thinkMoney®/46

Random musings for traders at TD Ameritrade—WINTER 2020

SPECIAL FOCUS

TINY DOESN'T MEAN YOU CAN'T DANCE

PAGE 16

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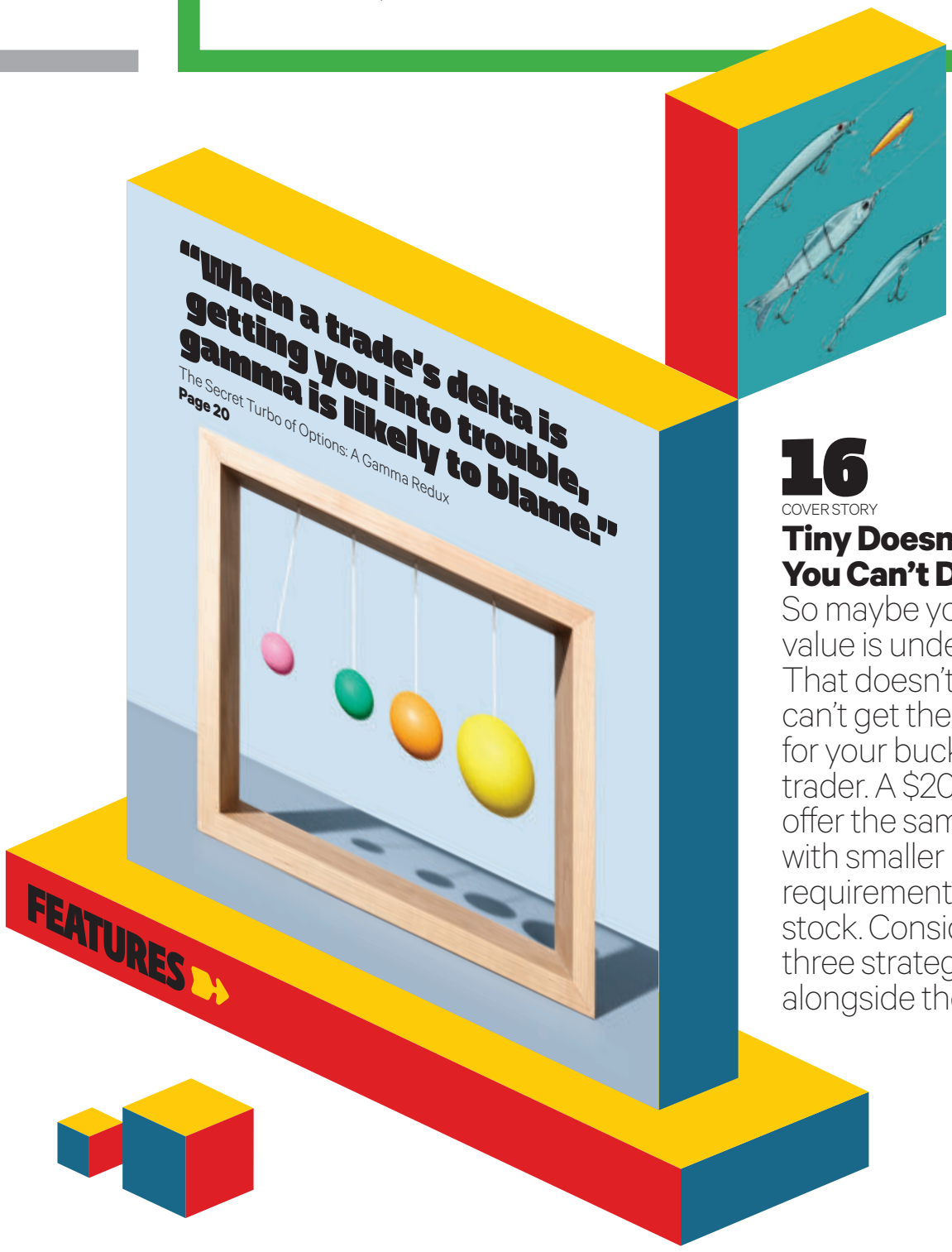

Cover Photograph by **Dan Saelinger**

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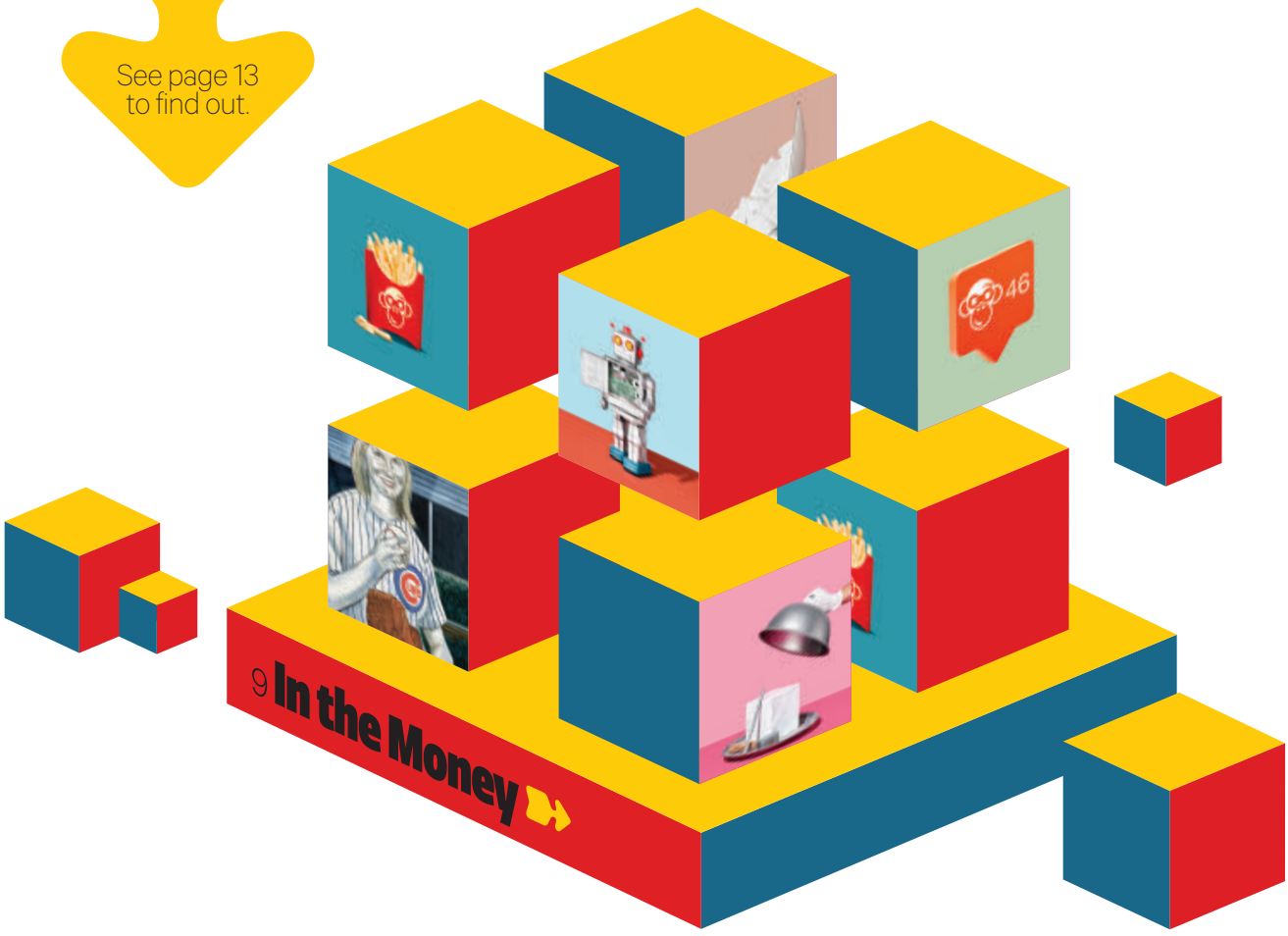
COVER STORY

Tiny Doesn't Mean You Can't Dance

So maybe your account value is under $5,000. That doesn't mean you can't get the same bang for your buck as a bigger trader. A $20 stock can offer the same risk/reward with smaller margin requirements than a $200 stock. Consider these three strategies to play alongside the pros.

ZERO COMMISSIONS
What it means for you.

See page 13 to find out.



9 **In the Money**

Industry Spotlight Bond ETFs are made up of a basket of bonds, all with different yields and expirations. Here's a deep dive into how ETF portfolios are churned.
thinkTank Tools you can use to identify movers and shakers in the markets.
Chat Room Quips Banter from the Swim Lessons chat room.
Trade Winds What does zero commissions mean for your trading?
Ask the Coach Strategies you could apply in an election year.

REGULAR COLUMNS

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**

Here's Looking at You, 2020

• G'bye, 2019. It's time to focus on the future. And we're not going to sugar-coat it. With our presidential election coming, bumpy rides beget risks and opportunities.

Sure, you can base your stock market predictions on presidential cycles and other historical trends. You might look at how markets have performed during various presidential terms, or what to expect if the incumbent or candidate wins. In short, it's tempting to look at past trends to try to predict the future. But that's a lot of noise to filter through. So instead, let's clear our heads for a moment and think about what really drives the markets: volatility (vol). After all, in the end, many believe that vol is what's most useful when making trading decisions, or even choosing which products to trade.

But to know vol is to understand vol. As a metric, vol could be considered a gauge that measures sentiment—i.e., the mood of the market. But how can traders use vol effectively? One way might be to trade options on lower-priced stocks. You might *like* to trade options on the high-flying stocks everyone seems to be jumping on, but they could be out of your reach. Well, there may be a way to get around that using vol. In "Tiny Doesn't Mean You Can't Dance" on page 16, you'll learn how to apply vol so you too can groove alongside the big traders. You may even find other valuable strategies to try out.

If you want to gain exposure to vol as a trading product or as a hedge against vol risk, there's a smorgasbord of vol products to choose from: futures, options, exchange-traded funds and notes, indices, and so on. Although more choices are great, they also make it more complex when it comes to deciding what to trade.

So in our special "Volatility Focus" on page 24, we explore the universe of vol products and how they're related to one another. It's mostly centered around the Cboe Volatility Index (VIX), the granddaddy of volatility indices, but we'll break down the full genealogy chart of vol to show how these products are structured and help you better track their movement.

It wasn't so long ago when volatility was simply an abstract concept. Something traders just had to deal with, like the weather—not knowing from one day to the next how much risk they could expect to confront. But now, with data, charts, and technology, not only is vol more transparent, but perhaps it's even a trader's best friend. So bring it on, 2020. Give us what you got. We can take it.

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

PHOTOGRAPH: DAN SAELINGER | ILLUSTRATION: RANDALL WATSON

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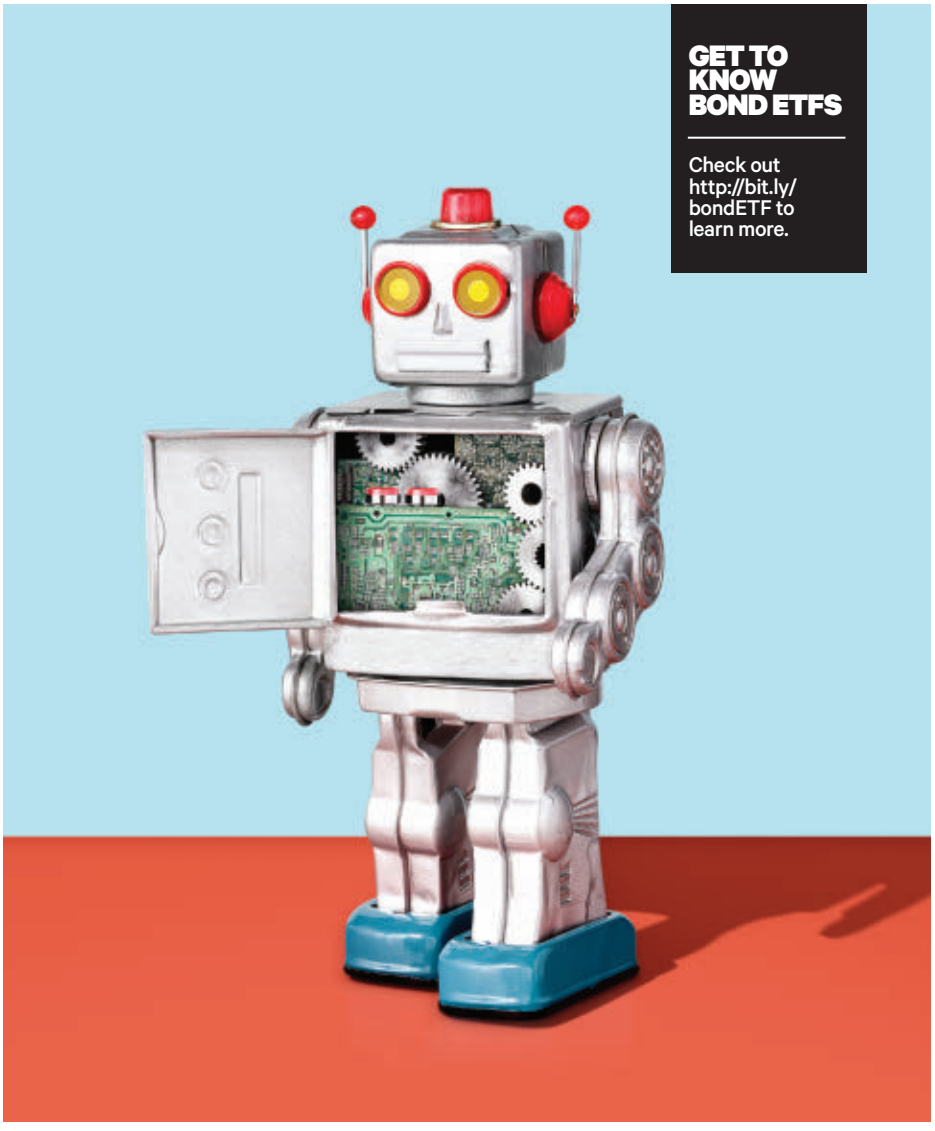
Transaction costs are important factors and should be considered when evaluating any options trade. For simplicity, the examples in these articles do not include transaction costs. At TD Ameritrade, online options orders are $0.65 per contract. Orders placed by other means will have higher transaction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



GET TO KNOW BOND ETFS

Check out http://bit.ly/bondETF to learn more.

INDUSTRY SPOTLIGHT

How a Bond ETF Builds Its Portfolio

When you have a bunch of bonds wrapped up in an exchange-traded fund (ETF), their values change as yields increase or decrease. But what really goes on beneath the wrapper?

• NEW EXCHANGE-TRADED FUNDS (ETFs) have been rolling off the assembly line ever since the concept was first cooked up, giving self-directed traders and investors additional securities to add to their watch lists. But ETFs aren't all alike. ETFs of different asset classes may generally serve the same purpose, but their mechanics can vary.

When equities show signs of trouble, investors and traders often turn to bonds. But bonds trade differently from stocks. Does that mean bond ETFs also trade differently?

A BUNCH OF BONDS

Bond ETFs can be made up of many bonds that target different sectors—anything from U.S. government bonds to emerging market debt.

When you invest in bonds, you receive a regular payment plus the principal. So why do bond values change? The answer can get complicated. Just remember that the relationship between a bond's coupon and its prevailing price is in the bond's yield. When the bond's market price declines, its yield goes up. When the price increases, the yield goes down. But bond ETFs hold many bonds with different yields and maturity dates. How is an ETF's yield calculated?

BOND ETFS AND YIELD

There are different ways to calculate the yields of bond ETFs—the 30-day SEC yield, average yield, distribution yield, and 12-month trailing yield, to name a few. Municipal bonds and Treasury Inflation-Protection Securities use other measures. In addition to yield measurement metrics, there're some additional points to consider.

Bond ETF values. When bond prices fall, the value of bond ETFs are likely to follow suit. Prices are inversely related to interest rates, so when rates rise, bond values fall.

Interest payments. Bond investors receive regular payments, usually every six months. Because bond ETFs hold multiple bonds, investors often receive coupon payments more frequently, typically monthly.

PHOTOGRAPH: DAN SAELINGER

Payments may vary from month to month.

Index tracking. Bond ETFs typically track a specific bond index so they include only the select bonds that best represent an index. All bonds aren't included because of the over-the-counter nature of the bond market. Acquiring all the bonds could lead to high transaction costs.

Pricing. Bonds aren't traded on exchanges the way stocks are, but most highly liquid bond ETFs trade on a stock exchange or secondary market. This allows investors to buy and sell bond ETFs on the exchange. Some bond ETFs trade on the primary market, which involves the creation or redemption of ETF shares by authorized participants (APs), who are broker/dealers or market makers. A bond ETF's price is usually an estimate. Because ETFs are traded on an exchange, their prices can vary from the value of the underlying bonds. But arbitrage by authorized participants helps keep the ETF prices in line with the NAV of the underlying bonds.

BONDS BOTTOM LINE

Even though bonds trade differently from stocks, when they're wrapped up in an ETF, mechanisms are put in place that make bond ETFs trade more like their equity counterparts. Still, they're not exactly the same. There's more to bond ETFs than the price and volume data you see on your screen. Knowing how the underlying bonds work and how they affect ETF prices can add another dimension to your analytical skills.

Carefully consider the investment objectives, risks, charges and expenses before investing. A prospectus, obtained by calling 800-669-3900, contains this and other important information about an investment company. Read carefully before investing.

Investing in bonds has principal risks associated with changes in interest rates and the risk of default, when an issuer will be unable to make income or principal payments. Investments in bond funds are not insured or guaranteed by the Federal Deposit Insurance Corporation (FDIC) or any other government agency. Bonds and bond funds will typically decrease in value as interest rates rise.

THINKTANK

Movers and Shakers

Deciding what to trade can be one of the most challenging aspects of trading. How do you find stocks with the greatest momentum? Should you look for price reversals? How do different assets move relative to each other? Here are some tools you could use to narrow down your choices.

Earnings Analysis: BE PREPARED

Earnings season is a big one—active traders live for it. That's when stock prices can make big moves up or down. It can be a time of potential opportunity, but also a time of risk. You know when earnings will be released, but what you don't know is what those earnings numbers will be. And that means you'll have to prepare for the uncertainty. Here's how you could find earnings candidates.

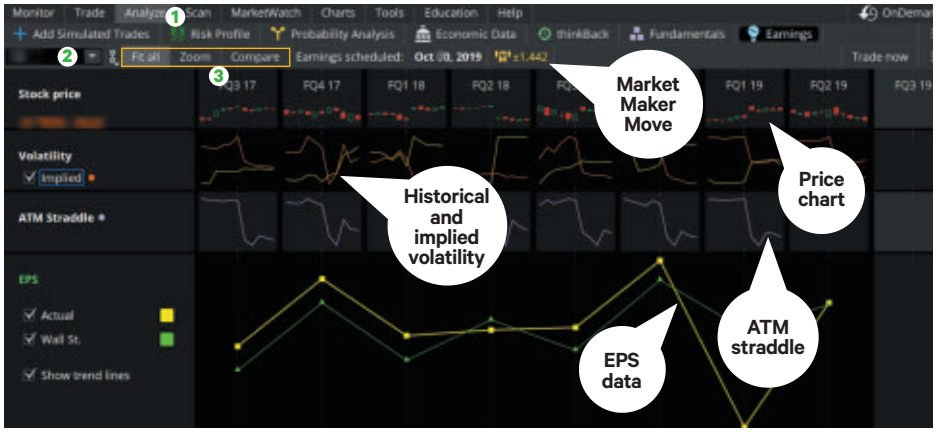


FIGURE 1: Finding earnings candidates. The Earnings sub-tab offers various data points that can help you compare price and volatility information from past quarters. This information could be used to get some idea of price direction and momentum for upcoming earnings. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

Fire up your thinkorswim® platform from TD Ameritrade (live account). See Figure 1.

1– Select the **Analyze** tab, then **Earnings**.

2– Enter the stock symbol of the company expected to release earnings.

3– There are three ways to view the earnings info—Fit All, Zoom, and Compare. Fit All (default) displays all the data points on your screen. Zoom displays intraday so you can zoom in on stock price and options volatility (vol). In the Compare view, you can overlay price and vol data of past quarters to compare the results.

In the Fit All view, you'll see the:

- Market Maker Move indicator
- Price chart
- Volatility (historical and implied)
- At-the-money (ATM) straddle
- Earnings-per-share (EPS) data

Knowing how vol moved around past earnings data doesn't mean it'll do the same thing when future earnings are released, but you may be more informed about the direction and magnitude of the price move.

Sentiment Zone Oscillator: LEVEL UP OR DOWN?

Some traders consider overly bullish and bearish sentiment as indicators for potential reversals. It makes sense. You wouldn't want to go long at the end of an uptrend or short at the end of a downtrend. The Sentiment Zone Oscillator (SZO) indicator, available on the thinkorswim platform, could help you identify overly bullish (overbought) or bearish (oversold) conditions (see Figure 2).

1– Pull up a chart of a stock or index from the **Charts** tab.

2– Select **Studies** > Add **Study** > **All Studies** > **SentimentZoneOscillator**.

3– The indicator is displayed in the lower pane with overbought and oversold levels marked.

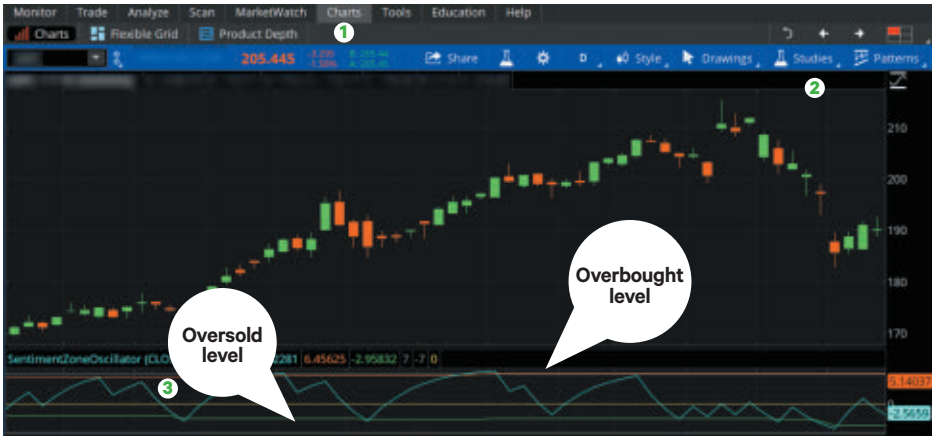


FIGURE 2: Sentiment indicator. From the Charts tab and the Studies menu, add the SentimentZoneOscillator to determine if a stock or index may be overly bullish or bearish. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

Comparing Charts: POWER OF PERCENTAGES

When trading futures, instead of looking at a chart of one contract in isolation, it may be helpful to compare it to a chart of another contract. For example, you may want to look at price movement of the broader indices, or at how crude oil (/CL) contracts are trading relative to the S&P futures (/ES). On the thinkorswim platform, you can choose to show price as a percentage, which helps make an apples-to-apples comparison of price movement between two contracts. You'll need to enable this in the chart settings dialog box (see Figure 3).

1– Select the gear icon on your charts.

2– Select **Price axis** > **Show bubbles as percentage** > **OK.**

3– Enter the symbol of a futures contract, in this case /ES, in the symbol box.

4– Select the **Studies** icon > **Add study** > **Compare with**. If you don't see the symbol of the contract you want to add to the chart, you can create a custom symbol.

After making your selections—and it's a good idea to make the colors of each plot different—you should see the charts displayed together on a percentage basis. This helps identify which contract is stronger or weaker relative to the other. Analyzing such relationships could be useful in making trading decisions.

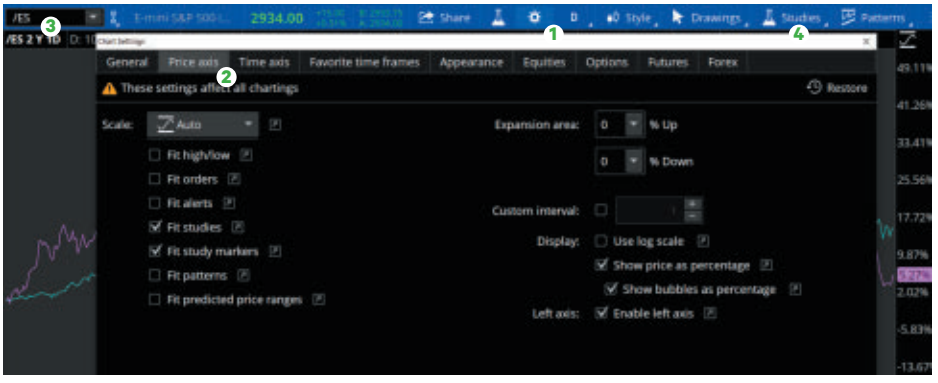


FIGURE 3: Comparing charts. It's a good idea to have prices displayed as a percentage when analyzing valuations between two contracts. This makes it easier to see which contract is stronger or weaker. *Source: thinkorswim from TD Ameritrade. For illustrative purposes only.*

BE THE MONKEY

If you haven't had your chuckle today, head over to the **Swim Lessons** chat room and shoot the breeze with fellow traders. Access it from the thinkorswim platform.

The comments are excerpts from chat rooms, emails, and tweets submitted by TD Ameritrade clients, and are their views and may not reflect those of TD Ameritrade. Testimonials may not be representative of the experience of other clients and are no guarantee of future performance or success. TD Ameritrade reserves the right to modify Chat Room Quips for grammar, consistency, and similar purposes.

LET'S GET CHATTING

CHAT SWIMMER #1
I couldn't log into the chat rooms or look up any charts yesterday.
CHAT SWIMMER #2
I was advised to adjust my memory. It helped out a lot.
CHAT SWIMMER #1
I can access my subconscious mind to adjust my memory.

CHAT SWIMMER #1
I've got my "system" to a point where I'm not so stressed. But when the market moves a lot, it keeps me moving.
CHAT SWIMMER #2
I got ya. At my age, I don't feel the "need to speed" or any sort of adrenaline rush. Just sayin'. I remember my first car. That was in 1971—a Camaro Z-28. Times were different then.

CHAT SWIMMER #1
I'm a newbie here. Can someone tell me when the market will go to 4K?
CHAT SWIMMER #2
The market is limited to 1080p.

UPCOMING EVENTS

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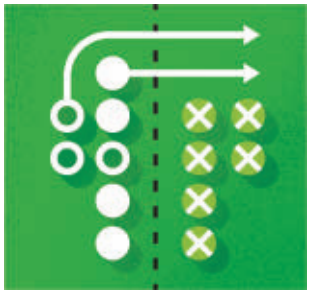
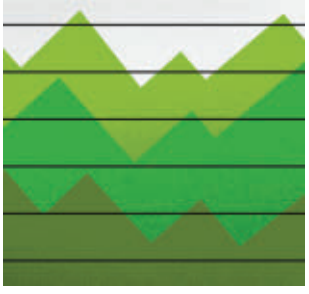


Advanced Concepts Workshop
Dive deeper into options trading strategies and learn about options greeks, calendars, diagonal spreads, and iron condors.

UPCOMING LOCATIONS
Miami, Chicago

Investing Fundamentals Workshop
When it comes to your long-term holdings, you'll need to think about asset allocation, portfolio diversification, and incorporating mutual funds and ETFs into your portfolio.

UPCOMING LOCATIONS
Denver



Technical Analysis & Options Strategies Workshop
This two-day event covers everything from using charts to placing vertical spreads.

UPCOMING LOCATIONS
Phoenix, Boston, Houston, Orlando, New York

Trading in a Zero-Commission World

Zero commissions is the new buzzword among traders. But how does it impact your profit calculus? Cameron May, education coach at TD Ameritrade Education, gives us the scoop.

CAMERON MAY
EDUCATION COACH
TD Ameritrade, Inc.

• BACK IN OCTOBER, TD Ameritrade dropped its commission charges to $0 for all online trades of U.S. exchange-listed stocks, ETFs, and options (although there's still a 65-cents-per-contract charge on options trades). While this could be a game-changer for all investors, the impact might be seen most prominently in options trading, as it could open up strategy opportunities that some may have previously considered cost-prohibitive. We asked Cameron May to zero in on the new commission structure and how it could affect your options strategy.

Cameron, how would zero commissions affect an option trader?

Let's look at how much you would be paying on commissions in different types of options. I'll start with weekly and other low-premium options. As an example, a 20-cent option on one contract—remember each contract has a 100 multiplier—is $20. Add in commissions and, if it's in the money at expiration, add in exercise/assignment fees, and it can be a pretty high hurdle for small positions. And that's just for single options.

TRADER GLOSSARY
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Let's look at an example of a popular multi-leg spread, the iron condor. It can be attractive, especially around earnings season, because it allows the seller to take advantage of higher premiums while limiting overall risk in case there's a big move. This spread has four legs, which up until a few months ago meant four commissions. The same can be said for rolling a vertical spread from one contract month to another.

Zero commissions can be a benefit when rolling contracts over to the next month. Some traders ride a short option down to the high single digits, and even though buying it in or rolling it to the next contract month may have felt like the right thing to do, traders often hesitate because they want to save on the commissions. Until recently, the TD Ameritrade Nickel Buyback program waived the commission on such trades once they got down to five cents or less. With zero commissions, it's as if the Nickel Buyback program was expanded to, well, everything else.

How has the feedback from your clients been?

It's been great. If you think about it, squeezing an order price, choosing a strike or contract month, or even avoiding certain strategies because of the impact of commissions is kind of like driving across town to save a few cents on gas. Sometimes the math warrants it, and sometimes we do it out of stubbornness. Either way, a zero-commission environment removes a crucial element from the equation.

LEARN MORE ABOUT OPTIONS TRADING STRATEGIES

For more basic educational materials, check out the articles at **http://bit.ly/TM OptBasics**. For more advanced strategies, you may want to try some of the ones you find in these articles: **http://bit.ly/TMAdvOps**

What's your plan for 2020?

With the holidays behind you, and an election year in front of you, what does it all mean for volatility (vol) in 2020? Let's ask our pros at TD Ameritrade.

• We chatted with two TD Ameritrade education coaches, Mike Follett and Ben Watson, to get their thoughts on vol this year.

Mike, as implied volatility (IV) changes in anticipation of and following an earnings announcement, many traders believe all options strike prices and expirations are affected the same way. Can you shed some light on whether this is correct?

I certainly can. You'll need to think of two primary principles.

The first is that options with more time remaining to expiration and with strike prices closer to the price of the stock have a greater sensitivity to changes in IV. Traders can track how sensitive options are to a one-point change in IV by using options greeks. Vega is the greek that indicates how much an options price might change with a one-percentage-point change in IV.

The second principle is that IV changes tend to be much more volatile in options with expirations that are closer to the earnings date. When looking at a regular option chain, you can see that average IVs in options closest to the given event are often higher than those with longer durations.

Let's go through a hypothetical example. For the trading day before the earnings announcement of XYZ, let's say the options expiring that week had an average IV of around 90%. The options expiring three weeks later had an average IV of around 45%. After the earnings release, IV averages for both expirations settled in at around 35%. Although the longer-dated expirations had greater sensitivity to vol change, the near-term options prices felt a greater impact because of the magnitude of falling vol specific to that expiration.

Generally speaking, before an earnings announcement, average IV will skew positive, meaning IV averages are higher in shorter durations. When market prices are calm, options IV averages tend to be in a negative skew.

Ben, if historical volatility (HV) is a measure of the fluctuation of past stock prices, and IV is an estimate of future fluctuations, why do the two measures sometimes differ from one another? Does that indicate a trading opportunity?

First, it's important to understand what each of the measurements is really taking into account. We need to know why the two may diverge and if it's something traders can exploit. Let's take a look at these two vol measures independently.

HV is the volatility experienced by the underlying stock in terms of the annualized standard deviation of percentage changes in the stock price. For example, a stock with an HV of 15 is less volatile than a stock with an HV of 25. A stock may have an HV of 40 during one time period, which may be more than its HV of 20 during another time period. HV is sometimes called realized volatility because it reflects actual price moves.

IV is a look ahead at the market's expectation for the future volatility of a stock's price. Because of the supply and demand aspect of options pricing, IV often rises ahead of expected stock price moves and falls after events such as earnings announcements.

How might you put this to work? When IV is above HV in the same time frame, then the market expects (via options demand) that the stock may become more volatile than it has been. Likewise, if IV is lower than HV, the market expectations may be diminished. Stock traders may use this information to inform decisions based on stock price volatility such as stop orders and entry triggers. Option traders may look for circumstances where IV is low, but HV is high, which could indicate that options are underpriced relative to the potential stock price movement. No single form of analysis, including volatility analysis, guarantees future price movement.

PHOTOGRAPH: DAN SAELINGER

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TAKE AWAY:
Strategies to consider when trading low-priced, volatile stocks.

DOESN'T MEAN Y

NY YOU CAN'T DANCE

BIG IDEA:
WHO SAYS YOU CAN'T PARTY WITH THE BIG FISH? EVEN WITH A SMALL ACCOUNT, THERE ARE WAYS YOU CAN GET ADDED TO THE VIP LIST.

WORDS BY **KEVIN LUND** / PHOTOGRAPHS BY **DAN SAELINGER**

IN A WORLD

filled with expensive stocks, traders with smaller accounts (say, less than $5,000) may feel like they're priced out of the market. Trading opportunities for high-flying stocks, some of which may trade over $1,000 or require bigger margins for short strategies, may be out of reach for the smaller trader.

That doesn't mean you can't try to get a similar bang for your buck as a bigger player. Size is relative: $200 or $20—it doesn't matter. If the implied volatility (IV) in the $200 stock is the same as in the $20 stock, that $20 stock might offer you the same risk/return percentage, but with smaller margin requirements. With options, there are ways you can play alongside the pros. Consider three strategies that can put you on par with big traders.

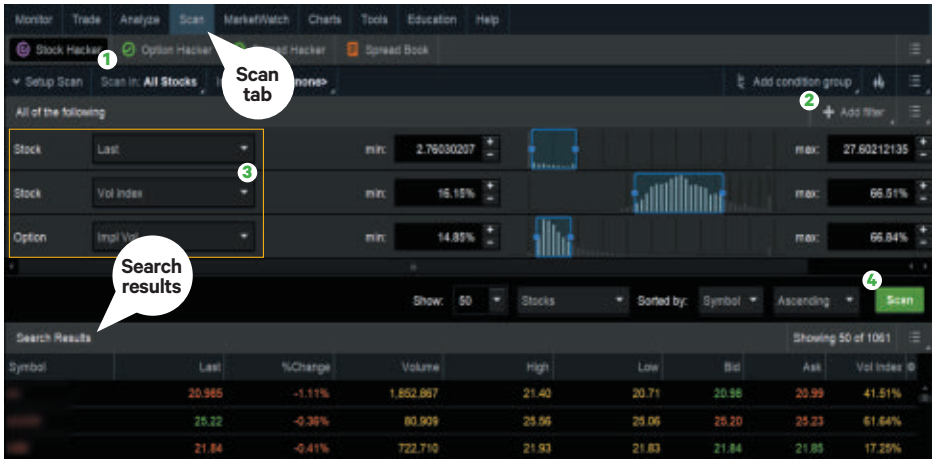

FIGURE 1: Scanning for stocks. **The Scan tab on the thinkorswim platform from TD Ameritrade offers several scanning tools, including Stock Hacker, Option Hacker, Spread Hacker, and Spread Book. Within these categories, you can set up a scan by choosing different filters.** *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

1. From the **Scan** tab, select **Stock Hacker**, where you can mix and match multiple filters for stocks and options to find scans that would make even the big guys blush.
2. Select from any of the filters—stocks, options, study, fundamental, and pattern. You don't need to use them all.
3. Maybe start with a filter for the minimum and maximum stock price, add a filter to scan stocks based on their vol index, and add one for options IV.
4. Select **Scan**, and put the platform to work. You'll see the search results listed.

ON THE CHEAP

Strategy: Think about selling puts on cheap stocks.

What is it? If selling puts is your thing, you may find that smaller accounts can get priced out of this strategy because of higher margin requirements. And the higher the stock price, the bigger the requirement is likely to be. A short put on a $1,000 stock, or even a $250 stock, can easily mean margin requirements in the thousands of dollars or more. Then, if things turn nasty and you're short a put on a stock that's falling, you could be required to ante up additional capital. Even selling put vertical spreads, which can have less risk, could easily tie up your account with margin requirements, depending on the price of the stock and your strike selection.

TRADER GLOSSARY
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Just because you can't afford to sell puts on pricier stocks doesn't always mean you can't get in on the action. Think about looking for another stock in the same sector with similar IV to the high-priced giant but with a lower price—maybe $25 instead of $250. Because the IV is similar, the cheap stock may offer a similar risk/return to the expensive stock, but the margin requirement isn't going to be nearly as steep.

You can fire up the thinkorswim® platform from TD Ameritrade and use the tools to find inexpensive stocks with volatility (vol) profiles that are to your liking (see Figure 1).

SCALPING YOUR WAY

Strategy: Consider scalping directional bets.

What is it? Scalping is trader-speak for pursuing small, incremental profits on trades with short holding times. Futures contracts are often used by the savvier traders for scalps. But many of them may use liquid options, too. Penny-increment options, for example, tend to be fairly liquid.

You may want to avoid options with wide bid/ask spreads. A wider bid/ask spread means you could pay more when you buy and collect less when you sell, and that'll hurt your overall bottom line. Also, watch out for poor liquidity—it makes it harder to get in and out at prices you want. What does poor liquidity look like? Illiquid options tend to have low open interest and wide bid/ask spreads.

You might also consider at-the-money or slightly in-the-money options. These may move faster than out-of-the-money (OTM) options and can be a useful choice, as the whole point of scalping is to get in and out efficiently. Keep in mind that OTM options require more movement

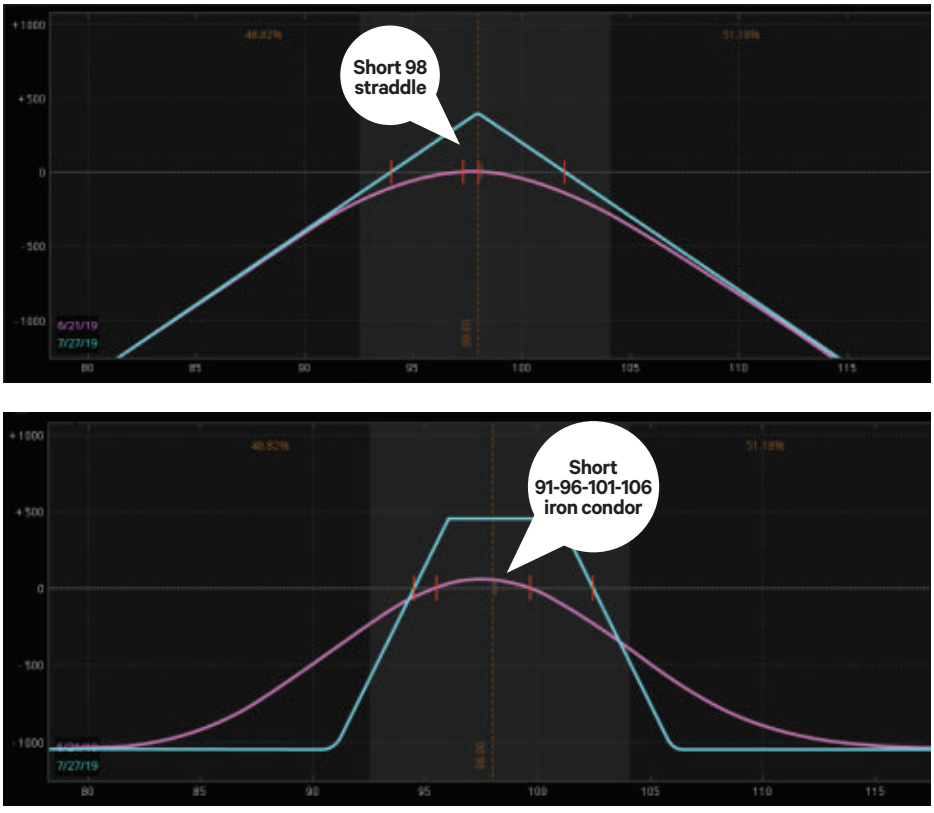


FIGURE 2: Short straddle versus iron condor. **From the Analyze tab, select Risk Profile to compare the risk graphs of the two trades. Even though the break-even point in both trades is similar, the short straddle is riskier.**
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

in the underlying, so it can take a much bigger change in the underlying price before those OTM options begin to move. Slower-moving options can mean fewer scalping spots.

STRANGLING A STOCK

Strategy: Iron condors or butterflies in lieu of short straddles.

What is it? Let's face it. Short straddles are high-risk trades. And if you're a smaller trader, you likely can't afford the margin on them anyway. A possible alternative is to use defined-risk iron condors or iron butterflies. It's basically the same concept—you short either a straddle or strangle to collect a premium as the options decay or drop from an IV implosion. But you add a measure of protection and therefore lower your margin requirement by buying a further OTM strangle.

Yes, buying that OTM strangle reduces the total credit you receive. But without it, a short straddle (or strangle) might not be viable. Even if you can cover the margin, you might not be able to trade more than one or two. With an iron condor, depending on the price of the stock and the IV of the options, you can adjust your long/short strikes until you can afford to do something bigger.

How does this work? Say a stock is trading at $98, and a short 98 straddle for $4 (minus trading costs) requires a margin of approximately $2,000. On the other hand, the 91-96-101-106 iron condor for a credit of $1.50 (minus trading costs) requires roughly $350 of margin. For a little more than half the cost of the straddle margin, you could sell three iron condors. Plus, there's no maintenance margin requirement should the trade move against you (see Figure 2).

Compare the risk graph of one short 98 straddle for $4 versus three short 91-96-101-106 iron condors for a net credit of $1.50 (commission costs not included).

The two trades also have similar break-even points if they're held until expiration. The straddle breaks even at $94 ($98 – $4) if the stock drops and $102 ($98 + $4) when the stock rises. The break-even points for the iron condor are $0.50 better on both sides—$94.50 ($96 – $1.50) and $102.50 ($101 + $1.50) respectively.

Take note that the short straddle has more risk than the initial margin is going to cover. The iron condor's risk is fixed and is less than the straddle, even for the three iron condors in this example. Yet, the iron condor can generate more theoretical potential profit at $4.50 if the stock settles between $96 and $101, compared to the short straddle that needs the stock to settle exactly at $98 to achieve a max profit of $4. Keep in mind that the trade could go against you and you may risk losing on the trade.

WHO NEEDS THOSE HIGH-FLYERS? With options, strategies that are out of reach for smaller traders probably have close cousins you'd be happy to dance the night away with.

Kevin Lund 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.

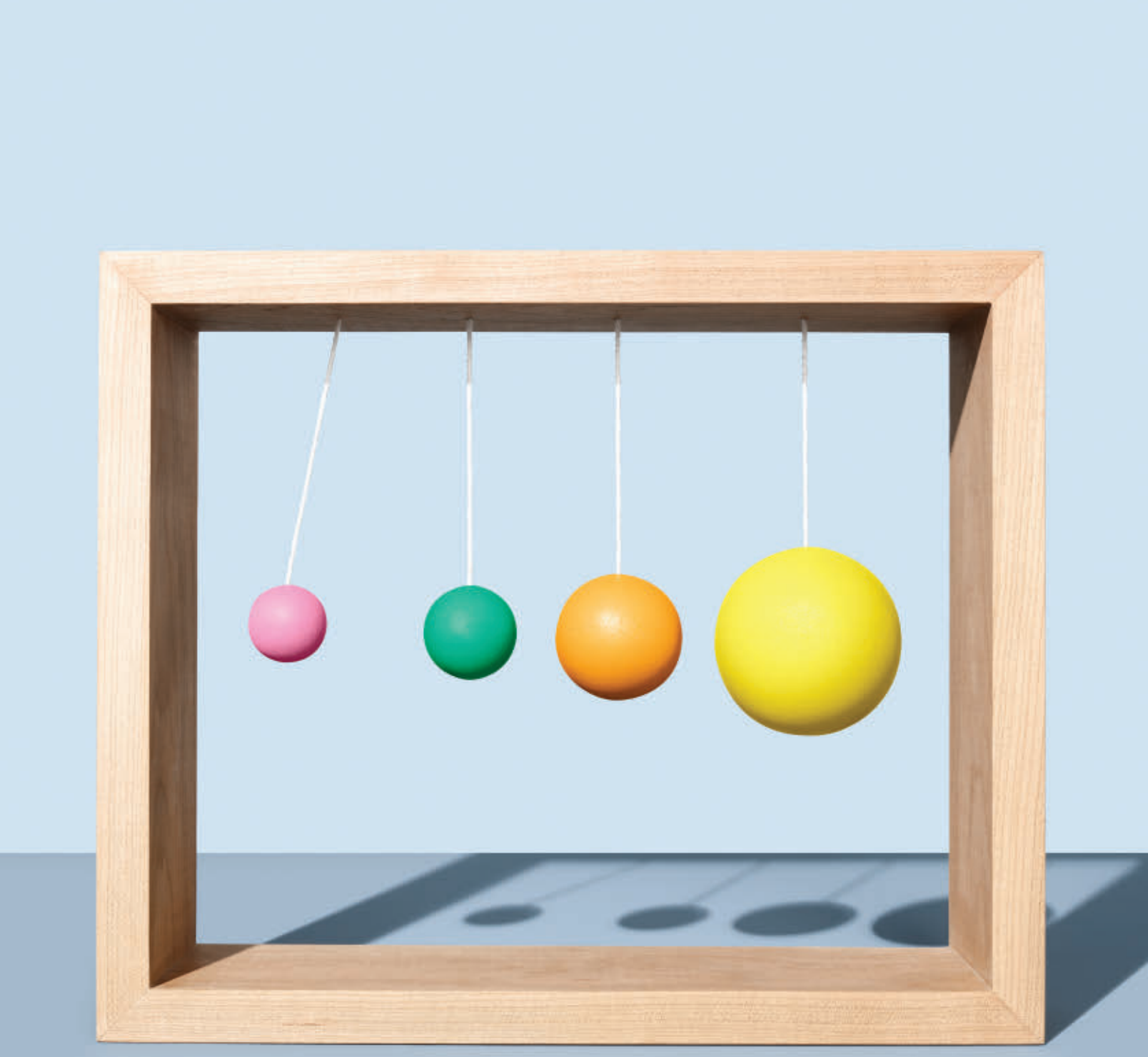
SKILL LEVEL **PRO**

TAKE AWAY:
Three ways to play gamma before it gets you.

THE SECRET TURBO OF OPTIONS (A GAMMA REDUX)

BIG IDEA:
TEN, NINE, EIGHT ... AS OPTIONS GET CLOSER TO AN EXPIRATION DATE, THINGS CAN GET WONKY FAST AND HIT YOU WITH SURPRISES. GET TO KNOW GAMMA TO POTENTIALLY AVOID THESE SPEED TRAPS. WORDS BY **MARK AMBROSE**

PHOTOGRAPHS BY DAN SAELINGER



For option traders, the greeks are your pals because they help you assess risk and potential opportunity. Delta lets you bet on the direction of the stock price, vega lets you bet on the direction of volatility, and theta lets you bet on time passing. Heck, even rho lets you bet on interest rates. But what does gamma let you bet on?

GOOD OL' GAMMA

Of the four big greeks, gamma is the only second-order derivative. Delta is a first-order derivative (the change in the price of an option with respect to a change in the stock price). Gamma is one more step away from the options price itself. That makes gamma somewhat tougher to use as a speculative tool. But that doesn't mean you should ignore it. Gamma is the greek that might not seem like a big deal today but could become a big deal tomorrow. When a trade's delta is getting you into trouble, gamma is likely to blame.

Consider it this way: Gamma increases or decreases an options position's delta when the stock price changes. Long options—both

puts and calls—have positive gamma, and short options have negative gamma.

Say XYZ stock is trading at $100. The 102 call has 0.40 delta and 0.03 gamma. The 97 put has -0.30 delta and 0.02 gamma. If XYZ goes up $1 to $101, all things being equal, the delta of the 102 call goes to 0.43, while the delta of the 97 put goes to -0.28.

On the other hand, if XYZ drops $1 to $99, all things being equal, the delta of the 102 call goes to 0.37 and the delta of the 97 put goes to -0.32.

As you can see, gamma "manufactures" call deltas when a stock rallies and put deltas when a stock drops. It "un-manufactures" call deltas when the stock drops and put deltas when the stock rallies. In practice, if you're short a call and the stock rallies, the position's delta risk increases as the stock price goes up. In fact, it's gamma that's increasing the call's delta. That's why gamma is important. If you were to look at delta in terms of risk, XYZ's 102 call with 0.40 delta has a theoretical risk similar to 40 shares of XYZ. When XYZ's price went up, the 102 call had a risk similar to 43 shares of XYZ.

The risk of an options position in delta terms, then, isn't static. It generally changes when the stock price moves. But the gamma of the option determines how much the risk changes. The higher the gamma, the more delta can change when a stock price moves. The lower the gamma, the less the delta can change when a stock price moves.

Gamma is highest for at-the-money (ATM) calls and puts. It gets successively lower as the calls and puts move further out of the money (OTM). All things being equal, the delta of an ATM option will theoretically change more than the delta of an OTM option when the stock price changes.

Gamma is also highest for ATM options closer to expiration. It gets successively lower the more time to expiration an option has. All things being equal, gamma is lower when there's more time to expiration and higher with less time to expiration.

GAMMA MEASURES MAGNITUDE

Read more about how gamma and delta work together in "Unpacking Gamma—Delta's Evil Enabler." Visit **http://bit.ly/TMgamma**

Let's look at an example. With the SPX at 3020, the 3020 call with seven days to expiration (DTE) has a gamma of 0.0088, while the 3020 call with 60 DTE has a gamma of 0.0031—almost 3x smaller (see Figure 1). The deltas of those options were relatively the same at 0.52 and 0.54 for the five-day and 60-day 3020 calls, respectively. Although both calls had roughly the same delta exposure, their deltas had significantly different gamma exposure. As an option approaches expiration, its gamma can increase a lot more than its delta. Therefore, simply looking at the delta doesn't tell you all you need to know about risk. The gamma indicates how stable the delta would be if the stock or index should move.

THE GAMMA RIDDLE

As you can see, gamma can move around even without a stock price changing. That's why you need to keep an eye on your position's gamma.

Regarding DTE and strike price, gamma can also be like theta. The closer an option is to the stock price, the higher its gamma and theta. And close to expiration, an option with a strike price close to the stock price can have very high gamma and theta. That leads to a trading conundrum. If you're short an option in pursuit of positive theta, an option with less time to expiration will have a theoretically high positive theta. But that option will also have theoretically high negative gamma. As expiration approaches, the risk on a short option can go from mild to hair-raising quickly if the stock price moves around a lot. What's a trader to do?

For option traders, there are three general ways to manage gamma risk: close, roll, or hedge. Let's review each.

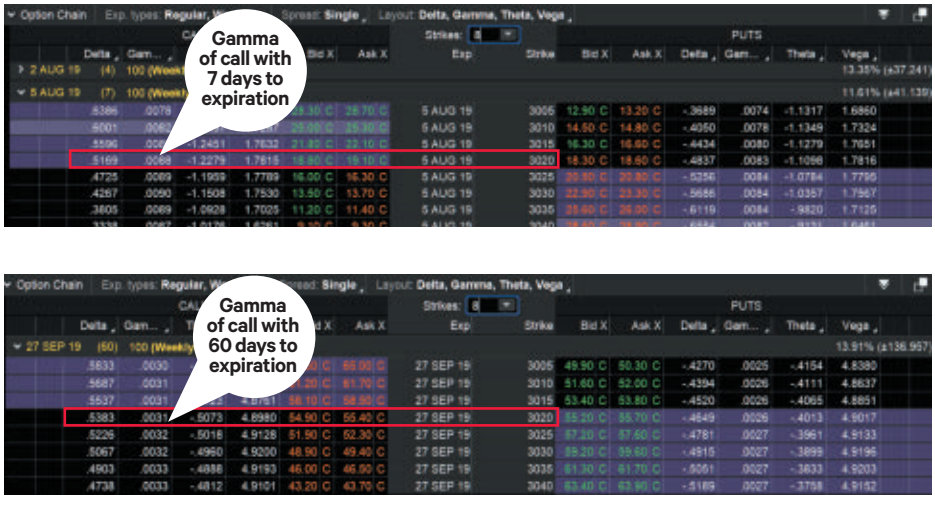


FIGURE 1: Monitor gamma. From the Analyze tab, bring up the option chain on your thinkorswim® platform. Gamma for options closer to expiration tends to be higher than for options of similar strikes with more time to expiration. Monitoring changes in gamma can add another layer when figuring out a position's risk.

Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

Close

During expiration week when the gamma of an option is growing and making your options position's delta less stable, you may choose to close a position if it has a profit. Here, the position's delta can change so dramatically when gamma is high that a relatively small change in the stock price can wipe out a profit and potentially create a losing trade.

For example, if the Dow Jones Industrial Average index options (DJX) are at 260, the 259 put with four DTE has a delta of -0.39 and a gamma of 0.08. Assume you sold that put for a $4 credit a couple months before. Now it's worth about $1.25, giving you a profit (without taking transaction costs into account). If you hold that put and think you're comfortable theoretically making $39 if DJX goes up $1 or losing $39 if DJX goes down $1, you need to look at the gamma. If DJX drops $1, the short 259 put's delta would theoretically go from -0.39 to -0.47, more than a 20% increase in risk. More than you're comfortable with? Sometimes discretion is the better part of valor. Closing the trade, exiting the risk, taking the profit, and moving on to the next one can be something to consider.

TRADER GLOSSARY
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On the other hand, if the options trade is losing money, particularly if it's a long position, it might be worth holding it to see if the higher gamma can manufacture deltas the "right" way to either reduce the size of the loss or even turn it into a profit.

Roll

When you've got two or three weeks to expiration and you want to maintain a position but reduce its gamma, rolling is a potential strategy. Say DJX is at 260 and you have a 259 DJX put that has, say, 18 days until expiration. It has -0.43 delta and 0.04 gamma. All things being equal, its short gamma will start to grow. But if you still want to maintain a bullish, positive delta position in the DJX using a short put, you could consider rolling the short put to a further expiration and to a strike that has a similar delta as your current 259 put. Or, you could consider rolling the 259 put with 18 DTE to the 259 put with 53 DTE that has -0.41 delta but only 0.02 gamma. Rolling maintains roughly the same delta exposure but cuts the delta risk in half. Yes, you're giving up some positive theta because the 259 put with 53 days has less theta than the 259 put with 18 days. But that's the trade-off you have to make if you want to reduce your short gamma. Note that rolling strategies will incur additional transaction costs.

Hedge

When an options trade has three weeks or more to expiration, you may choose to reduce its gamma exposure with a hedge. For example, short options have negative gamma, and long options have positive gamma. Combined, a long and short options position will have a lower gamma than each option alone. So, if you have a short OTM put with negative gamma you deem too high, you could reduce the position's gamma by buying a further OTM put. That long put will turn the short put into a short put vertical and will offset the negative gamma of the short put. Buying a further OTM put can significantly decrease the gamma risk.

Consider a 259 DJX put with 50 DTE with the DJX at 260. It has -0.43 delta and 0.033 gamma. You could reduce your gamma risk by buying a 254 put in the same expiration that has -0.28 delta and 0.025 gamma. That would create a short 254/259 put vertical with -0.15 delta and 0.008 gamma. While you significantly reduce your gamma risk with this kind of hedge, you also reduce the delta, giving the short put vertical less risk overall than the naked short put.

NATURALLY, THESE ARE ONLY suggestions, and you can choose to close, roll, or hedge an options strategy at any time. However, it's important to understand how gamma is affected by the number of DTE. Consider closing options with short times to expiration, rolling medium-term options, and hedging longer-term options. It's one way to incorporate that gamma information. Just make sure you control your gamma, lest it ends up controlling you.

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

BETA WEIGHTING GAMMA IN YOUR PORTFOLIO

Here's a quick tip. You can beta weight the deltas of your portfolio in the **Position Statement** section of the **Monitor** tab of the thinkorswim® platform from TD Ameritrade (see Figure 2). And when you do that, you also beta weight your portfolio's gamma. Simply choose gamma from the list of available items to display in the columns. You'll then see the overall gamma of your portfolio and the gamma of each position in terms of the beta-weighting symbol. It's a handy tool to identify positions that have relatively greater gamma risk.

FIGURE 2: Gamma relative to delta. Knowing how much gamma you have relative to delta can help you determine how much a position's delta is likely to move if a stock's price moves. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

SPECIAL FOCUS

UNPACKING FEAR AND VOLATILITY

BIG IDEA: THE UNIVERSE OF VOLATILITY PRODUCTS SEEMS TO GROW AND GROW. LET'S BREAK IT INTO CHEWABLE BITE-SIZE PIECES AND CONSIDER THE PROS, CONS, AND RISKS.

WORDS BY **THOMAS PRESTON**
PHOTOGRAPHS BY DAN SAELINGER

SKILL LEVEL **SAVVY**

TAKE AWAY:
Create trading strategy ideas based on relationships between volatility products.

Market volatility. It can conjure fear in the unprepared but create potential opportunity for the seasoned trader. Volatility (vol) has been around for as long as humans have been thinking about the price of things, maybe even before money. Whether it's our cave-dwelling ancestor's new stone tool valued in terms of a pile of sweet berries, or our neighbor's new hot rod priced in dollars, values change in unpredictable ways. That's volatility.

BACK TO VOL SCHOOL

Vol is simply the magnitude of changes in price—whether it's a stock, index, your house, or a loaf of bread. For example, if one loaf of bread costs $2 the first day, $3.50 the next day, and $0.20 the day after that, and another loaf of bread costs $2.50 the first day, $2.60 the next day, and $2.55 the day after that, we'd say the first loaf of bread is more volatile. The same is true for two stocks. A stock with widely varying price fluctuations is, in effect, more volatile than one with smaller fluctuations.

Vol is expressed in percentage terms. This normalizes volatility so that the vol of two things can be compared in a straightforward way. A $10 stock that moves up and down $1 is experiencing 10% price changes, while a $1,000 stock that moves up and down $1 is experiencing price changes of 0.1%. Even though both stocks are moving $1, the $10 stock is more volatile. So no matter how complex vol might seem, it's simply a metric that indicates the price changes of a stock or index.

TRADER GLOSSARY
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For option traders, understanding vol is key. All things being equal, the theoretical value of an option will be higher if vol is higher and lower if vol is lower. This can help traders choose among strategies, such as credit spreads or short options if vol is higher, or debit spreads or long options if vol is lower. Further, options prices themselves can be turned into "implied volatility" (IV). That's the vol after calculating an options pricing model that creates a theoretical value for an option equal to its market price.

Vol can be backward-looking (historical vol) if it uses historical stock prices to calculate the standard deviations of returns. Vol can be forward-looking (IV) when options prices are used to estimate how much a stock might move up or down in the future. Let's focus on forward-looking IV.

THE SPX BONE IS CONNECTED TO THE VIX BONE

The Cboe Volatility Index (VIX) is one of the most popular and widely known measure of vol. It's used as a metric for "the market's" overall vol and does a pretty good job. But the VIX doesn't exist in a vacuum. It's calculated from S&P 500 Index (SPX) options prices.

Essentially, the VIX is a strike-weighted average of out-of-the-money SPX calls and puts.

As SPX options prices get pushed up and down, due to trading activity and market expectations of the magnitude of potential price changes in the SPX, they in turn move the VIX. The SPX options then beget the VIX. No SPX options, no VIX.

The VIX itself isn't really a tradable product. Well, that's not really true because you could theoretically buy or sell every single SPX option that goes into the VIX calculation and trade what's called a "variance swap." But that's not likely a viable strategy for a self-directed trader, mainly because of the enormous commissions, execution costs, and large capital requirements. A more viable approach would be to trade vol products. For a breakdown, see "All Roads Lead to VIX" on page 26.

CLEARLY THE VIX IS AN IMPORTANT tool for gauging market sentiment. And it's just the beginning. Savvy option traders know what goes into VIX, what comes out of it, and how to use it effectively to help determine their trading strategies. When innovations in vol products are introduced to self-directed investors, it's critical to understand these foundational concepts so you can make sense of them. If you don't, you could either miss a potential opportunity because the product is confusing, or you could take undue risks. Knowledge gives you control. And control is a good thing to have when trading something as potentially wild as volatility.

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 and futures, see page 38, #1– 2.

LONG LIVE VXX

Before 2019, the VXX was an actively traded exchange-traded note (ETN)—a way for investors to speculate on the direction of vol. In January 2019, the VXX portfolio was liquidated, and the product delisted by its issuer, Barclays.

To replicate the performance of the market's volatility (i.e., the Cboe VIX), VXX held a portfolio of long /VX futures. But when the /VX futures expired, the VXX would expire with them. To solve this, the VXX had to roll its position in a /VX futures in the near-term expiration to the /VX futures in the next expiration. It did this roll every day.

For example, on day one, the January /VX futures is the front month, and the VXX would be 100% in the January /VX futures. The next day, VXX would sell some of its January /VX and buy an equivalent amount of February /VX. This way, when the January /VX futures had expired, the VXX portfolio would be 100% in February /VX.

That daily roll is a problem, though. Very often, the second-month /VX futures is in contango to (higher than) the front-month /VX futures. Sometimes the /VX futures were in backwardation, with the front-month /VX trading over the next-month /VX.

Losses from the daily roll when /VX futures were in contango dragged on the VXX's price. This price decline was never going to end, and when the VXX's actual charter expired 10 years after its creation in 2009, Barclays closed it down.

But because the VXX had been popular, Barclays created a new ETN, VXXB, to replace it. VXXB matures in 30 years instead of VXX's 10 years. VXXB is also "callable" by Barclays. However, its portfolio is still composed of /VX futures and is still impacted by the rolls. Also, Barclays renamed VXXB to VXX in May 2019. So in effect, VXX is back, as well as its options.

Enter VXX into the **Charts** tab of the thinkorswim® platform from TD Ameritrade to see its historical chart. You'll find its options on the **Trade** tab. Just make sure you understand the details of the /VX roll in the VXX before you trade it.

ALL ROADS LEAD TO VIX*

VIX OPTIONS

Cash-settled, European-style options whose value at expiration is based on the VIX settlement price (using the symbol VRO). There isn't really an arbitrage relationship between VIX options prices and the VIX itself until expiration. Before expiration, VIX options are the market's bet on how much the VIX might go up or down, and sometimes their prices don't look like they're based on the VIX price.

VVIX

VIX options get the same treatment as SPX options to create the VVIX, which is the overall vol on the VIX, or the "VIX on the VIX." The VVIX can help with strategy selection for VIX options, just as the VIX can help with strategy selection for SPX options.

TRADING VIX OPTIONS AN EXAMPLE

With the VIX at 13, a VIX 14 put with 90 days to expiration might be trading for 0.40. That looks far below its intrinsic value if you compare its 14-strike price to the VIX at 13. Why? The VIX options look at the /VX VIX futures prices to determine their value before expiration. A January VIX option, for example, is priced off the January /VX futures before expiration, not the VIX itself. As the /VX futures approaches expiration, its price and the VIX tend to converge. As the /VX price and VIX price get closer, a VIX option will still be priced off the /VX futures. But at expiration, when the /VX futures are settled to the settlement price of the VIX (VRO), whether a VIX option is in the money (and settles to its cash value) or OTM (and is worthless), its price is also determined by VRO. In this way, VIX options are priced off their corresponding /VX futures before expiration but settle to the VIX at expiration. And if the 90-day /VX futures is trading at 15, for example, that 14 put is considered OTM. VIX options, even though they're cash-settled, look to the /VX futures that match their expiration for guidance on what vol might be in the future. So, prior to expiration, January VIX options are "priced" off the January /VX futures, March VIX options are "priced" off the March /VX futures, and so on.

ETFs & ETNs

LEVERAGED/INVERSE VOL ETFS:

- UVXY: Leveraged ETF designed to move 1.5x daily amount of short-term /VX futures moves. Holds /VX futures in portfolio but is leveraged so it's more volatile than /VX futures and VXX. Has options.
- SVXY: Inverse ETF on vol that moves up when vol moves down. Designed to move -0.5x daily amount of short-term /VX futures moves. Has options.

GOT VOL? GET IT DAILY

Get regular volatility updates with JJ Kinahan's **Daily Market Update** on *The Ticker Tape*. Go to tickertape.tdameritrade.com/market-news/daily-market-update

Carefully consider the investment objectives, risks, charges, and expenses before investing. A prospectus, obtained by calling 800-669-3900, contains this and other important information about an exchange-traded product. Read carefully before investing.

ETNs are not funds and are not registered investment companies. ETNs are not secured debt and most do not provide principal protection. ETNs involve credit risk. The repayment of the principal, any interest, and the payment of any returns at maturity or upon redemption depend on the issuer's ability to pay. The market value of an ETN may be impacted if the issuer's credit rating is downgraded. ETNs may be subject to specific sector or industry risks.

Leveraged and inverse ETNs are subject to substantial volatility risk and other unique risks that should be understood before investing. ETNs containing components traded in foreign currencies are subject to foreign exchange risk. ETNs may have call features that allow the issuer to call the ETN. A call right by an issuer may adversely affect the value of the notes.

ETFs can entail risks similar to direct stock ownership, including market, sector, or industry risks. Some ETFs may involve international risk, currency risk, commodity risk, leverage risk, credit risk, and interest rate risk. Trading prices may not reflect the net asset value of the underlying securities. Commission fees typically apply.

Cboe VIX is the granddaddy of volatility products and the most widely used. So it's no wonder VIX has fathered so many offspring products to track and trade SPX volatility. Let's break them down.

* VIX prices based on SPX options price

/VX FUTURES

Speculates on what the VIX might be in the future. Prices can move independently of VIX and each other. /VX futures are cash-settled to the same VRO settlement value the VIX has. So, at VIX expiration, the VIX options and /VX futures settle to cash based on VRO. Very convenient.

VXX

Moves in relation to /VX futures and is tied to /VX prices. VXX is an equity exchange-traded note (ETN) based on vol. The VXX is a portfolio of /VX futures that attempts to move up and down with the VIX. If you find VIX options a bit confusing and don't have a futures account in which to trade /VX futures, you could potentially trade shares of VXX. That's the idea behind VXX.

VXX OPTIONS

You can speculate on the VXX using calls and puts that deliver shares of VXX when they expire.

VOLATILITY INDICES

To keep the VIX company, the Cboe's concept of using an option chain to derive an overall IV has been applied to a slew of different indices and asset classes—including stocks, commodities, bonds, and forex—that all have options to create a volatility index for each one. You can get quotes for each of these symbols on the thinkorswim® platform from TD Ameritrade and find historical data on the **Charts** tab.

INDICES

- **VXN:** VIX-style calculation for Nasdaq-100 (NDX) options
- **VXD:** Vol index for DJIA
- **RVX:** Vol index for the Russell 2000

STOCKS

- **VXAZN:** Overall implied vol for AMZN
- **VXAPLZ:** Overall implied vol for AAPL
- **VXGS:** Overall implied vol for GS
- **VXGOG:** Overall implied vol for GOOGL
- **VXIBM:** Overall implied vol for IBM

ETFS

- **OVX:** For UCO (the crude oil ETF)
- **GVZ:** For GLD (the gold ETF)
- **VXEEM:** For EEM (the emerging markets ETF)
- **EVZ:** For FXE (the euro currency ETF)

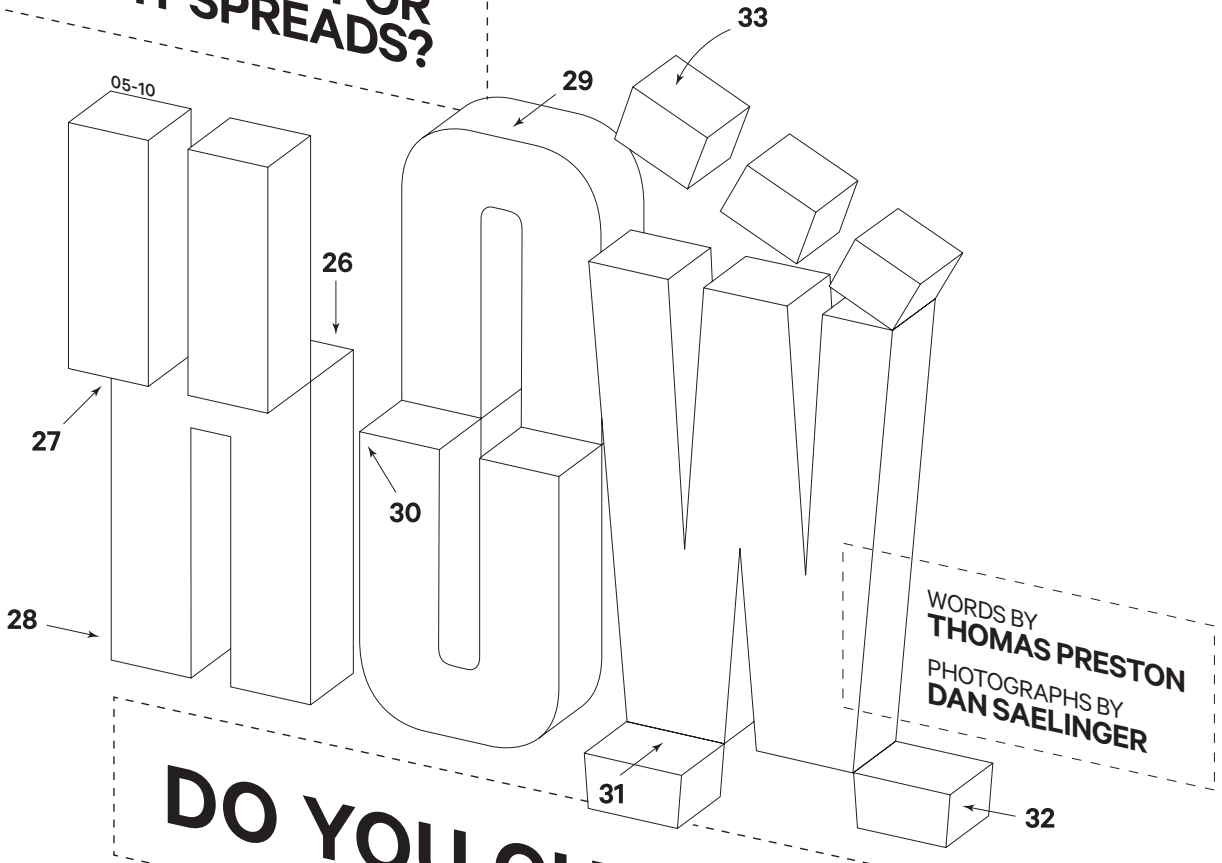
BONDS/FOREX

- **TYVIX:** Overall implied vol for Cboe/CBOT 10-year U.S. Treasury note
- **EUVIX:** Overall implied vol for Cboe/CME euro
- **JYVIX:** Overall implied vol for Cboe/CME Japanese yen
- **BPVIX:** Overall implied vol for Cboe/CME British pound

SKILL LEVEL **EASY**

TAKE AWAY:
A methodical way to help you decide what strikes to trade.

CREDIT OR DEBIT SPREADS?



HOW DO YOU CHOOSE?

WORDS BY
THOMAS PRESTON
PHOTOGRAPHS BY
DAN SAELINGER

BIG IDEA: IV PERCENTILE, CHECK. IMPLIED VOL, CHECK. SPREAD CREDIT/DEBIT … HUH? WHEN EVERYTHING LINES UP, CONSIDER LETTING THE MATH DECIDE THE OPTIMAL STRATEGY.

Part No. P35Alpha629— Rev. D


STEEL
CARBON

05–72 PART NO. K467P–12

SOME CHOICES

are easy, like the way you put your jeans on. Not only are you most likely to go with the fly-in-the-front, one-leg-at-a-time method, but it's also the obvious choice. If you trade options, not only do you need to know whether you think a stock will go up or down, but you have to consider volatility (vol), too. Is it high or low? Will it go up or down from here? This is where traders get hung up on strategy. Once you have the information you need, which options spread do you run with? Is there a way to automate the decision-making process? Perhaps.

Vertical spreads in particular are guilty of befuddling even the best of 'em. You may recall a vertical spread is a defined-risk strategy that lets you make bullish or bearish speculative trades. And they're flexible. You can create a vertical with minimal risk or a lot of risk. A vertical could be a short-term speculation or long-term directional play.

SO MANY WAYS TO TRADE 'EM

Vertical spreads are straightforward. They're composed of either a long and short call or a long and short put in the same expiration. Remember, if we're talking about bullish verticals, the two choices are long call verticals for debit or short put verticals for a credit. If we're talking about bearish verticals, your choices are long put verticals for a debit or short call verticals for a credit. Which one is which? Use the cheat sheet (below).

Now consider the $64,000 question: Which one should you choose? Debit spread or credit spread? At the money or out of the money (OTM)? What about expiration? When you're faced with an array of call and put options, with perhaps dozens of strike prices and expirations, choosing a vertical can feel like a daunting task. Well, fear not.

SPREAD TYPE	CREDIT OR DEBIT?	WHAT IS IT?
Bullish long call	Debit	Long a call with a lower strike price and short a call with a higher strike price.
Bullish short put	Credit	Long a put with a lower strike price and short a put with a higher strike price.
Bearish short call	Credit	Short a call with a lower strike price and long a call with a higher strike price.
Bearish long put	Debit	Short a put with a lower strike price and a long put with a higher strike price.

FIGURE 1 →

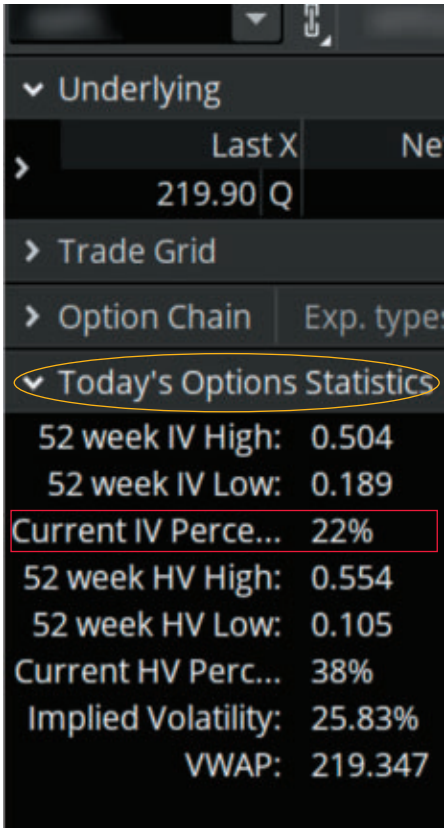


FIGURE 1: Know the current IV percentile. Find the IV percentile of an option by selecting Today's Options Statistics from the Trade tab on thinkorswim.
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

What you should consider is a quick checklist of easy metrics that helps you choose with confidence. As with all things trading, there are no guarantees. This checklist is a way to get started, not necessarily the end point. As an option trader, you still need to determine whether a particular vertical is a good choice. But a good checklist can make the decision-making process move faster so you can take advantage of new potential opportunities.

STEP 1
CHECK IV PERCENTILE

When trading options, start with vol—more specifically, whether the vol of a stock or index option is relatively high or

low. Now, let's be clear. No matter how high vol might be, it can always go higher. And no matter how low it might be (unless it's zero), it can always go lower. So for starters, put the present vol in context through the "IV percentile." This is a metric that compares the present overall implied volatility (IV) of an underlying's options to its past highs and lows.

Where to find it. The IV percentile measures where the overall IV of a stock or index is relative to its high and low values over the past 52 weeks. Find it in **Today's Options Statistics** on the **Trade** tab of the thinkorswim® platform from TD Ameritrade (see Figure 1).

The stock in this example shows an IV percentile at 22%. In the **Today's Options Statistics** section, you'll find the data that's used for the IV percentile calculation. Besides the IV number, which is the overall IV for the symbol you're looking at, there's the "52 week IV High" and "52 week IV Low." If the 52-week IV high is 50%, the 52-week IV low is 19%, and the IV is 25.8%, then the IV percentile is 22%.

How to calculate. The IV percentile formula takes the present IV, subtracts the 52-week low IV, and then divides that by the 52-week IV high minus the 52-week IV low. That is (25.8% – 19%)/(50% – 19%) = 22%. Pretty simple, but you'll save time because it's calculated for you.

The higher the IV percentile, the closer it is to its 52-week high. The lower the IV percentile, the closer it is to its 52-week low. A 50% IV percentile means the current IV is in the middle of its 52-week high and low IV values—and that's a benchmark to consider when using debit or credit strategies.

TRADER GLOSSARY
TURN TO PAGE 37

01

02

If you aren't finding short put spreads that give you a one-third credit, this is a clue you may want to consider debit spreads—in this case, a bullish long call vertical.

03

You can also take a look at the **Imp Volatility** study on the **Charts** tab. This study displays the historical values of the overall IV number used in the IV percentile formula. You can also estimate when the 52-week high and low IV values occurred. Sometimes a short-term spike, or collapse in the underlying's IV, can skew the IV percentile. This might help you spot where that happened and give you greater context around that IV percentile number.

How can IV percentile help? When IV is higher, it makes credit spreads more expensive. For example, with a stock at $50, the short 47/48 put spread might have a theoretical value of 0.25 when IV is 15% but 0.35 when the IV is 25%. Shorting the 47/48 put spread for a 0.25 credit would give you a max potential profit of $25 if the stock is above $48 at expiration, and a max potential loss of $75 if the stock is below $47 at expiration. Shorting the 47/48 put spread for 0.35 credit would give you a max potential profit of $35 and a max potential loss of $65.

Selling that put spread for a 0.35 credit gives you a larger potential profit, and smaller potential loss, than selling it for a 0.25 credit. A higher IV percentile, say, when it's over 50%, can suggest a situation where a stock's short verticals might give you larger credits.

Likewise, when IV is lower, it can make credit spreads less expensive and deliver smaller potential profits and larger potential losses compared to verticals at the same strike price when IV is higher. When the IV percentile is lower than 50%, that's when you might consider debit spreads instead.

So, when the IV percentile is, say, above 50%, you might select trades by looking at credit spreads—short put spreads if you're bullish; short call spreads if you're bearish.

When the IV percentile is under 50%, you might select trades by looking at debit spreads—long call spreads if you're bullish; long put spreads if you're bearish.

After looking at the IV percentile when it's above 50%, you may want to select verticals by picking an expiration that matches the time frame for your directional trade. Let's say you want to speculate that a stock might rise in the next 60 days. In this case, find an expiration close to 60 days, then open up the option chain.

STEP 2
DETERMINE THE STRIKE PLACEMENT

How do you find an option to consider selling that's part of that short put vertical?

- Fire up the thinkorswim platform.
- From the **Trade** tab, enter a symbol.
- In the **Option Chain**, choose to display **Prob OTM** column, which is a theoretical number indicating the likelihood the stock will be above the short put's strike price at

FIGURE 2

HOW TO PLACE A VERTICAL SPREAD

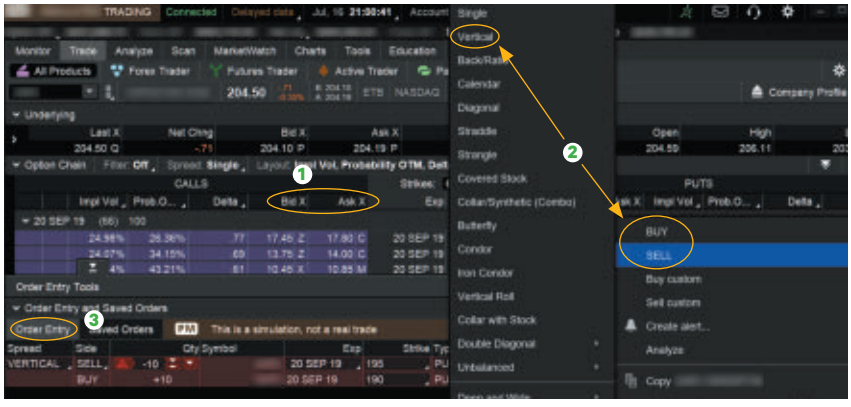


FIGURE 2: Which strikes are you going to trade? Once you've selected the strikes, you can think about placing a vertical spread. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

To trade vertical spreads on the thinkorswim platform from TD Ameritrade, go to the **Trade** tab and pull up an **Option Chain** (Figure 2).

1. Select either the bid or ask price of one of the options in the vertical.

2. Then select **Buy** or **Sell** to create a long debit spread or short credit spread. When you do that, a proposed spread will be loaded into the **Order Entry Tools**. By default, the vertical will be created using the strikes adjacent to the strike you selected. If you select a call, the call used to create the vertical will be at the next higher strike price. If you select a put, the put used to create the vertical will be at the next lower strike price.

3. From the **Order Entry Tools**, you can select the strike prices and choose a different one from the menu. Then the resulting debit or credit will appear. This is a quick way to evaluate verticals to find out if one is suitable one for you.

PART NO. K467P–13

expiration. There's no guarantee the option will expire OTM. But it's a metric to help begin your selection process.

• Next, find the strike price of a put that has maybe between a 65% and 70% **Prob. OTM**.

• Choose that, select **Sell**, then **Vertical**. (To place a vertical spread order, see the sidebar "How to Place a Vertical Spread.") Look at the credit for the short put vertical that's created in the **Order Entry** section. One strategy to consider is a target credit that's one-third the difference between the strike prices (i.e., 0.33 credit for a short 46/47 put vertical, 0.66 credit for a short 45/47 vertical, 1.66 credit for a 42/47 vertical, and so on). You can adjust the strike of the short put up and down to see whether the resulting credits meet that one-third target. But be careful not to select a put that's too close to the stock price. This might not give the stock enough room to drop some and still allow the short put vertical to be profitable.

As an option trader, it's up to you to determine a suitable credit for a short put vertical. If you aren't finding short put spreads that give you a one-third credit, this is a clue you may want to consider debit spreads—in this case, a bullish long call vertical. Start by looking for the long call that's the first in-the-money (ITM) strike. Choose it, select **Buy**, then **Vertical**. Look at the debit for the long call vertical that's created in the **Order Entry** section. If necessary, change the short call strike to the first OTM strike. One thing to look for is to see if the debit is less than the intrinsic value of the long call. If the stock price is $50, and the debit of the long 49/51 call vertical is 0.90, then it's 0.10 less than the $1 intrinsic value of the long 49 call. Intrinsic value exists only for ITM options. It's the stock price minus the strike price for ITM calls, and the strike price minus the stock price for ITM puts.

When the debit is less than the intrinsic value, it's possible the debit of the vertical will "grow" into that intrinsic value at expiration if the stock price stays where it is. The profit would be the difference between the intrinsic value and the debit of the long vertical. Again, you decide on the appropriate debit to pay for a long vertical. The debit versus intrinsic value can be one benchmark you evaluate.

This IV-percentile-driven method of finding credit or debit verticals as speculative tools teaches you to quantify them. There's no guarantee that finding verticals this way will yield profitable trades. But at the least, it's a way for you to make comparisons between debit and credit spreads, between two or more debit spreads, or between two or more credit spreads. You can also compare verticals among different underlyings and learn to quantify their relative opportunities.

SO GO AHEAD AND TWEAK THE targets for IV percentile, probability, debits, credits, and strikes. But make it a structured, informed process that you can repeat quickly and efficiently.

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.

Spread strategies can entail substantial transaction costs including multiple commissions.

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

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Which Month to Trade? Follow Vol

With options on futures, you've got more choices. To narrow them down, consider using the vol curve.

Words by Doug Ashburn

FIGURE 1: Futures contracts and options expiration dates. **The option chain displays the options expiration dates and which futures contract each one settles into. Notice the volatility for each expiration date on the right side.**

FIGURE 2: Linear regression channels. **You can overlay this technical indicator on your price charts. Check out the Studies feature on the Charts tab.**

Source for both figures: thinkorswim® from TD Ameritrade. For illustrative purposes only.

• Futures traders learn early that for each listed product, there are multiple contract delivery months. And if you trade options on those futures, you quickly figure out that those options are tied to different contract delivery months depending on an options contract's expiration date and the last trading day of the next futures contract. Futures options are different from equity options, which settle into the underlying stock.

For example, the CME Group lists monthly crude oil futures contracts (/CL). There're several options contracts on those futures with expiration dates tied to each contract. If you're just starting out, that may sound overwhelming. To an experienced futures trader, it can mean more flexibility and targeted exposure.

TRADER JARGON
TURN TO PAGE 37

Say you're looking at a chart of /CL. You've identified what you think is a lower bound or support level, and you'd like to sell a put option. If the price doesn't move or rallies, you could pocket the premium from the short put (minus transaction costs). If the price dips below the strike at or before expiration, you may consider going long crude.

WHICH PUT DO YOU SELL?

The mechanics are similar to equity options—strike price and expiration date—but there's an extra consideration. With futures options, you need to know which futures contract an option will settle into. The top section of Figure 1 shows three crude futures contracts: Sep (/CLU19), Oct (/CLV19), and Nov (/CLX19). Notice the prices of further expirations are higher. This indicates the futures curve is upward-sloping.

FIND OUT MORE ON TRADING OPTIONS ON FUTURES

Check out educational materials from the CME Group at www.cmegroup.com/education.html

In this example, the futures curve slopes slightly upward, meaning deferred months are slightly higher in price than near-term contracts. And the price difference between contracts is only a few cents. But sometimes the difference can be greater and affect options prices, which in turn can affect strike selection.

If you're trying to decide which contract to trade, consider comparing volatility (vol). If you're looking to sell a put, you may want to start with one that'll give you a vol boost.

TURN TO THE LINEAR REGRESSION CHANNEL

When do you initiate a short put strategy? Which strike should you choose? One approach is to use a linear regression channel—a technical indicator that can offer clues to help you identify overbought and oversold conditions (see Figure 2).

There are two ways to use a linear regression channel in a short put strategy:

1. When /CL approaches the lower line (oversold), which could indicate a price reversal, consider selling a short-term, at-the-money (or slightly out-of-the-money) put.

2. Also consider selling a put with a deferred expiration date at a strike near the lower line (51 strike).

There's no guarantee that linear regression lines will correctly identify reversals. Things change. But when it comes to futures options, you can pair this kind of indicator with a vol-curve assessment to help you decide how to time an options trade and which strike to choose.

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 information on the general risks of trading and trading futures, see page 38, #1–3.

Futures and futures options trading is speculative, and is not suitable for all investors. Please read the Risk Disclosure for Futures and Options prior to trading futures products.

Futures accounts are not protected by the Securities Investor Protection Corporation (SIPC).

The Pillar of Strength

Senior administrative executive **Laurie Domenico** is armed to deliver. Bigwigs at TD Ameritrade turn to her to make sure everything gets done just right.

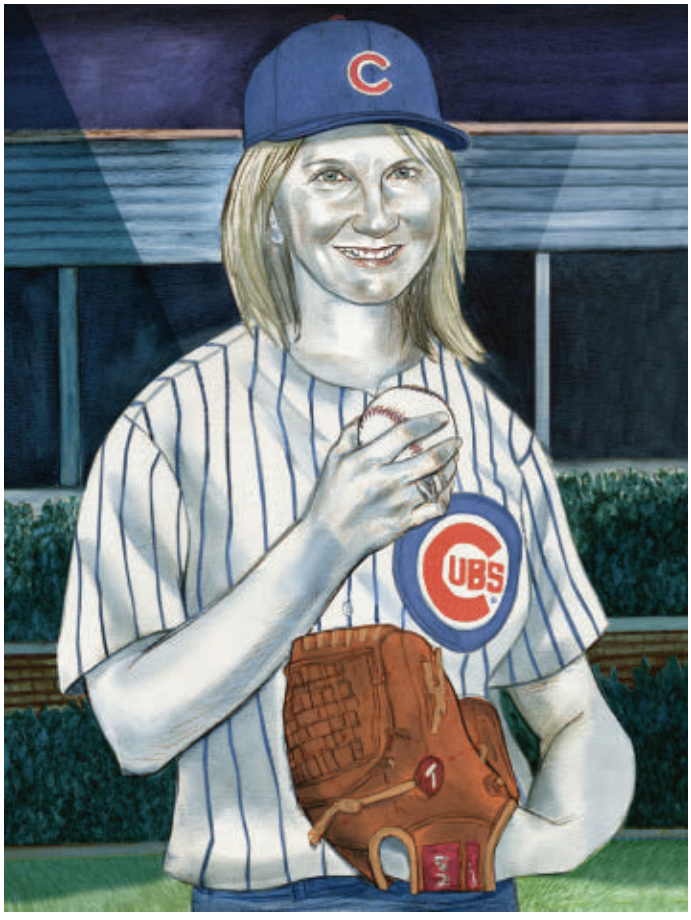
• LAURIE'S DUTIES ARE PRETTY VAST. She takes student groups and corporate visitors on tours through the TD Ameritrade Chicago offices, plans important corporate events, prepares schedules, and participates in social events like the Pride parade. You may run into her at TD Ameritrade Market Drive events or at trade shows.

1

How did you end up with TD Ameritrade?
It's an interesting story. I was working in real estate, and let's just say the company wasn't doing well. I was forced to look for another job, and I interviewed with TD Ameritrade for an assistant position. The person who interviewed me had never had an assistant. I sort of created the job. I also mentioned that I attend Mardi Gras every year, meaning that I'd be gone for a week and couldn't be reached. It was pretty bold. I figured that sunk my chances, but the next day they offered me the job. Now I work with Steve Quirk ("Q") and JJ Kinahan in the Trader group.

2

What's your typical day like?
Q and JJ are like the brothers I never wanted! Most of the time, I plan Q's events. He's got so much going on, so I make sure he's everywhere he needs to be. I also assist other managing directors here. Q understands I've earned a gigantic Christmas present. Every year.



3

What's your proudest accomplishment at TD Ameritrade?
It may not seem like a big deal, but I really enjoy planning client events. I loved it the very first time I did it. And I've been planning these events for several years now. What I enjoy most is the connections I've personally made with clients, especially the women. Over the years, more and more women have shown up. Of course, it's great to see women getting into trading, and they seem to feel more comfortable if they can talk to a female staffer. I'm happy to help in any way I can.

4

Has your work with traders encouraged you to trade?
I don't actively trade, but I know just enough to be dangerous! Surprisingly, I've learned that a lot of traders don't fully understand what trading involves. They're lured to it by the thought of making money. But there's so much more to absorb. And many aren't aware of our countless educational tools. At client events, it's really satisfying to present those resources and help folks understand just how much support we have to offer. For example, take clients who may be interested in learning about options or futures. They may not be aware of how we can help at all trading levels, especially with the more complicated products.

5

How do you relax?
I am a huge Chicago Cubs fan. Actually, I love anything baseball. But the most amazing moment of my life was when I made the first pitch on July 15, 2005, at Wrigley Field! That was beyond cool.

TRADER JARGON

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.

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.

Gamma — A measure of what an options contract's delta is expected to change per $1 move in the underlying.

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.

Long call vertical — A defined-risk, bullish spread strategy composed of a long and short option of the same type (i.e. calls). Long verticals are purchased for a debit at the onset of the trade. The risk of a long vertical is typically limited to the debit of the trade.

Long put vertical — A defined-risk, directional spread strategy composed of a long and short put. Long put verticals are bearish. The risk is typically limited to the debit of the trade.

Out of the money (OTM) — An option whose premium is not only all "time" value, but the strike is away from the underlying equity. For calls, it's any strike higher than the underlying. For puts, it's any strike that's lower.

Rho — The measure of the expected change in the theoretical value of an option for a one percentage point change in interest rates.

Short call vertical — A defined-risk directional spread strategy composed of a short call option and long, further out-of-the-money call option. Short call verticals are bearish and sold for a credit at the onset of the trade. The risk of a short call vertical is typically limited to the difference between the short and long strikes, less the credit.

Short put — A bullish directional strategy with unlimited risk in which a put option is sold for a credit, without another option (of a different strike or expiration) or instrument used as a hedge. The strategy assumes the stock will stay above the strike sold; in which case, as time passes and/or volatility drops, the option can be bought back cheaper or expire worthless, resulting in a profit.

Short put vertical (spread) — A defined-risk, directional spread strategy, composed of an equal number of short (sold) and long (bought) puts in which the credit from the short strike is greater than the debit of the long strike, resulting in a net credit taken into the trader's account at the onset. Short put verticals are bullish. The risk in this strategy is typically limited to the difference between the strikes less the received credit. The trade is profitable when it can be closed at a debit for less than the credit received. Breakeven is calculated by subtracting the credit received from the higher (short) 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.

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.

Vertical spread — A defined-risk, directional spread strategy, composed of a long and a short option of the same type (that is, calls or puts). Long verticals are purchased for a debit, while short verticals are sold for a credit at the onset of the trade. Long call and short put verticals are bullish, whereas long put and short call verticals are bearish. The risk of a long vertical is typically limited to the debit of the trade, while the risk in the short vertical is typically limited to the difference between the short and long strikes, less the credit.

Cboe Volatility Index (VIX) — The de facto market volatility index used to measure the implied volatility of S&P 500 index options. Otherwise known to the public as the "fear index," it is most often used to gauge the level of fear or complacency in a market over a specified period of time. Typically, as the VIX rises, options-buying activity increases, and options premiums on the S&P 500 Index increase as well. As the VIX declines, options-buying activity decreases. The assumption is that greater options activity means the market is buying up hedges, in anticipation of a correction. However, the market can move higher or lower, despite a rising VIX.

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 since 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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