profit, especially early in a position, he should consider taking it instead of holding out for more. That “more” may turn out to be “less,” especially if volatility moves against him. This is the eternal ebb and flow of the market. Bulls can make money, bears can make money, but you know what they say about pigs.
- **And, finally, lower your expectations vis-à-vis that highly optimistic risk curve.** It is a picture, and a picture, by definition, is static. It shows your position at one instant in time—*this* instant (see the sidebar “The Calendar Spread: An Options Trader Staple” and sidebar Figure 1 for an explanation and example of a calendar spread risk curve). In another second, minute, hour, or day, it can and does change, and may or may not conform to rules (such as ATMs decay faster or OTMs decay faster and so on). As changes occur in market sentiment and in supply & demand, and as the changes are expressed in the options greeks themselves, especially vega, your risk curve will change. Sometimes it will change rather dramatically; sometimes for better, often for worse. There are always reasons for the change in the curve, whether or not they can be easily discerned.

### ADAPT TO CHANGE

Buddha said something like, “Change is the stuff life is made out of.” So, too, with options. Change in profit potential is as much a part of the game as bid & ask, implied volatility, and yes, theta itself.

He was for some the ultimate guru, but would Buddha have been a great options trader? Maybe yes, maybe no, but I am thinking as we close this two-part article series that his equanimity in the face of so much change would have been

### THE CALENDAR SPREAD: AN OPTIONS TRADER STAPLE

Say you’re short a near option and are long a farther-out option. While it may be a mainstay strategy for many income traders, the calendar has two ways to go awry vis-à-vis the risk curve that you saw on day one: 1) lack of price decay on the short, early option, and 2) excessive price decline on the back end, often caused by a volatility crush. Instead of the calendar being worth more, as time goes on, the prices of the short and long options converge, and it can stay flat or even decline. The risk curve does not and cannot show you these potentialities on day one. In that sense, some believe the risk curve is misleading.

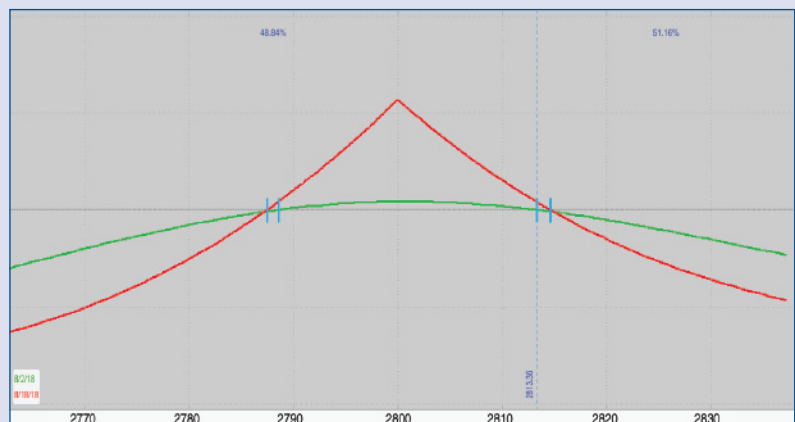


FIGURE 1: EXAMPLE RISK CURVE

unparalleled. It's an essential asset that you surely need a lot of when trading options. Why? Because all the variables and other things described here and last month in part 1 are always affecting your options—they keep changing, moment by moment, all the time, right up to and through expiration. This means that what your risk curve told you earlier you'd be getting may not be the case at all.

*John A. Sarkett has written for STOCKS & COMMODITIES since 1995. He is also the author of Option Wizards: Real Life Success Stories From The Financial Markets, and Market Mentors, volumes found on Amazon.com and at <http://option-wizard.com>.*

#### FURTHER READING

Sarkett, John A. [2017]. "A Road Trip With Options Super-traders," *Technical Analysis of STOCKS & COMMODITIES*, Volume 35: February.

—— [2018]. "The Options Risk Curve, Part 1," *Technical Analysis of STOCKS & COMMODITIES*, Volume 36: November.



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