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Random musings for traders at TD Ameritrade—SPRING 2020

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Have a strategy for narrowing down your alternatives so you can focus on a handful of symbols.

How to Build a Trade: Hard Hat Optional
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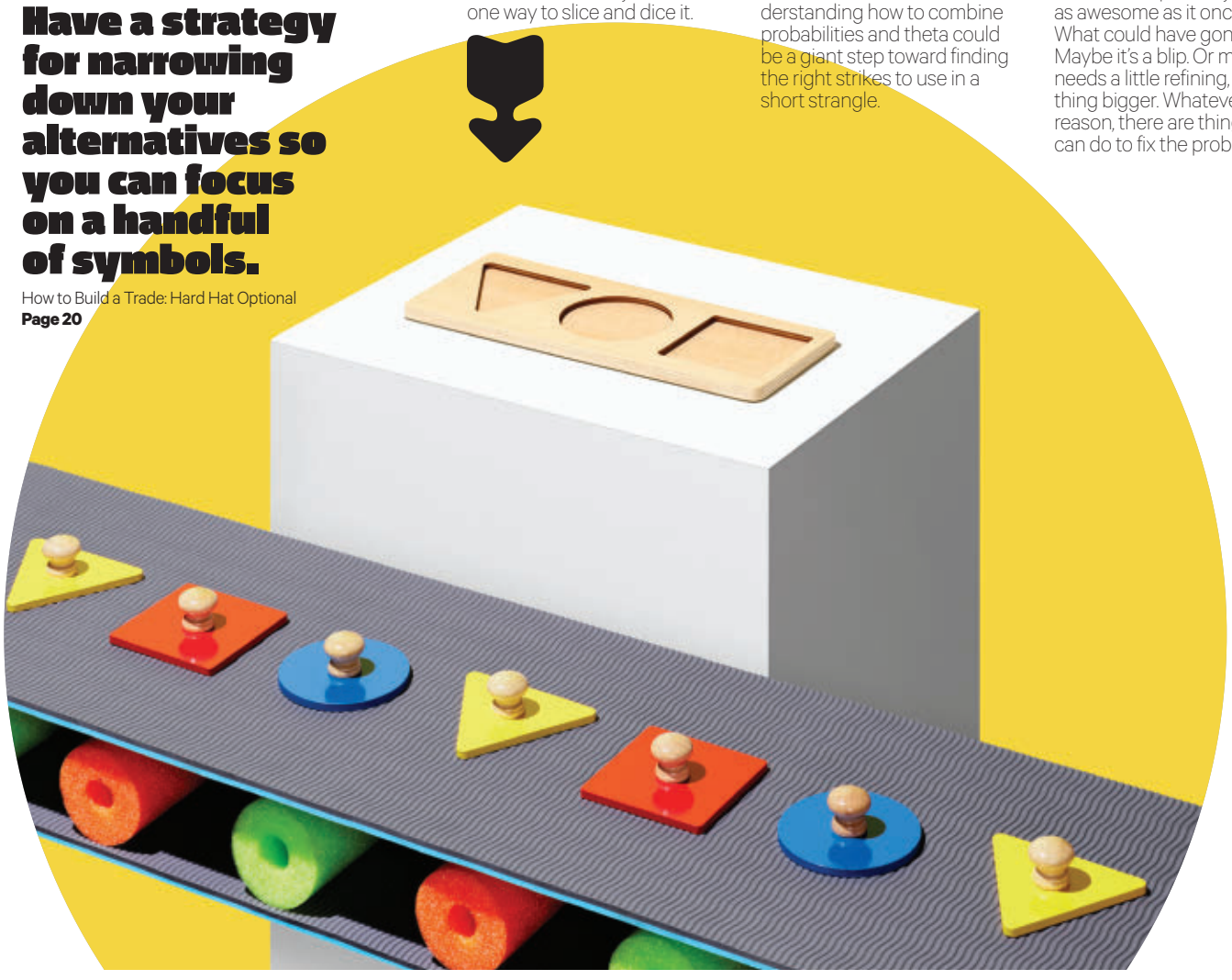

"There's nothing stopping the U.S. Federal Reserve from setting negative fed funds rates. It's not likely, but it's possible."

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SHARE THE LOVE—Ask a question, tell us a joke, or just give us your feedback on *thinkMoney*. Write to us at **thinkmoney@tdameritrade.com**

It's Part of the Game

• SOMETIMES WHEN STOCKS are moving the same way day after day and volatility is just hanging out at below-average levels, your trading may feel a bit—shall we say—predictable.

But then one day things stop lining up. Systems fail without much warning. Maybe it's a political event, a virus outbreak, or a natural disaster. Stuff like this changes moods, regardless of the fundamentals, and it reminds you that volatility happens. Sharp, emotional reactions increase volatility (vol), which increases risk. As traders, we should be ready to embrace volatility and higher-risk environments. It doesn't mean you're immune to risk. But you should be aware of how risk can impact your positions and overall portfolio.

When the market moves quickly and sharply, it's natural to get hung up trying to figure out which positions are losing the most. But there's more to risk than just looking at profit and loss. As an option trader, you're used to vol moving around a lot. You can see it in the greeks—delta, gamma, theta, vega (changes in direction, time, and volatility). Those values start changing from the time you place a trade right up until your options expire. The magnitude of the change is related to the risk of your options.

But instead of looking at each position independently, maybe take a step back and look at your portfolio from the perspective of overall risk, not just volatility. Our feature article, "Well, That Wasn't Supposed to Happen!" on page 16 highlights changing greeks and shows you how to do an apples-to-apples comparison of all your open positions. This could help you decide if you want to reduce risks or if it's okay to hold on a little longer.

But maybe it's not just about vol, time, and direction. It can be about your strategies too. If you've been trading for a while, you know that your strategies work until they don't. "Time for a Strategy Change? (You'll Know It When You See It)" on page 28 points out a few reasons for this and some ideas for how to bob and weave when it happens. Fortunately, there are some measures you could take—dial back, tweak things a little, or maybe even abandon a strategy and start over. There's no right or wrong way to tackle the markets. But it's nice to be prepared for surprises.

Happy trading,
Kevin Lund
Editor-in-Chief, *thinkMoney*

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Transaction costs are important factors and should be considered when evaluating any options trade. For simplicity, the examples in these articles do not include transaction costs. At TD Ameritrade, online options orders are $0.65 per contract. Orders placed by other means will have higher transaction costs.

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IN THE MONEY

INDUSTRY SPOTLIGHT

Share Buybacks Demystified

With a lack of clarity on tariffs, CEOs may be reluctant to spend on infrastructure. They sometimes see share buybacks as a more prudent use of their money.

• WHEN YOU RECEIVE AN UNEXPECTED windfall, what do you do with all that extra cash? You either spend it all at once or do something meaningful with it. Corporations were faced with a similar situation after the Tax Cuts and Jobs Act, which lowered corporate taxes from 35% to 21% starting in 2018. With extra cash, corporations had to figure out how to put that money to use. Many chose to buy back their shares as a way to benefit their shareholders. When a company buys back its shares, it can reduce the number of available shares in the market. This in turn increases shareholder value. Paying out dividends does the same thing, but share buybacks and dividends are different animals.

In 2018, stock buybacks exceeded the $1 trillion mark. In 2019, buybacks softened, but that doesn't necessarily mean companies weren't faring as well as in the previous year. Through most of 2019, corporate earnings were mostly positive, consumer spending remained healthy, and the stock market continued its bullish trajectory.

In spite of the positive notes, there was a lot of uncertainty surrounding Brexit, the United States–China trade war, the impeachment inquiry, and the 2020 presidential election. Plus, manufacturing and global industrial activity was soft. So instead of spending on infrastructure or investing in plants, equipment, and buildings, many corporations shifted their attention to reducing debt and returning cash to their shareholders through share buybacks.

BUYBACK PROS AND CONS

There are several reasons why companies may choose to buy back their shares. Perhaps the company doesn't want to invest all its excess funds in growth. They might

PHOTOGRAPH: DAN SAELINGER

prefer to buy back their shares to increase shareholder value. Or perhaps the company's management views the share price as undervalued. Maybe there's a tax benefit. It could be a combination of these and other reasons.

The bottom line is that when a company buys back its shares (then called a treasury stock), the number of traded shares decreases. This can impact the company's earnings per share (EPS), the number we often hear when a company releases its quarterly earnings report. So if the number of shares (the denominator in the equation) decreases, EPS can go higher even if a company's earnings don't change.

When a company announces a buyback, you'll likely see a jump in the stock price. This could lure buyers to accumulate more of the stock and send prices even higher, which investors like. CEOs like buybacks because the EPS numbers look good.

But there's another side to all this. Some investors perceive buybacks as a manipulative tool, or something that benefits only top company executives. Buybacks can affect investors differently. They may be less visible than dividends, but knowing why a company bought back its own shares can help you understand a company better and make you a smarter investor.

—Words by JAYANTHI GOPALAKRISHNAN

Jayanthi Gopalakrishnan is not a representative of TD Ameritrade, Inc. The material, views, and opinions expressed in this article are solely those of the author and may not be reflective of those held by TD Ameritrade, Inc.

THINK TANK

Fire Up Your Inner Trader

There's never a dull moment. The markets are a buzz of activity every single trading day. Keep yourself in the loop with these tools.

Options Time & Sales: THE HIP TICKER TAPE

Seeing time, price, and volume data for every options transaction of an actively traded stock can be a lot of information to digest. The data is changing continuously—too fast to keep track of. Maybe the only thing you can figure out is if you see a lot of red, there's likely a lot of selling going on and if you see a lot of green, it could mean

FIGURE 1: OPTIONS TIME & SALES. You'll find data on all options trades that took place on the underlying symbol during the trading day. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

IN-PERSON LEARNING

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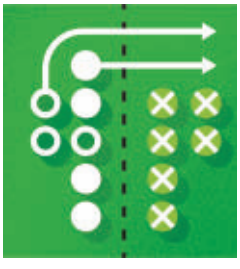

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there's a lot of buying. But beyond that, how could you use that information to make trading decisions?

Ideally, you'll want to filter all that data and focus on what matters to you. The Options Time & Sales tool on the thinkorswim® platform from TD Ameritrade gives you that ability.

There are two ways to view the Options Time & Sales feature—on the main screen and in the left sidebar. Let's focus on the features on the main screen. If you look at the **Analyze** or **Trade** tab, there are many sections on display. Make sure to select the Options Time & Sales box; the **Options Time & Sales** section will appear below Today's Options Statistics (see Figure 1).

1 - Data is divided into two major categories: today's biggest and time.
2 - Notice the different columns—Option, Qty, Price, Exchange, Market, Delta, IV, and Underlying. Options displayed in blue are call trades; those in purple are put trades. Options with green labels traded at the ask or above; those with red labels traded at the bid or below; and yellow/white are those that traded between the bid and ask.
3 - To sort the data and filter it based on your criteria, select the **Filter** button. Select the filters you wish to use from the list. You have several choices: side, series, strikes, exchanges, quantity, price, and condition.

To the right of **Condition** is a gear icon that allows you to select the number of trades to display in the Today's Biggest category. If you see a big trade show up and want to learn more about it, select the menu on the right side of the row and choose to analyze the trade in more detail.

Active Trader: A CLOSER VIEW

If you trade actively, the **Active Trader** tab on the thinkorswim platform could be for you (see Figure 2). You'll find a listing of prices, and you can place orders with one click or move orders to different price points by dragging your cursor.

From the **Trade** tab, select the **Active Trader** button. The default layout displays a chart on the left side and depth of market and order actions on the right. The layout is customizable.

To the right of the Active Trader panel is the control bar with buttons that range from live news feeds to additional sets of order buttons. The beauty of the Active Trader tab is its visual approach to placing orders.

1 — Select the gear icon to customize the buttons.
2 — The position summary shows information about any open positions. The display can be customized by selecting the actions menu on the right.
3 — On the Active Trader screen, where you see the vertical listing of prices, the column headers can be customized by selecting the gear icon to the right of the column headers. You can see the ask and bid size at the prevailing price and anything behind the current market.
4 — There are different ways to place orders with Active Trader. You could adjust your quantity and either select the **BUY Mkt** or **SELL Mkt** buttons. Another way is to do it from the vertical price listing by placing your cursor over the ask or bid size columns. Select the cell and the order confirmation screen will pop up. The trade, along with your stop orders, will be displayed on the chart displayed at the left. Want to modify your trade? Drag those levels on the chart to different price levels. For faster order entry, you could select the Auto Send box in the order entry section, but we don't recommend it. Under the Template list, you can select the type of trade you may want to place—single, one cancels other (OCO), or trigger with one, two, or three brackets.

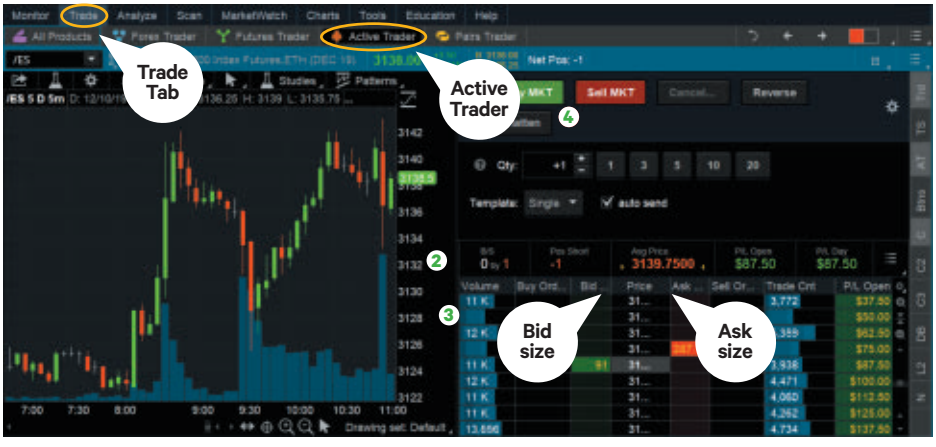

FIGURE 2: ACTIVE TRADER. If you trade actively, this tool will help you customize your layout so you can see the information necessary to make your trading decisions quickly. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

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Yup, Fundamentals for Futures

What's so new about old-school fundamentals? TD Ameritrade's Adam Hickerson goes beyond bid and ask to share what futures "fundamentals" include.

ADAM HICKERSON
SENIOR MANAGER
Futures & Forex, TD Ameritrade

Hey, Adam! For stocks, when I search fundamentals, I get lots of data. What information can I get about futures?

For the futures markets, there are no income statements, balance sheets, or financial ratios. For futures, the contract specifications are the fundamentals. So that's what we put into the **Fundamentals** tab in the thinkorswim® platform from TD Ameritrade.

When you're trading stocks in a cash account, the math is pretty consistent. When you buy a stock, it's the number of shares times the price. Price movement is in dollars and cents, and stocks typically move in penny increments. Even with standard equity options, each contract is deliverable into 100 shares.

But with futures, each contract has its own set of attributes—settlement terms, tick size, and multiplier, to name a few. Plus, futures are traded on margin, and because each product is different, each has a different margin requirement.

These are the most important items a trader needs to understand, so it makes sense to add the contract specifications to the Fundamentals tab so each trader can access the details in one place.

I trade futures, and there are a few other "fundamentals" I'd like to have at my fingertips.

This is just the beginning. We'll be adding to the Fundamentals tab for futures, including trading hours and more details on options on futures (since those have their own unique characteristics and expiration dates). So, stay tuned.

HOW TO ACCESS FUTURES SPECS

From the **Analyze** tab, in thinkorswim from TD Ameritrade, select **Fundamentals**. You'll see two types of futures listed under the **Futures** sub-head—cash-settled futures and physically settled futures. Select any contract and you'll see an overview that includes the prevailing price, volume, price chart, and contract specs. The **Contract Profile** lists the traded contracts with their expiration, price data, last trade date, and initial margin.

CHAT ROOM QUIPS

CHAT SWIMMER #1:
OMG! What did you guys do to the market? It was green when I left.
CHAT SWIMMER #2:
Tell me about it.
CHAT SWIMMER #1:
My watchlist colors reversed.
CHAT SWIMMER #2:
If I thought the market would go from green to red every time I left, I would be out of here all day long.
CHAT SWIMMER #1:
Green is good in a sea of red.

CHAT SWIMMER #1:
I don't use indicators. Just price and volume, but lunar cycles—that's on another level.
CHAT SWIMMER #2:
I don't trade on a full moon night. I go outside and bay at it.
CHAT SWIMMER #1:
I haven't figured out moon phases and their effect on the stock market.
CHAT SWIMMER #2:
I do know that chat rooms tend to be a tad weirder on a full moon.

CHAT SWIMMER #1:
Bonds are stuck after some morning bounces.
CHAT SWIMMER #2:
Yes, they are. And I'm stuck between being done, and wanting to jump back in somewhere.

JOIN THE PARTY
Tune into the Swim Lessons Chat Room from the thinkorswim app or from your platform (Support/Chat > Swim Lessons).

Diagonals and Tested Shorts: Say What?

There's no wrong question to ask the education coaches at TD Ameritrade when it comes to options. And chances are, plenty of other folks are itching to ask the same thing.

• As a TD Ameritrade education coach, Cameron May has seen and heard it all. This makes him uniquely qualified to answer any question, from simple to complex, when it comes to options. So ask away, and you may see your question pop up here in our next issue.

Cameron, say I want to use a diagonal spread for stock replacement. Can I use a covered call strategy with LEAPS® by writing a weekly option against that long call?

You could if you purchased at-the-money LEAPS instead of purchasing stock. This strategy is also known as a diagonal spread. You enter a long and short position in two calls or two puts with different strikes and expiration dates.

TRADER JARGON
TURN TO PAGE 37

You'd be buying a LEAPS contract and selling a slightly out-of-the-money (OTM) short-term call. But there are a couple things to keep in mind. First, if you get assigned on the short call, you'll need to deliver 100 shares of the underlying contract you sold. This might happen at any time for an in-the-money contract, but typically occurs at expiration.

Second, because LEAPS are long-term options, they have more time premium (time decay is typically slower than the short-term contract on a day-by-day basis). Even though LEAPS are longer-term contracts, they still have an expiration date. And one more consideration: volatility (vol) could fall, which could impact the value of the LEAPS and any options you sell against it.

Using a covered call strategy with LEAPS could be good for a sideways market, very much like a traditional covered call. If the stock is stable or at least remains below the short strike at expiration, the premium collected on that contract should offset any time decay on the long position.

Remember: three variables can contribute to the ultimate success or failure of a position: time, price, and vol. So you'll have to understand the implications of each before employing this strategy.

Finally, there are a few questions to ask if your short option reaches expiration out of the money. Are you still bullish enough on the trade to hold the longer-term option? Instead of rolling the option, you may be better off exiting the trade. And if you are bullish, are you very bullish? Remember that a covered call limits the upside potential of a stock or a long call, so if you're very bullish, you may not want to do a covered call on a stock or a LEAPS contract.

Hey, Cameron! What does it mean when traders say a short option is "tested"?

When you have a short options position, you typically make money when the stock isn't close to its strike price. But when the stock moves toward the short options contract's strike—either down to the strike of a short put, or up to the strike of a short call—that's not so good. The short option might start to lose money. That's when traders say the option is "tested." Some also use the term to mean the stock is getting near the strike price of the short option. Others use it to mean the stock has touched the strike price. Either way, the stock price is closer to the strike of the short option than the trader would like.

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PHOTOGRAPH: DAN SAELINGER

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Evaluate future risk to see if you need to make any adjustments.

NAME OF CONTRIBUTOR	
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WELL, THAT WASN'T SUPPOSED TO HAPPEN!

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EVEN THE BEST-LAID TRADING PLANS CAN CHANGE. THAT'S BECAUSE DELTA, THETA, AND VEGA ARE CONSTANTLY CHANGING. AND WHEN YOU HAVE A BUNCH OF STOCKS IN YOUR PORTFOLIO, IT CAN BE HARD TO MANAGE IT ALL. BUT IT'S NOT IMPOSSIBLE. WHEN ONE OR MORE POSITIONS FALL OUT OF LINE, CONSIDER THESE PATHS TO HELP GET BACK ON TRACK.

QTY.	PART NO.	WARRANTY Y/N	TOTAL PARTS

Hey, option trader! This article is for you. It doesn't matter what type of options strategy you use—long calls, covered calls, short puts, protective puts, two-legged, three-legged, or four-legged spreads.

Generally speaking, three things govern the success (profit) or failure (loss) of options trades—directional bias, time, and changes in volatility (vol). In options trading lingo, that's delta, theta, and vega. But you know that already, right? Well, you might know the textbook definitions of options greeks. But do you know how they change, and why you have to stay closely engaged with your options trades?

THE GREEKS, THEY KEEP CHANGIN'

Stock prices move up, down, or don't change at all. Time moves forward relentlessly. Vol, like stock, moves up or down (or not). These three things come together in options trades in different proportions and at different times in the options expiration cycle. Delta, theta, and vega, like all options greeks, are dynamic. In effect, they change when the stock price or vol changes and as time passes. For example, a short put is a bullish strategy. But short puts don't all have the same exposure to these three elements. Let's explore why.

Say stock XYZ is trading for $200. Compare two short puts—a 195 put with 60 days to expiration and a 195 put with 10 days to expiration. Same stock, same strike, different expirations. But their deltas, thetas, and vegas are significantly different. Assuming the two options have the same vol, the 195 put with 60 days has a theoretical delta of -0.39, theta of 0.06, and vega of 0.62. Meanwhile, the 195 put with 10 days to expiration has a theoretical delta of -0.26, theta of 0.13, and vega of 0.21. The delta of the 195 put with 10 days is a bit lower, but its theta is double, and vega is one-third of the 195 put with 60 days.

The option with 10 days to expiration has less directional bias, greater sensitivity to time passing, and less sensitivity to a change in vol than the option with 60 days to expiration. More important, these differences in the greeks are nonlinear with respect to time. That means, for example, that if one day passes and the stock price and vol stay the same, the delta of the 195 put with 60 days to expiration will change a small amount. But the delta of the 195 put with 10 days to expiration will change more. Theoretically, the 195 put's delta with 59 days to expiration is still -0.39 (almost no change after one day passes), while the 195 put's delta with nine days to expiration is -0.24 (changes by 0.02 after one day passes).

TRADER GLOSSARY
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Looking at it another way, suppose you sold that 195 put when it had 60 days to expiration because the stock moved up and vol was dropping. Then 50 days later, assuming no change in the stock price or vol, when the option has 10 days to expiration, it's a profitable trade because of theta. But holding that short put in expectation of a vol drop may not seem like such a smart strategy now that the put's vega is one-third of what it was when it had 60 days to expiration. If vol does drop, the short put with 10 days to expiration may be showing a profit, but not as much as from short theta. The vol drop might have been more helpful when the put had 60 days to expiration. In other words, the nonlinearity of delta, theta, and vega means that things change.

A FEW HANDY GUIDELINES

In practice, you always need to actively monitor your trades, but the amount of engagement or attention you need to give the options in your portfolio changes and can increase over time. The way you treat those trades changes, too. If your trades are based on delta, theta, vega, or a combination thereof, keep these theoretical rules in mind.

Rule 1. Delta moves toward 1 or 0 as time passes. The delta of an at-the-money (ATM) option is relatively stable at 50, no matter how many days to expiration the option has. If an option is even slightly in the money (ITM), its delta will move toward 1 as expiration approaches. The delta of an out-of-the-money (OTM) option will move toward 0. This assumes that only time is passing and stock price and vol don't change.

Rule 2. Theta increases as time passes and the option gets closer to expiration. But that increase is greatest for ATM or closer OTM options. Theta likewise decreases for further OTM options. If an option is further OTM and its value is small, its theta could drop as time passes.

Rule 3. Vega decreases as time passes and the option gets closer to expiration. Vega for OTM options is less than vega for ATM or near-the-money options all else equal.

HOW THESE RULES MAY HELP

To see these concepts in action, consider a simple portfolio of two stocks—long 100 shares of FAHN and long 100 shares of PHYL—with covered calls sold against them. (This portfolio is for illustrative purposes only and is not diversified.) Even with only two stocks, it can be helpful to beta weight the deltas for a theoretical estimate of how much risk each one adds to the portfolio in apples-to-apples terms.

For instance, if you beta weight your portfolio to the S&P 500 Index (SPX), maybe the PHYL position has a delta of 6.01, a theta of +0.45, and vega of -0.55. The FAHN position has a delta of 1.37, a theta of +2.78, and vega of -20.91 (see Figure 1).

In terms of the beta-weighted delta, PHYL has more theoretical risk in the portfolio than FAHN, while the FAHN position is contributing more positive theta and negative vega. Perhaps you want the two stocks to contribute equal amounts of beta-weighted delta, theta, and vega. To do that, you could reduce PHYL's delta and increase its theta and vega, and/or increase FAHN's delta and decrease its theta and vega.

FIGURE 1: HOW MUCH RISK DOES EACH POSITION ADD TO THE PORTFOLIO? **To make an apples-to-apples comparison, beta weight the stocks using the Monitor tab on the thinkorswim® platform from TD Ameritrade.**
Source: thinkorswim from TD Ameritrade. For illustrative purposes only.

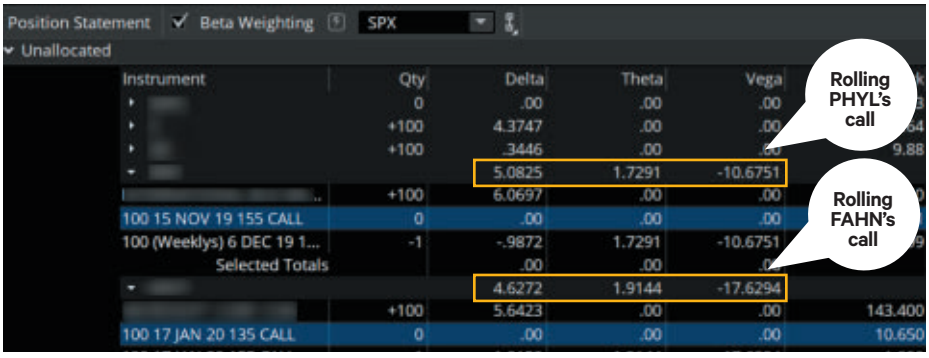


FIGURE 2: BALANCING OUT YOUR RISK. **By rolling the short calls to either a different strike price or expiration, you could have the two stocks contribute more equal amounts of beta-weighted delta, theta, and vega.**
Source: thinkorswim from TD Ameritrade. For illustrative purposes only.

Where are those deltas are coming from? In PHYL, it's the long stock and a short 155 call (covered call). But that covered call is far OTM and close to expiration with only eight days left. We know that a call's delta is lower the further OTM it is, and the OTM call's delta decreases as expiration approaches. Compared to the delta of PHYL's long shares, the short call's negative delta isn't very big. Also, its theta and vega are relatively small.

One way to reduce PHYL's delta might be to look to roll the short call (i.e., buy to close the existing short covered call and sell to open a new covered call) to a further expiration at a lower strike price. Rolling the short 155 call to the short 140 call with three more weeks to expiration takes the beta-weighted delta of the PHYL position to 5.08, its theta to 1.73, and its vega to -10.67 (see Figure 2).

Now let's look at FAHN. It's long 100 shares of stock, short a 135 call that's ITM, and expires on January 17, 2020. That ITM call has a large short delta, which is reducing the FAHN position's beta-weighted delta. And it's still close enough to the stock price to generate relatively high theta and vega. To increase FAHN's delta and reduce its theta and vega, you might consider rolling the short call to a higher strike price in the same expiration. Rolling the short 135 call to the 155 call with the same expiration takes its beta-weighted delta to 4.63, its theta to 1.91, and its vega to -17.63.

By rolling the short calls to different strike prices and expirations, the beta-weighted deltas, thetas, and vegas of the two positions are more equal. As time passes, the stock prices will likely change, and vol may move up or down. The two stocks may become unequal again—so the short calls might need to be rolled to different strikes and expirations to get them back in line. In practice, this doesn't mean you roll the options in your portfolio every time the greeks change. All that might do is run up commissions and transaction costs, and liquidity is never guaranteed to allow for it.

WHEN YOU STEP BACK, YOU CAN better determine how much risk exposure you want your portfolio to have overall. Analyzing how much each position contributes can help you create a comprehensive portfolio management strategy. With time, you'll be able to look at an option, see its impact on your portfolio's risk, and adjust accordingly. To get started, consider logging in to your account and monitoring your positions every day to stay more in control.

ROLLING YOUR OPTIONS

You can test the impact of "rolling" options using the **Analyze** tab on the thinkorswim® platform from TD Ameritrade without having to execute a trade. Select the option you wish to roll under **Positions and Simulated Trades**, and at the far right side of the row, select **Analyze rolling trade**. This can help you determine which options might give you the desired risk exposure.

Thomas Preston is not a representative of TD Ameritrade, Inc. The material, views, and opinions expressed in this article are solely those of the author and may not be reflective of those held by TD Ameritrade, Inc.

For more on the risks of trading and trading options, see page 38, #1 & 2.

SKILL
LEVEL
EASY

TAKE AWAY:
A methodical approach can bring clarity to charts.

SPECIAL FOCUS: CHARTING

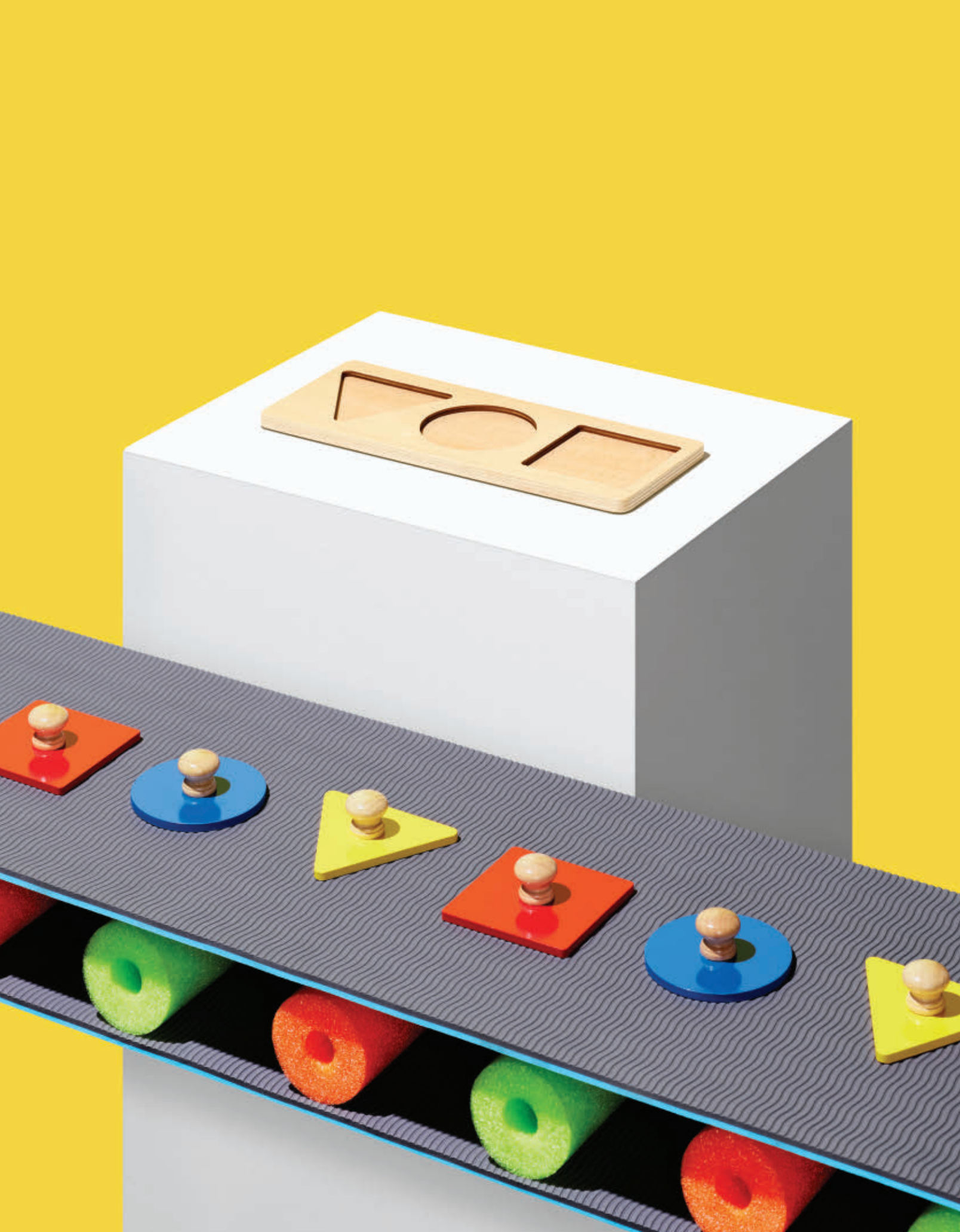
HOW TO BUILD A TRADE

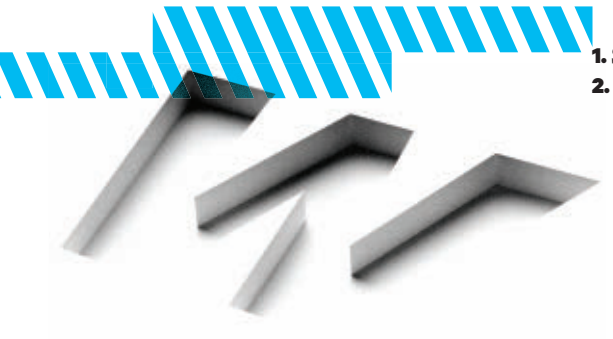
*HARD HAT OPTIONAL

BIG IDEA: HUNDREDS OF INDICATORS AND DRAWING TOOLS COULD SEND YOUR BRAIN SPINNING. BUT IN REALITY, YOU DON'T NEED TO KNOW HOW TO USE EVERY INDICATOR. INSTEAD, TAKE A STEP BACK AND THINK ABOUT WHAT'S MOST IMPORTANT TO YOU WHEN LOOKING AT PRICE MOVEMENT. THEN TRY THIS STEP-BY-STEP APPROACH.

WORDS BY **JAYANTHI GOPALAKRISHNAN**

PHOTOGRAPHS BY
DAN SAELINGER





When you walk into an ice cream store, one thing that hits you is the number of flavors. And once you decide which flavor or combination of flavors you want, you have to figure out how you want it served—dish, sugar cone, waffle cone, and so on. And then how much—single scoop, double scoop, or more.

You'll often go through a similar experience when deciding what to trade. With so much data thrown at you, that process can get tough. Some traders have no problem analyzing mountains of data. Others take comfort in looking at a chart so they have some sense of which way price may be moving. But even charts can get complicated—there are so many indicators, drawing tools, and patterns to choose from. And too many choices can lead to a state of "analysis paralysis."

The good news: there's a more logical approach to finding a potential trade and narrowing down the number of indicators to place on a chart.

SCAN THE STOCK UNIVERSE

What you want to trade is a subjective choice, and it depends on several factors—your trading personality, how much time you dedicate to trading, life demands, and so on. Whatever the case, it's a good idea to have a strategy for narrowing down your alternatives so you can focus on a handful of symbols.

The **Stock Hacker** tool on the thinkorswim® platform from TD Ameritrade can help you reduce the universe of stocks to something more manageable. Before you engage it, think about what you'd like to trade. Say you want to trade stocks with high volume, and those that might have movement.

Here's how you start the "hacking" process and scan for stocks that meet these two criteria (see Figure 1).

1. Select the **Scan** tab on thinkorswim.
2. Choose your setup. There are four choices across the top: Stock Hacker, Option Hacker, Spread Hacker, and Spread Book. Each category has several filters. For example, Stock Hacker has filters for stocks, options, studies, fundamentals, and patterns. Before setting up your scan, you can also select a category of stocks, and choose to intersect your original category with another one. For example, you might set All Optionable stocks to intersect with All NASDAQ Stocks.
3. Choose your first filter by selecting **Add filter for stock**. The filter is added to your Scan setup. From that drop-down list, select from the alternatives and then choose a range. Maybe it's earnings season and you want to find stocks that are likely to have some movement. You might select Market Maker Move from your choices. A chart will display the distribution range of the selected filter. Select your desired minimum and maximum range using the drag-and-drop tool.
4. Add a volume filter to find stocks trading on high volume. Then select the minimum and maximum range of the volume. To the right of your selected scan criteria, you'll find the number of matches. If you're still seeing too many stocks for your filtered criteria, narrow down the number of symbols on your list by adding additional filters or adding a condition group, such as not including stocks under $5.
5. Sort the most heavily traded symbols by selecting the **Sorted by** drop-down list to the left of the **Scan** button. Select **Basic Price & Quote**, then **Last**.
6. Finally, select **Descending.** Satisfied? Hit **Scan** and get your hacked universe of stocks listed and sorted to your liking. If you're not satisfied with what you see, edit your filters some more.

CHART THE TRADE

Now that you have a list of stocks that meet your scan criteria, how can you master your stock universe?

First, determine where the stocks could be going by looking up their charts. Right-click on any symbol in your scan list, select **More info on stock XYZ** from the drop-down list, then select **TOS Charts**. Choose where on your chart grid you'd like to see your stock's chart displayed. This will take you to the **Charts** tab. Maximize the chart and you're ready to begin mastering the art of charting.

You can now ask these three questions:

1. What's the trend?
2. How strong is the trend?
3. When should you get in (and out) of a trade?

It's possible to look at a price chart and quickly identify the trend. But sometimes it may not be clear-cut. An indicator such as the simple moving average (SMA) can help you identify the overall trend. From the **Studies** menu (beaker icon) on your chart, select **Add Study**, then **Moving Averages** (yes, you have plenty of choices), then **SimpleMovingAvg**. The SMA will be overlaid on the price chart. Right-click on the SMA,

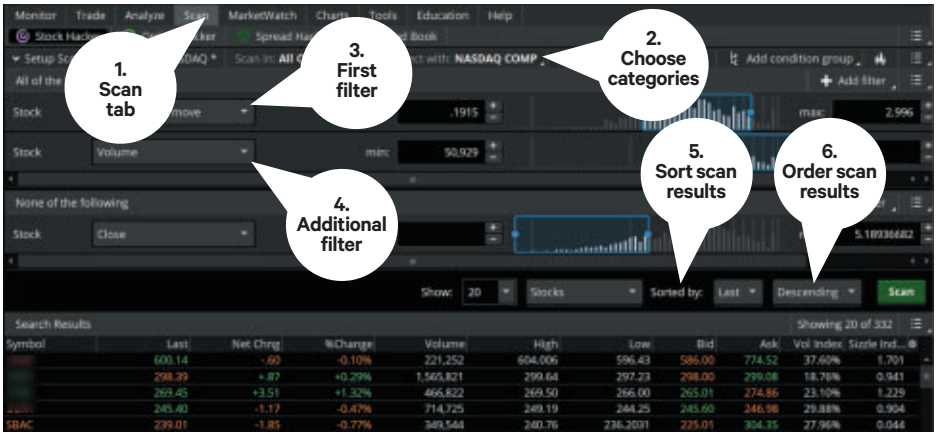


FIGURE 1: HACKING LEGALLY. Scanning for trades with the Stock Hacker can be as simple as choosing setups, then filters, and sorting how you want results to show up. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

FIGURE 2: CHARTING THE TRADE. **Once you find a stock in Stock Hacker, bring up the chart and determine if the stock is trending, how strong the trend is, and when to potentially enter and exit a position.** *For illustrative purposes only.*

Want more ADX? Read about it further on ***The Ticker Tape*** at **https://bit.ly/TrendADX**

then select **Edit Study SimpleMovingAvg**. You can change several of the SMA inputs, but we'll keep it simple and change the length of the SMA from nine to 50 (see Figure 2). This makes it a little easier to see which way prices are moving. If prices are above the 50-day SMA (blue line), generally prices are moving up. If they're below the 50-day SMA, generally the trend is down.

Next, add a lower indicator (lower pane) to determine the strength of the trend. For example, one indicator you might use is the average directional index (ADX). Add the indicator using the same steps you used for the SMA. Generally, a rising ADX indicates a strengthening trend, whereas a falling ADX indicates a slowing trend. Think of the 20 and 40 levels as the thresholds. If the ADX is below 20, the trend may be weak. If it's between 20 and 40, the trend may be strong, and if ADX is above 40, the trend could be extreme.

If you've decided to trade this particular stock, when should you get in and out of a trade? On the chart in Figure 2, prices are above the 50-day SMA, and the ADX indicates the trend is starting to strengthen. Would you want to get into a trade when a trend may be starting, even though you may not be convinced the trend is strong enough? The trend could continue its bullish move and get stronger. It could also pull back. The 50-day SMA has acted as a support level in the past. Although there's no guarantee that will occur again, you could wait and see if price pulls back to that level before resuming an uptrend.

Still having a hard time deciding? Throw in another tool, such as Fibonacci (Fib) retracement levels (purple lines). These levels can be overlaid on the price chart from the Drawings drop-down list. Select **Drawing Tools**, then Fibonacci retracements (% icon). Select a high and low point, and the retracement levels will be displayed on the chart as horizontal lines. The 50-day SMA is approaching the 23.6% Fib retracement level, which could end up being a possible support level. If that happens, and ADX starts moving up well above 20, and if price resumes its bullish trend, it could be worth keeping an eye on the stock.

No indicator, or set of indicators, is going to work all the time. But it may be worth going through a handful of stocks in your scan results and finding three to five indicators that aren't redundant and work well together. Once you've got your charts set up, answer a few relevant questions, such as:

- Is the stock clearly trading above or below the SMA?
- Is the ADX indicating the trend is strong, that is, moving up?
- Do the Fib retracement levels suggest price is approaching a possible support or resistance level?

There's no guarantee a trend will continue. But if you answer "yes" to these three questions, it's likely you may have filtered out a stock or two that could be right in the heart of a bullish or bearish run.

If only choosing ice cream flavors could be this methodical.

Jayanthi Gopalakrishnan is not a representative of TD Ameritrade, Inc. The material, views, and opinions expressed in this article are solely those of the author and may not be reflective of those held by TD Ameritrade, Inc.

For more on the risks of trading and trading options, see page 38, #1 & 2.

COOL CHART TIPS

How do you expand future dates on charts using the Expansion area?
Charts on the thinkorswim platform can be customized in many ways. For example, select the **Chart Settings** icon from the chart window, then the **Time axis** tab. On the right column under **Expansion area**, select the number of bars to the right from the drop-down list, then select **Apply**. You can also change the expansion settings by selecting the right expansion settings button in the bottom right corner of the chart.

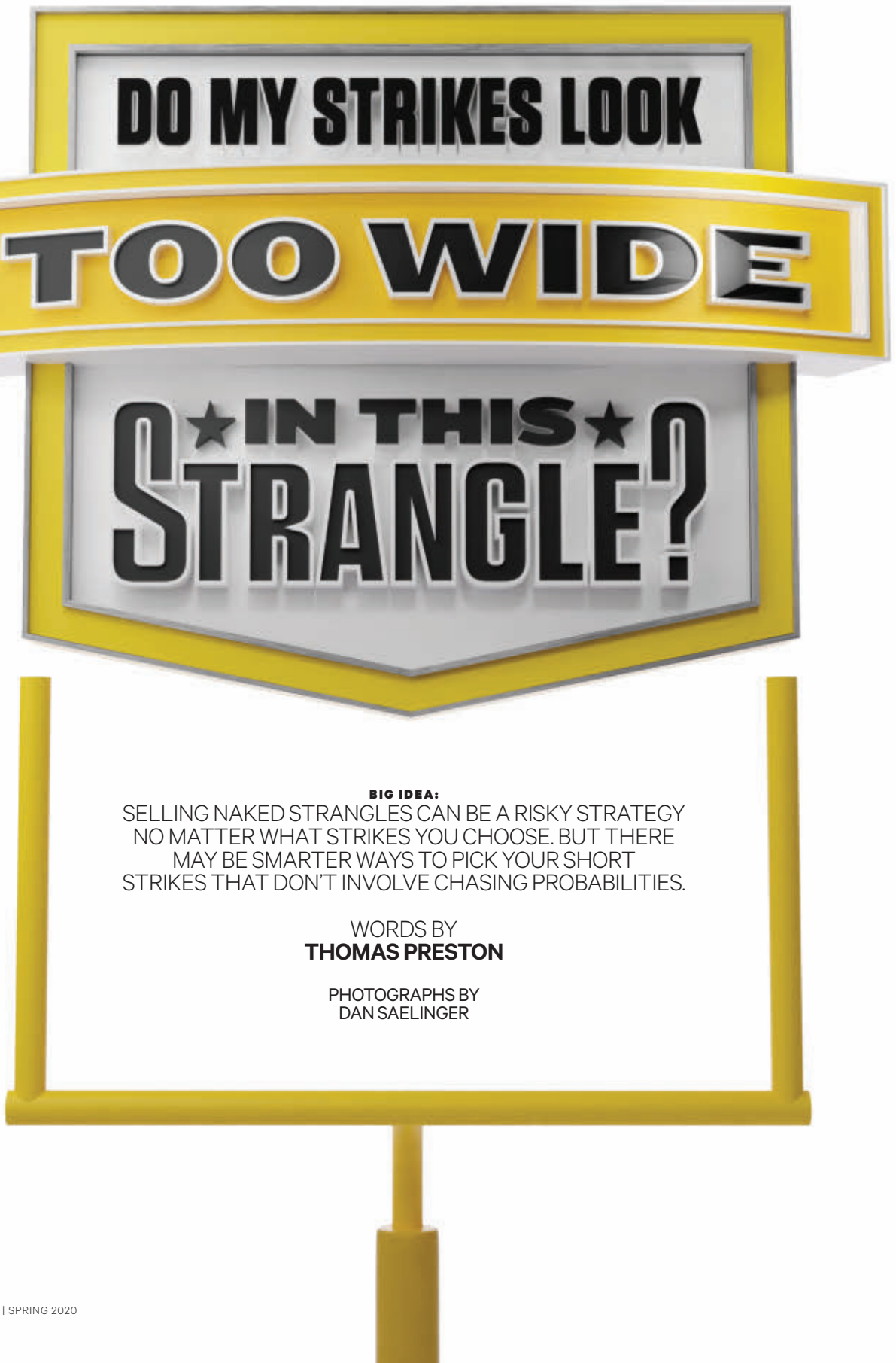
Another choice is **Autoexpand to fit**, where you can select **Corporate** actions, **Options**, or **Studies**. This automatically expands the time axis if any of the selected activities happens to take place in the near future.

How do you change time frames on charts?
Select the time frame button on top of the chart. Select the **Time frame** tab, and then you can choose the aggregation type (time, tick, or range) you want to use for analyzing charts. If you choose the time aggregation, you'll need to specify which type of time aggregation to set—intraday, daily, or custom. Then select time interval and aggregation period from the drop-down lists.
If you select the tick aggregation type, you'll need to select the time interval and aggregation period. And if you select the range aggregation, you'll need to select a time interval and price range. When you've made your choices, select **OK** and the chart will be updated.

SKILL LEVEL **PRO**

TAKE AWAY:
How you might choose strikes for your short strangles.

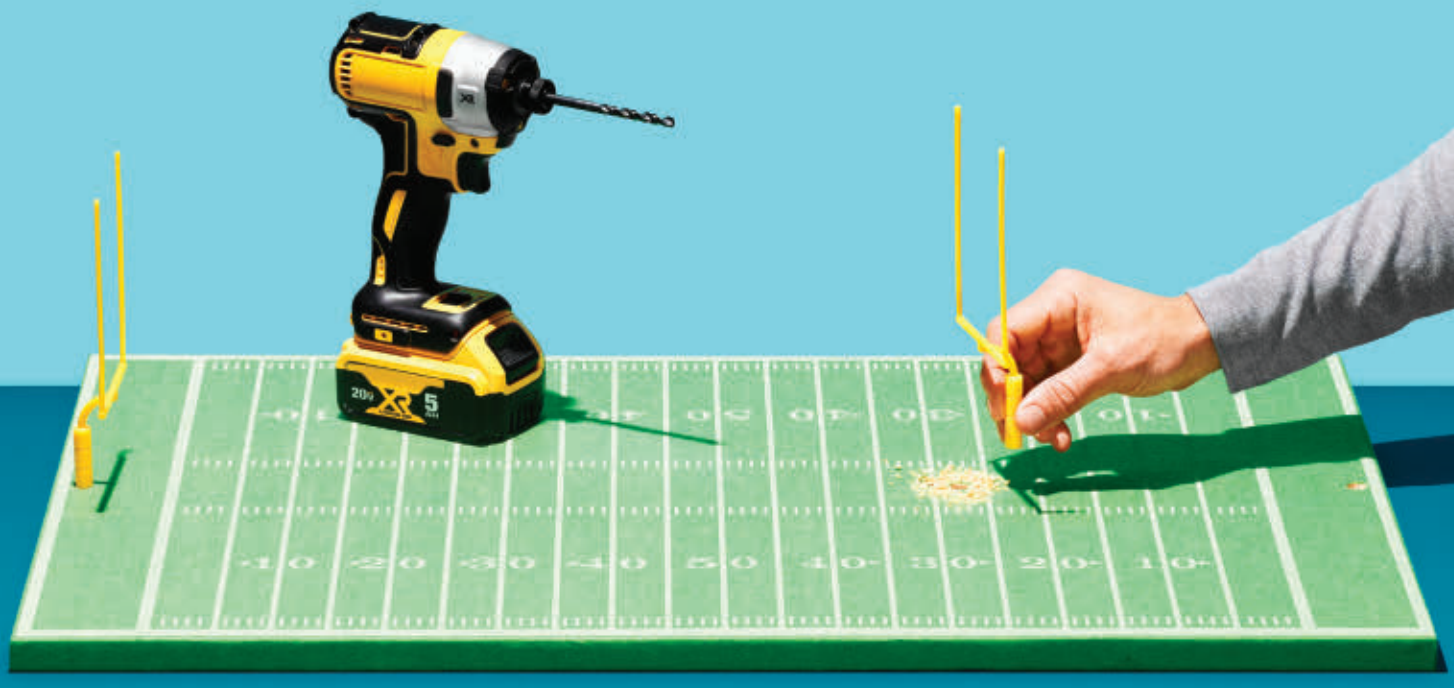
DO MY STRIKES LOOK TOO WIDE ★IN THIS★ STRANGLE?



BIG IDEA:
SELLING NAKED STRANGLES CAN BE A RISKY STRATEGY NO MATTER WHAT STRIKES YOU CHOOSE. BUT THERE MAY BE SMARTER WAYS TO PICK YOUR SHORT STRIKES THAT DON'T INVOLVE CHASING PROBABILITIES.

WORDS BY
THOMAS PRESTON

PHOTOGRAPHS BY
DAN SAELINGER



You probably know that time can suck the life out of options premiums. That's typically bad if you own options, but great if you're short options. This "positive" time decay comes from short options. If you want to get more time decay (theta), you might consider one of the time-decay-iest and riskiest strategies around: the short strangle, which is a short call plus a short put. And that means a big move—higher or lower—in the stock or index could cause big losses. Short strangles also require a large amount of trading capital. So why would anyone trade this type of strategy?

THERE CAN BE UPSIDES

When you sell a strangle, the typical setup is a short out-of-the-money (OTM) call and a short OTM put. You're speculating that the price of a stock or index will stay in between the strike prices of the options—above the strike price of the short OTM put and below the strike price of the OTM call. As time passes, and if the stock or index behaves the way you want it to, you can in theory collect a lot of positive theta.

Here's how the sausage is made. When you sell a strangle, you collect a credit—its max potential profit. That's achieved if the price of the underlying is above the strike price of the short put and below the strike price of the short call at expiration.

The break-even points on a short strangle are the put strike price minus the credit of the strangle, and the call strike price plus the strangle credit. The max potential loss is unlimited to the upside if the stock breaks through the upper break-even point and keeps going. The loss to the downside is limited only to the put strike price, minus the credit of the strangle, if the stock goes to $0.

All things being equal, here's the rationale for trading a short strangle: A stock is more likely to have smaller price changes than bigger price changes. For example, a very volatile stock might be moving up and down 5% each day. Sometimes it might change 10% or 15%. But on most days, it changes 5%. That's not to say it won't move 10%, 15%, 20%, or more. It's just that those bigger price changes happen less frequently. How can you tell? Just look at how further OTM options get cheaper and cheaper. The market is suggesting that the likelihood of the stock reaching those further OTM strikes—either higher or lower—is lower than the likelihood of reaching closer OTM strikes. And a short strangle is a speculation that the stock price will go through more of those small price changes versus the rarer, bigger ones before expiration.

TRADER GLOSSARY
TURN TO PAGE 37

WHAT ARE THE ODDS?

Explore the probability of options expiring OTM on the **Trade** tab of the thinkorswim® platform from TD Ameritrade.
1) Select an option
2) Select **Option Theoreticals and Greeks**
3) Select **Probability OTM**
You'll see a theoretical probability that the underlying will be above a put strike or below a call strike at expiration. But because these probabilities are purely theoretical, they can change over the life of a trade.

Say you've found a stock or index you think might not have a big move and might trade in a range. And you're willing to take the risk of a short strangle to capture positive theta. But which strikes do you choose for the short call and put? As you scan the options prices, you see that if you choose to sell strikes close to the current stock price—not too far OTM—you collect more premium and generate more positive theta. But the probability of the stock moving below the short put strike or above the short call strike is higher.

On the other hand, if you choose to sell strikes further away from the current stock price, i.e., further OTM, you collect less premium for the strangle. But the probability of the stock moving below the short put strike, or above the short call strike, is lower.

All of this illustrates the first trade-off with short strangles. If you want a higher credit (more positive theta and higher potential profit), you'll have to accept that the short strangle has a greater probability of losing money. If you sell a further OTM call and put, the likelihood of the stock dropping below the short put strike, or rising above the short call strike, is lower, but you'll collect less premium and generate less positive theta.

In general, you may want to avoid chasing probabilities. If, for example, a short strangle has a 70% probability of making money at expiration, then another short strangle with a 75% probability is better, right? And a short strangle with a 95% probability is better still? Not necessarily.

The further OTM options don't generate as much positive time decay as quickly as the closer OTM options. So you may have to hold those further OTM strangles longer to achieve a profit target. And if you sell a really far OTM strangle with a high probability of profit, you may be generating a small credit. Yet, the potential return is just too small, considering the risk you're taking to sell any strangle, including the far OTM ones. Selling a closer OTM strangle could mean you don't need to hold the trade as long to achieve the same profit target.

Let's look at a hypothetical example using S&P 500 (SPX) options. Please note that for the sake of simplicity, the examples that follow do not include transaction costs.*

If you sell the 2885/3025 strangle, you get a credit of $76.45 and 1.23 theoretical daily theta.

SPX = 2960	Theoretical Probability of Expiring OTM
2885 put with 49 days to expiration (DTE)	65%
3025 call with 49 DTE	65%

If you sell the 2715/3095 strangle, you get a credit of $28.65 and 0.85 theoretical daily theta.

SPX = 2960	Theoretical Probability of Expiring OTM
2715 put with 49 DTE	85%
3095 call with 49 DTE	85%

The 2885/3025 strangle has 2.66x greater credit and 1.44x greater theoretical daily theta than the 2715/3095 strangle. Yet, taking that greater credit and theta, the short strikes of the 2885/3025 strangle are much closer to the SPX price of 2960 than the short strikes of the 2715/3095 strangle. The 2885 put is about 2% OTM, while the 2715 put is about 8.4% OTM. The 3025 call is about 2.7% OTM, while the 3095 call is about 4.4% OTM. The 2715/3095 strangle gives the SPX more room to move up and down. In other words, a 3% increase or decrease in the SPX would move it past 2885 and 3025. This would create a loss for the short 2885/3025 strangle, while the short 2715/3095 strangle might still be profitable.

BUT THERE'S MORE

Let's see what happens to the theoretical values of the two short strangles over time (see the sidebar), assuming SPX is still at 2960 and volatility (vol) hasn't changed. It's a big assumption, but illustrates the point. The magnitude of losses can be much larger in practice.

Keep in mind that with more time, there's often more potential for SPX, or any stock or index, to have a large price change. Of course, big changes can happen anytime. But with more time comes more uncertainty. And holding a trade longer assumes the risk of that uncertainty.

As an engaged, self-directed trader, you may not want to hold an options position through to its expiration. Taking a short strangle off before expiration and capturing something less than the max potential profit might be a smart approach if either: (1) your opinion of the stock or index has changed, and you think it might make a big move up or down; and/or (2) you're content with the amount of profit the short strangle has already generated, and you don't want to continue taking the risk of the short strangle.

Find Your Theoretical Values
On thinkorswim from TD Ameritrade, go to the **Option Chain** on the **Trade** tab. From the **Layout** drop-down list, select **Theo Price, Mark.**

WHAT HAPPENS TO OPTIONS OVER TIME?

If one day passes (options have 48 DTE) ...

- Theoretical value of the 2885/3025 strangle is 72.68.
- Theoretical value of the 2715/3095 strangle is 25.63.

Compare the theoretical values to the original prices of the strangles, and the 2885/3025 would have a theoretical profit of $3.77, and the 2715/3095 strangle would have a theoretical profit of $3.02. Not a huge difference in profits.

If seven days pass (42 DTE) ...

- Theoretical value of the 2885/3025 strangle is 67.50.
- Theoretical value of the 2715/3095 strangle is 20.80.

Compare the theoretical values to the original prices of the strangles, and the 2885/3025 would have a theoretical profit of $8.95, and the 2715/3095 strangle would have a theoretical profit of $7.85. The difference in profits is getting wider.

If 21 days pass (28 DTE) ...

- Theoretical value of the 2885/3025 strangle is 41.68.
- Theoretical value of the 2715/3095 strangle is 10.11.

Compare the theoretical values to the original prices of the strangles, and the 2885/3025 would have a theoretical profit of $34.77, and the 2715/3095 strangle would have a theoretical profit of $18.54. Even if you were to hold the 2715/3095 strangle for another 28 days until expiration, its max profit of $28.65 is still less than the theoretical profit on the 2885/3025 strangle after 21 days.

Now, consider the magnitude of the loss if the SPX drops 10% in 21 days.

- The 2885/3025 strangle would have a theoretical value of 219.28, creating a loss of at least $142.83.
- The 2715/3095 strangle would have a theoretical value of 92.96, creating a loss of $64.31.

If SPX rallies 10% in 21 days:

- The 2885/3025 strangle would have a theoretical value of 238.16, creating a loss of at least $161.71.
- The 2715/3095 strangle would have a theoretical value of 168.80, creating a theoretical loss of $140.15.

NOT TOO WIDE, NOT TOO NARROW

In general, traders know what "just right" feels like. And as an example, you may want to start your search for the short call and short put at strikes that have about a 70% probability of expiring worthless. Beyond those OTM strikes, for any given volatility, time to expiration, and stock price, theoretical theta starts to drop off more rapidly. Closer OTM than those strikes, and the probabilities of the stock moving past the short strikes can rise rapidly. That's not to say selling options with a 70% probability of expiring worthless is the best or even a smart trade. You may see this behavior of theta and probability at different strikes. It's just that starting your analysis there could save time.

If you integrate short strangles into your trading plan, understanding how to combine probabilities and theta is a powerful step in your trading education.

Thomas Preston is not a representative of TD Ameritrade, Inc. The material, views, and opinions expressed in this article are solely those of the author and may not be reflective of those held by TD Ameritrade, Inc.

**No commission fee for online trades of U.S. exchange listed stocks and options through TD Ameritrade. A $0.65 per contract fee applies for options trades. Orders placed by other means will have higher transaction costs.*

For more on the risks of trading and trading options, see page 38, #1 & 2.

Naked option strategies involve the highest amount of risk and are only appropriate for traders with the highest risk tolerance.

Short options on equities (stocks, ETFs, and certain indices) can be assigned at any time up to expiration regardless of the in-the-money amount.

SKILL LEVEL **EASY**

TAKE AWAY: *Consider these fixes when your trading strategy goes awry.*

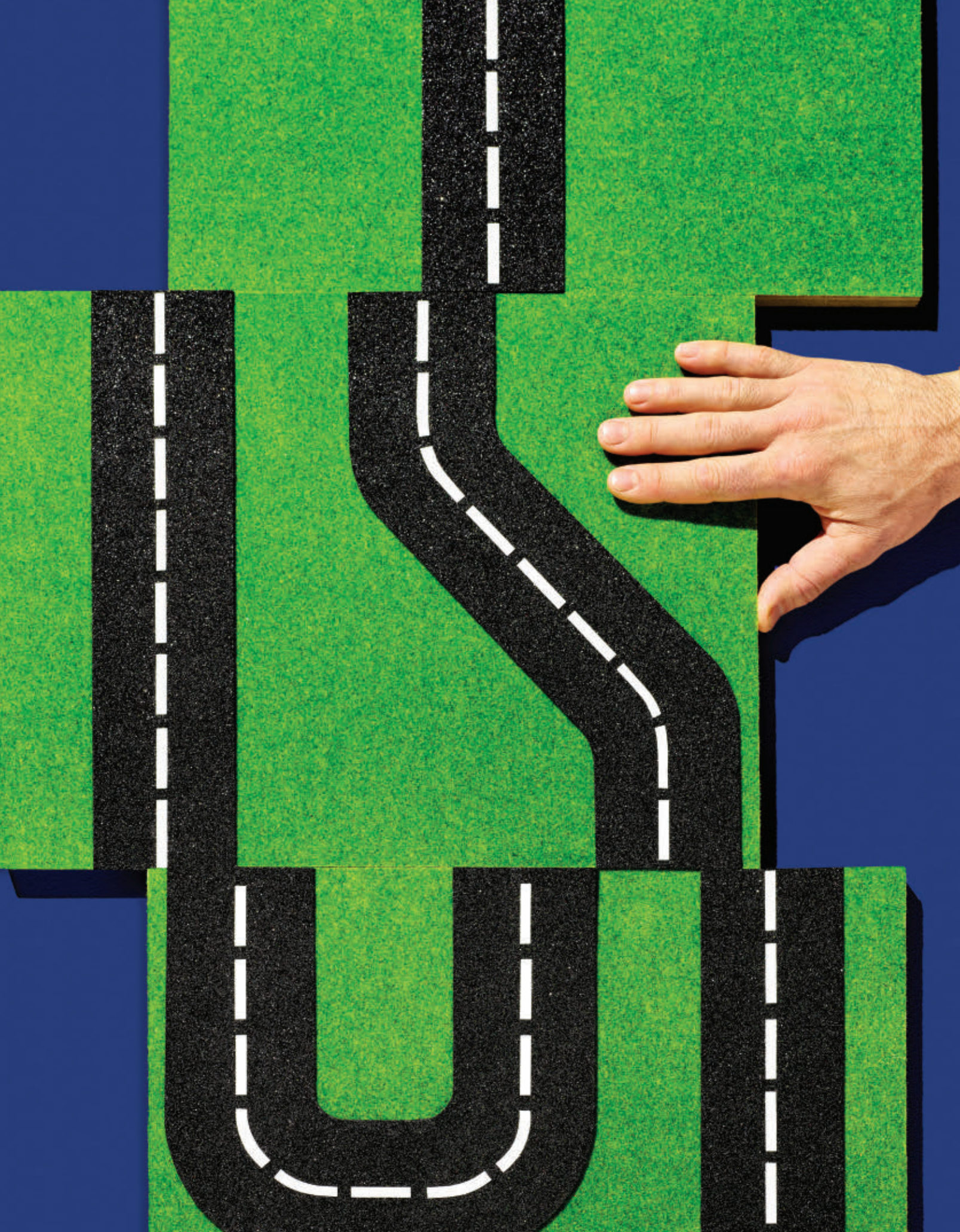
TIME FOR A STRATEGY CHANGE?

YOU'LL KNOW IT WHEN YOU SEE IT.

BIG IDEA: WHEN YOUR TRADING STRATEGIES SEEM TO HAVE LOST THEIR MOJO, DON'T DESPAIR. TO TRY AND GET BACK ON TRACK, YOU CAN HIT THE RESET BUTTON, CHANGE POSITION SIZES, OR TWEAK A FEW PARAMETERS.

WORDS BY **DOUG ASHBURN**

PHOTOGRAPHS BY **DAN SAELINGER**



YOU KNOW

what it's like when everything clicks. Those periods where your go-to strategy—a set of primary and secondary indicators, target volatility (vol) levels, and delta ranges—allow you to nail your entry and exit points. For a trader, there's no feeling quite like it. You're like a chef who's finally perfected that secret sauce. Every meal is scrumptious.

Then, one day, yuck. You zig, the market zags. And your secret sauce has a funny aftertaste.

WHAT WENT WRONG?

It might be the market; it might be you. It might be temporary; it might be something with staying power. You may decide to stick to your guns or make some changes.

When tried and true turns to tried and died, there are three possibilities as to what might have happened. Learn how to identify them and how you may want to respond.

1 PROBLEM ONE
Temporary Slump

Statistics geeks have something called the law of large numbers. Here's the gist: Flip a coin 100 times, and it'll come pretty close to 50/50 heads versus tails. But during those 100 flips, you'll likely see strings of heads or tails five or six times in a row. Flip it 1,000 times, and the heads/tails ratio should be even closer to 50/50. You might see even longer strings of heads or tails in a row—maybe up to 20 or more.

In other words, just as markets don't move in straight lines (which is why trading is exciting), trading successes don't follow a specific pattern. Slumps happen, and in a slump, you may feel like you're making the right moves, but the good-odds plays don't pan out.

THE FIX. If you're a "tails-never-fails" kind of person, watching heads come up 20 times in a row would surely leave a mark. It might (and perhaps should) lead you to reassess your strategy.

But if you're truly in a down period, even though your strategy and execution have been rock solid, you might want to downsize your positions. If you plan to keep yourself in the game for the long haul, consider keeping your positions small until you see things turn around.

But note: If you find yourself in a slump, be sure to reflect and research. Review your trades—especially the ones where you felt the strongest conviction. Maybe you missed something. Perhaps there's a larger issue at work, i.e., what looked like a temporary slump is actually an inflection point suggesting other leaks.

2 PROBLEM TWO
Style Drift

When's the last time you refined your secret sauce? Do you make the occasional tweak along the way to adjust to a temporary market condition, but neglect to reset parameters when the market reverts?

For example, suppose you use a moving average breakout as a primary entry-and-exit indicator and throw in a momentum indicator such as the Relative Strength Index (RSI) to help you confirm your points (see Figure 1). But you also keep an eye on implied vol to help you select options strikes and expiration dates. Did you tighten up a strike width during a period of low vol but neglect to adjust it when the market started swinging?

This is just one example of a style drift over time. You might have temporarily overruled your strategy to account for a temporary change in fundamentals, such as merger talks or another factor that caused short-term erratic price behavior. When things returned to normal, did your strategy revert as well?

THE FIX. If you've been the victim of style drift, you might want to hit the reset but-

FIGURE 1: HAVE YOU BEEN TWEAKING? **An options strategy that uses technical indicators such as moving averages (blue line) and the RSI (yellow line) to inform entry and exit points might also use IV (cyan line) to help with strike selection. Has the strategy been drifting?** *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

NEED A MEMORY JOG?

The **thinkOnDemand** tool on the thinkorswim® platform from TD Ameritrade lets you roll back the clock and analyze market dynamics, check the prices of related stocks and options, and even assess the market's expectations at the time via the **Market Maker Move** indicator.

From the **Trade** tab, select **OnDemand**, type in any stock, and adjust the calendar on the right to any date you want (see Figure 2).

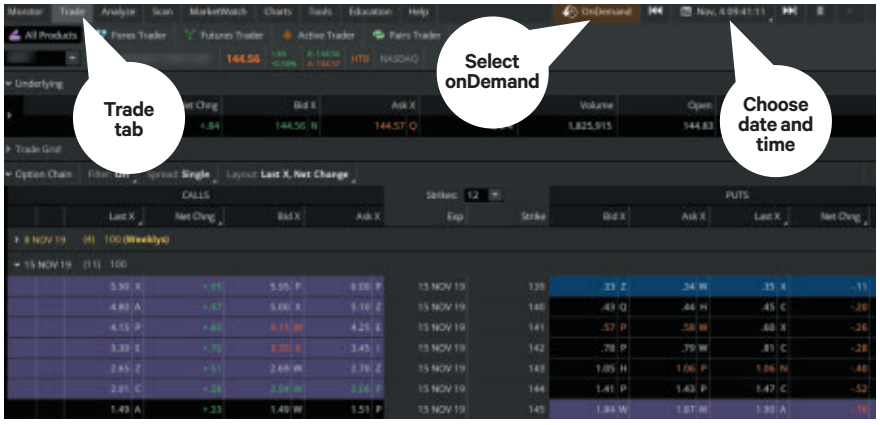


FIGURE 2: ROLL BACK THE CLOCK. With thinkOnDemand, you can backtest any strategy for any time period going back to December 2009. On the thinkorswim platform, select the OnDemand button, choose your starting time and date, and type in the stock symbol. Make your trades and watch the action unfold. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

ton and return to your initial strategy. Want to see how your original strategy might've fared had you reverted back to it earlier? thinkOnDemand comes to the rescue (see the sidebar, "Need a Memory Jog?").

TRADER GLOSSARY
TURN TO PAGE 37

With thinkOnDemand™, you can backtest (evaluate a particular trading strategy using historical data) going all the way back to December 2009. On the thinkorswim platform, select **OnDemand**, and it'll automatically set things to your **Virtual Account**. Type in the stock symbol, apply your original set of indicators—that go-to secret sauce—and watch the action as the sauce simmers. How did it taste? Is it time to revert back to the original recipe? Please note that the results presented in thinkOnDemand are hypothetical and there is no guarantee that the same strategy implemented today or in the future would produce similar results.

PROBLEM THREE

Fundamental Change

Let's face it: Sometimes the financial ship sails, and it's never coming back. Maybe the company made a fundamental change to its business that affected its price action, annualized vol, or another trade-flow dynamic. Maybe a change in its business model created a seasonal trend that wasn't there before.

Circling back to the coin-flip analogy, it's as if your coin was swapped out with a lopsided one that favored one side over the other. That's why it's important to backtest. Waiting for a failed strategy to bring you great returns is essentially throwing good money after bad.

THE FIX. If you think time has passed your strategy by, maybe you should find new parameters. Or even choose to change the products you trade. You may even find your tried-and-true strategy is perfect for another product.

For example, suppose you have a high-vol strategy that pairs well with a high-flying growth stock, but that stock has matured into a stable cash cow with consistent earnings, regularly scheduled dividends, and a lower vol profile. Your strategy didn't change; the stock did. So you might look at the new crop of high flyers and see how your strategy fares.

IN THE END, NOTHING WORKS FOREVER. The market is a moving target, and so are the secret-sauce strategies that seek to profit from that movement. But good chefs trust their taste buds. A bit of study and research can help you decide whether to dial back the heat on your trades, tweak the seasoning, or scrap the recipe entirely and start fresh.

Doug Ashburn is not a representative of TD Ameritrade, Inc. The material, views, and opinions expressed in this article are solely those of the author and may not be reflective of those held by TD Ameritrade, Inc.

For more on the risks of trading and trading options, see page 38, #1 & 2.

Negative Interest Rates: What'll They Do to My Options?

You may have already experienced negative interest rates without knowing it. That's right—they may already be built into prices.

• You could say that short-term interest rates like federal funds or the discount rate are relatively stable in the United States. Their fluctuations are small and don't have as much impact on options prices as changes in stock price, volatility, or time. And interest rates have been positive in the United States since we've had a Treasury. But negative interest rates exist in many parts of the world.

WHAT NEGATIVE RATES REALLY MEAN

Positive interest rates mean that if you borrow $100 and have to pay it back in a month, you'll need to pay something more than $100, say $101, when the loan comes due. Negative interest rates mean that if you borrow $100, you'd only pay $99 in a month.

Negative rates aren't a response to a specific economic event; instead, central banks use negative rates to encourage those holding cash in short-term government notes to move the funds into other, presumably more productive, parts of the economy. There's nothing stopping the U.S. Federal Reserve from setting negative fed funds rates. It's not likely, but it's possible.

When it comes to options, though, will a negative rate blow up Black-Scholes and rip a tear in the space-time continuum? Actually, you may have already experienced the impact of negative interest rates on options prices without seeing negative interest rates.

TRADER JARGON
TURN TO PAGE 37

IT'S BUILT INTO THE PRICE, SORT OF

Part of the price of an option is based on the cost of carrying the underlying—the interest rate charged on either borrowing money or forgoing interest earned when you buy stock. For calls, you have the right to buy the stock, but you don't own it. So the cost of carry on long stock increases a call's value, because the call is more valuable when you don't have to pay the interest on long stock. For puts, you have the right to short the stock but don't have short stock. That cost of carry decreases a put's value, because the put can't earn interest on cash generated from shorting stock. Higher interest rates push the theoretical values of calls up and puts down. Lower interest rates do the opposite.

But there's more to the cost of carry than interest rates. Some stocks pay dividends, which can offset the interest paid when you buy stock (or you pay the dividend if you're short stock). But calls or puts neither earn, nor pay, dividends. Call values are reduced because they don't convey the ability to earn dividends, like long stock. Put values are increased because they don't have to pay the dividend, like short stock.

When the dividend yield on a stock is higher than interest rates, it makes the cost of carry negative. That has the same effect on options prices as negative interest rates until dividend adjustment. So, negative interest rates would decrease the theoretical value of calls and increase the theoretical value of puts. If you look at stocks that have high dividend yields, it's possible the interest rate is lower. Options on those stocks exhibit the same behavior as if interest rates were negative. Black-Scholes and other theoretical pricing models take this into account. So if interest rates go negative, options should take it in stride. —Words by THOMAS PRESTON

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A 24-hour news cycle calls for 24-hour market access.

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So Many Vol Readings. Which One Do I Use?

Different vol numbers tell you different things. Is one more useful than another? Let's find out.

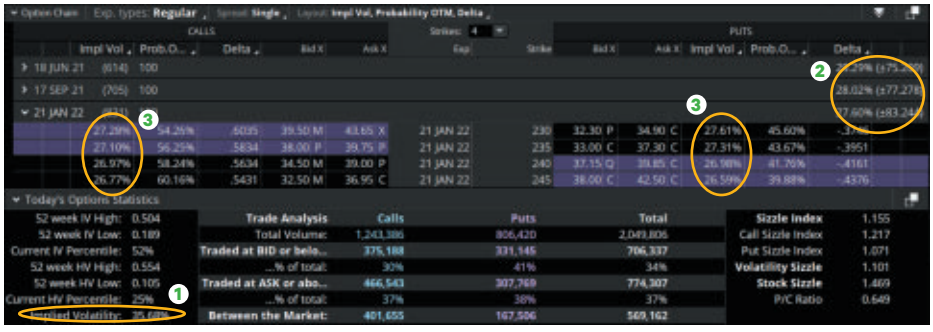

FIGURE 1: WHICH VOL? You'll find different vol values in the Option Chain on the thinkorswim® platform from TD Ameritrade. You can explore an overall implied vol, the implied vol for each expiration, and implied vol for each option. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

• Volatility (vol) values are like clues in a scavenger hunt. Each one might reveal the perceived risk of an option and how that exposure could affect your overall trading strategy.

A WALK THROUGH VOL LAND

You know vol is important. But should you look at overall implied vol (IV), the IV of each options expiration, or the IV of each option within an expiration?

Overall IV. Use this as a big-picture metric to get a general sense of where vol is in a specific symbol's options. You can also use it to compare the vol of one symbol to another.

Overall IV of each expiration. Consider this a blended vol, based on a basket of options within a given expiry.

IV of each option within an expiration. This is the vol input (along with stock price, days to expiration, interest rate, and dividend yield) for a theoretical options-pricing model that makes the theoretical options contract price equal to the market price. If the market, and theoretical price, of an option is $3 with a 25% vol input, that option has a 25% implied vol.

WHERE TO FIND VOL VALUES

Fire up the thinkorswim platform from TD Ameritrade. Select the **Trade** or **Analyze** tab and enter a stock symbol. You'll notice different vol numbers (see Figure 1). Let's explore how they're calculated.

1— Overall Implied Volatility

You'll find this under **Today's Options Statistics**. It's calculated using a method similar to the Cboe Volatility Index (VIX). Overall IV is used for a 52-week IV high, 52-week IV low, and existing IV percentile numbers. It's also used in the **Probability Analysis** section of the **Analyze** tab.

2— Overall Vol of Each Expiration

To find the overall vol for options in each expiration, look further up the **Trade** tab. It's the number on the right for each options expiration (next to it in parenthesis is an expected move based on the vol). This per-expiration vol shows how much risk the market anticipates. For example, you might see that the first two expirations of a stock have 20% and 21% vols, but the third expiration has 30% vol. In this case, the market might anticipate more risk around earnings, so that higher vol could be linked to an earnings announcement scheduled between the second and third expirations.

All things being equal, you could base an options strategy on these vol numbers. If you're looking for a short options strategy, you might look for an expiration with a higher vol relative to the others. And if you're looking for a long options strategy, you might consider an expiration with a lower vol.

3— Discrete Expirations

When you open up each expiration and look at the strikes, you can see an implied vol associated with each one. Select **Impl Vol** from the **Layout** drop-down list.

MORE USES FOR VOL

These IVs are used to calculate the greeks and probability numbers you see for each option. If you base your strategy on the probability of an option expiring worthless, that probability uses the IV of the option in its formula. If you want to sell a covered call against long stock where the call has a certain delta, say 0.30, that delta uses the IV of the option in its formula.

Individual IVs are also used to calculate the greeks for options positions, which you can find in the **Position Statement** section of the **Monitor** tab. When vol changes, those greeks change, too, and they can change your position's risk exposure. If you beta weight your portfolio, changes in vol can have a compound effect, changing the greeks of your underlying positions and any hedges you have. In a word, pay close attention to IV.

DEPENDING ON YOUR TRADING STYLE, any one of these vol numbers could be more important than the others. But consider all of them for clues so you can get the best sense of where vol exists for a given symbol.

—Words by THOMAS PRESTON

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How is futures margin different from equities margin?

When you trade futures, you often wind up with a lot of questions. That's why, at TD Ameritrade, we have on-demand education, futures specialists ready to talk day and night, and an intuitive trading platform. So whatever the question, you'll have all the answers you need.

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WHO KNEW?
"I love to travel and have been to every continent except Antarctica."

Thinking Ahead: One Feature at a Time

That's what **Joe Barakat**, managing director of trader strategy and analytics, believes in. So if you see a new tool or feature on the thinkorswim® platform from TD Ameritrade, chances are he had something to do with it.

• WHAT'S AN AVERAGE DAY FOR JOE BARAKAT? Digging into numbers to get insights, figuring out what traders want, and putting together a cohesive vision and plan for improving the trader experience. The market doesn't hold still, and neither does Joe. He wants TD Ameritrade clients to trade with complete confidence. Some of his passion and focus involves innovating TD Ameritrade products to make sure clients have the best experience they can have.

1

Joe, what makes your job so cool?
Understanding the client mind-set. We talk to our traders constantly to glean their habits and to stay sharp about everything they need for an optimal trading experience. I like that we're constantly brainstorming and finding ways to make the experience seamless. We never stop asking: "What can we do, or change, to make sure traders have the best information and analysis to become more engaged traders?"

2

Sounds like you prize educated traders. Tell us about your education efforts.
Traders are always looking for ideas and actionable insights, and we want to make sure they're always learning something new. We do this through podcasts, online courses, videos, webcasts, and in-person events. Our educational offerings provide traders with actionable insights around trading and what's happening in the markets. They learn basic concepts, new strategies, and how they can leverage different products to achieve their trading goals. We take pride in our educational tools by working to make sure clients stay on top of their game.

3

Any plans for 2020?
We want to push even more appropriate and relevant information to our clients. We're excited about using artificial intelligence to help us identify what may be most helpful in relation to the education and content we create. There's so much content, and we want to direct clients to the resources that will relate to their needs. We want to give clients what's most relevant to their trading lives.

4

Can you give traders three critical pointers?
One: Always learn from the trades you place. Get as much information about the trade as possible. You don't want to jump in before testing the waters. If you try something different, ask yourself what you took away from that trade and what to change next time.
Two: Be comfortable with what you're putting on the table. Try never to overextend in one particular area.
Three: Be disciplined. We all know that managing a trade can be hard. So it's important not to sway from your plan. Even veteran traders make new discoveries. The markets are an interesting space. They're always changing, so traders have to constantly readjust their strategies.

At the money (ATM)

• An option whose strike is "at" the price of the underlying equity. Like out-of-the-money options, the premium of an at-the-money option is all "time" value.

Black-Scholes

The options pricing formula published by Fischer Black and Myron Scholes, which requires five inputs (stock price, options strike, interest rate, time to expiration, and volatility) to arrive at a price.

Delta

A measure of the sensitivity of an option to a $1 change in the underlying asset. All else being equal, an option with a 0.50 delta (for example) would gain 50 cents per $1 move up in the underlying. Long calls and short puts have positive (+) deltas, meaning they gain as the underlying gains in value. Long puts and short calls have negative (–) deltas, meaning they gain as the underlying drops in value.

Implied volatility (IV)

This is the market's perception of the future volatility of the underlying security and is directly reflected in the premium of an option. Implied volatility is an annualized number expressed as a percentage (such as 25%), is forward-looking, and can change.

In the money (ITM)

An option whose premium contains "real" value, i.e., not just time value. For calls, it's any strike lower than the price of the underlying equity. For puts, it's any strike that's higher.

Out of the money (OTM)

An option whose premium is not only all "time" value, but the strike is also away from the underlying equity. For calls, it's any strike higher than the underlying. For puts, it's any strike that's lower.

Short

To short is to sell an asset, such as a stock, that you don't own in order to collect a premium. The idea is that if you believe the price of the asset will decline, you can "borrow" the stock from your broker at a certain price and buy back ("cover") to close the position at a lower price later. Your potential profit would be the difference between the higher price you shorted at and the lower price where you covered.

Short strangle

A market-neutral strategy with unlimited risk, composed of an equal number of short calls and puts of different strike prices resulting in a credit taken in at the onset of the trade. The strategy assumes the underlying will stay within a certain range, in which case, as time passes and/or volatility drops, the options can be bought back cheaper than the credit taken in, or expire worthless, resulting in a profit. The break-even points of short strangles at expiration is calculated by adding the total credit received to the call strike and subtracting the total credit received from the put strike.

Theta

A measure of the sensitivity of options to time passing one calendar day. For example, if a long put has a theta of -0.02, the options premium will decrease by $2 per contract.

Vega

A measure of the sensitivity of options to a one-percentage-point change in implied volatility. For example, if a long option has a vega of 0.04, a one-percentage-point increase in implied volatility will increase the options premium by $4 per contract.

DISCLAIMERS

IMPORTANT INFORMATION YOU NEED TO KNOW

1

GENERAL DISCLAIMER

The information contained in this article is not intended to be investment advice and is for illustrative purposes only. Be sure to understand all risks involved with each strategy, including commission costs, before attempting to place any trade. Clients must consider all relevant risk factors, including their own personal financial situations, before trading. Past performance of a security or strategy does not guarantee future results or success.

Transaction costs (commissions and other fees) are important factors and should be considered when evaluating any options trade. Options are not suitable for all investors as the special risks inherent to options trading may expose investors to potentially rapid and substantial losses. Options trading is subject to TD Ameritrade review and approval. Please read Characteristics and Risks of Standardized Options (http://www.optionsclearing.com/about/publications/character-risks.jsp) before investing in options.

It is not possible to invest directly in an index.

2

OPTIONS STRATEGIES

Trading options involves unique risks and is not suitable for all investors.

Spreads, condors, butterflies, straddles, and other complex, multiple-leg options strategies can entail substantial transaction costs, including multiple commissions, which may impact any potential return. These are advanced options strategies and often involve greater risk, and more complex risk, than basic options trades. Be aware that assignment on short options strategies discussed in this article could lead to unwanted long or short positions on the underlying security.

The maximum potential reward for a long put is limited by the amount that the underlying stock can fall. Should the long put position expire worthless, the entire cost of the put position would be lost.

When trading short options strategies, there is a risk of getting assigned early on the options sold, even if they go in the money by $0.01, obligating you to deliver shares you don't own (in the case of a short call) or purchase shares (in the case of a short put).

The risk of loss on an uncovered short call options position is potentially unlimited because there is no limit to the price increase of the underlying security. Option writing as an investment strategy is absolutely inappropriate for anyone who does not fully understand the nature and extent of the risks involved.

Short naked put and cash-secured put strategies include a high risk of purchasing the corresponding stock at the strike price when the market price of the stock will likely be lower.

Short naked options strategies involve the highest amount of risk and are only appropriate for traders with the highest risk tolerance.

A covered call strategy can limit the upside potential of the underlying stock position, as the stock would likely be called away in the event of a substantial stock price increase. Additionally, any downside protection provided to the related stock position is limited to the premium received. (Short options can be assigned at any time up to expiration regardless of the in-the-money amount.)

3

FUTURES

Futures trading is not suitable for all investors, as the risk of loss in trading futures is substantial. Futures accounts are not protected by the Securities Investor Protection Corporation (SIPC). Futures and futures options trading services are provided by TD Ameritrade Futures & Forex LLC. Trading privileges are subject to review and approval. Not all clients will qualify.

Futures and futures options trading are speculative and are not suitable for all investors. Please read the Risk Disclosure for Futures and Options *prior to trading futures products (https://www.tdameritrade.com/retail-en_us/resources/pdf/TDA631.pdf).*

4

SPREAD DISCLOSURES

Options collar: *The collar position involves the risks of both covered calls and protective puts.*

Options covered call: *The covered call strategy can limit the upside potential of the underlying stock position, as the stock would likely be called away in the event of a substantial stock price increase. Additionally, any downside protection provided to the related stock position is limited to the premium received. (Short options can be assigned at any time up to expiration regardless of the in-the-money amount.)*

Options long put: *The maximum potential reward for a long put is limited by the amount that the underlying stock can fall. This strategy provides only temporary protection from a decline in the price of the corresponding stock. Should the long put position expire worthless, the entire cost of the put position would be lost.*

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