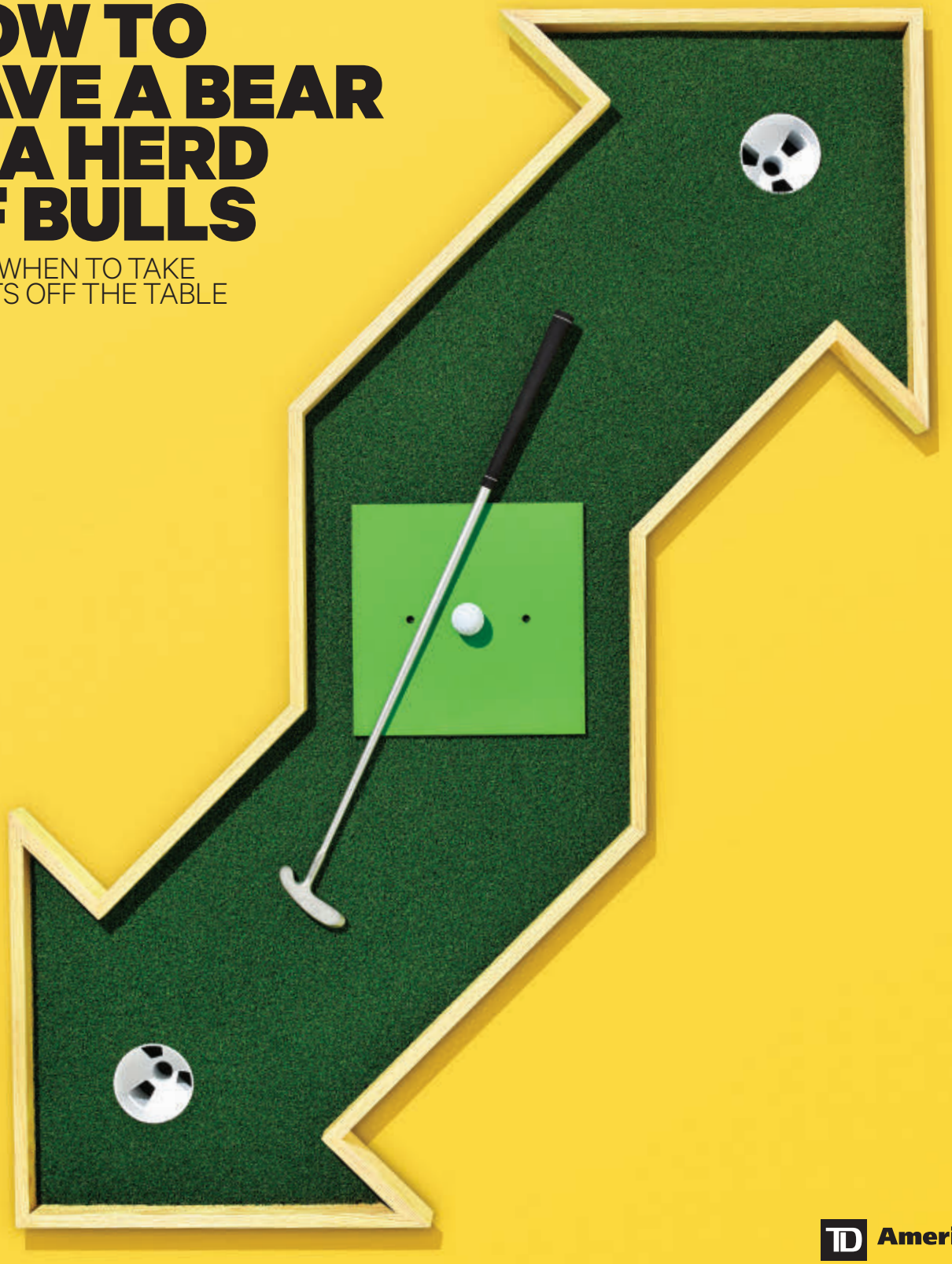
thinkMoney®/42
Random musings for traders at TD Ameritrade—WINTER 2019

HOW TO SAVE A BEAR IN A HERD OF BULLS

KNOW WHEN TO TAKE PROFITS OFF THE TABLE

PAGE 16



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Dan Saelinger

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COVER STORY

How to Save a Bear in a Herd of Bulls

It's a good idea to get a 10,000-foot view of the markets just to see how past selloffs have done. Big price changes can happen anytime, and options traders need a risk management strategy in place, not only to withstand a persistent rally, but still potentially profit if and when the selloff occurs.

Crowds create momentum in the markets, but they can also influence you to make hasty trading decisions.

Five Chart Patterns for Momo Traders
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Calendar vs. Butterfly: The Ultimate Premium Smackdown

Two options spreads that try to profit from the passage of time might look similar. But dig a little deeper and you'll see that butterflies and calendars have their differences. Why choose one over the other? Let's find out.

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Portfolio Theory for the Little Guy

Being a portfolio manager isn't just for the big guys. Options traders with smaller accounts might consider these strategies to help expand their thinking beyond their trading account and look like a pro.

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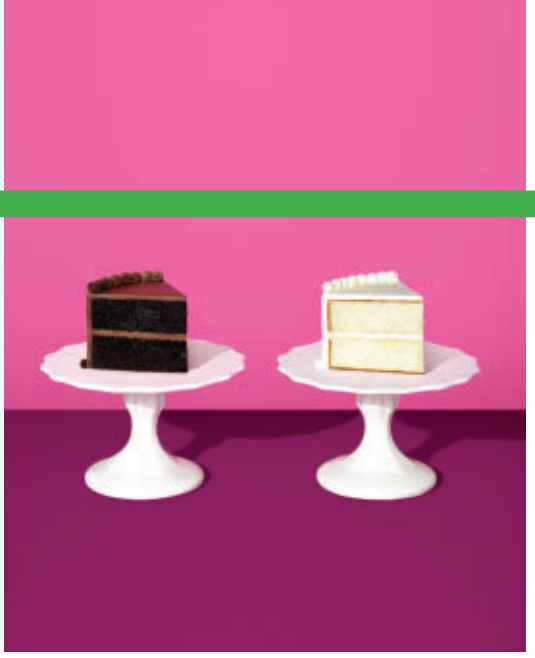
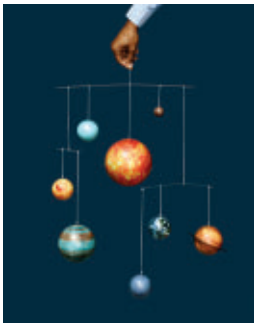
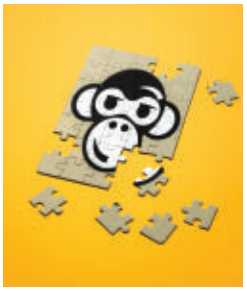
Five Chart Patterns for Momo Traders

Momentum can be your best friend, but finding it can be tricky. These five chart patterns could help you figure out which way prices could move and with how much oomph. Know them, love them, and use them.







MISCELLANEOUS

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Vol Whisperer
You know what the Nasdaq's vol may be for the year, but what about tomorrow? Here's how to figure that out.
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Associate Spotlight
Stephanie Lewicky has been around the futures world and knows the needs of futures traders. So what's most important for a futures trader? Understanding the market they're trading. That's why Stephanie believes in the importance of bringing education to the futures trader.

REGULAR COLUMNS

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SKILLS BAROMETER:
See a dot. Read or pass. If you've ever been frustrated spending your precious few minutes reading articles that aren't for you, these little color dots at the beginning of each article will help you skip to the stuff that matters most to you.

EASY
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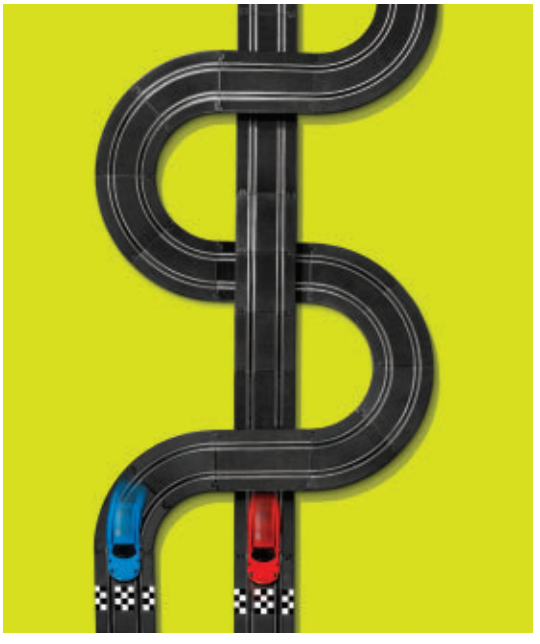
PRO



Think, Plan, Prepare

• WHEN MARKETS ZIG strongly one way, and then suddenly zag in the other direction, investors get hurt and traders sometimes freeze in a state of "analysis paralysis." They make hasty decisions, and their tidy profits disappear. Of course, there's no way to know if a reversal is merely a correction or something bigger. But big or small, in the heat of things, the roller coaster just feels bad. You might even panic and sell all of your positions.

But that may not be the smartest move. How often have you exited your positions, only to see others simultaneously loading up on new ones? And what happens next? The market moves right back to where it was before the correction and continues on its original path. It's happened time and time again.

As a trader, your primary responsibility should be to protect your positions. Always. Since it's impossible to predict what the stock market will do, a logical plan of action would be to position yourself so you can profit from rallies and hang in there during corrections.

Generally, bullish rallies are long and slow, whereas bearish ones tend to be short and quick. How can you profit from such a market? "How to Save a Bear in a Herd of Bulls" on page 16 discusses strategies to use if you're a bear in a bull market. These strategies help you take profits when you need to. But there's a catch—you have to do it before the market takes those profits away. Otherwise, you might get trampled by the bulls.

TALK TO US!

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

It's been said that fear and greed drive our trading decisions, which are dictated by crowd action. This is all mapped out on a price chart, which is why it may be worth training your eye to detect price patterns that suggest when crowds are united and strong. "Five Chart Patterns for Momo Traders" on page 28 shows some common patterns that can help find where the action is. Not all patterns will work the way they are supposed to, but it never hurts to have more tools to help make entry and exit decisions.

So, when the markets make wild swings, it would be wise to remember why you got in the trade in the first place, don't let your emotions get the best of you, and execute on your plan for when things go wrong.

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

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Are you as clever as you think you are? Let's see whatcha got. Send us your best trading quips and you could end up here in print. **thinkmoney@tdameritrade.com**

Best in Show ... (To Our Inbox)

Good morning, all! My computer has decided to allow me access to the Internet this morning. So, let's roll. **—Jeremy**

Heard that the most profitable word in marketing is "repeat." Whatever company added that to the instructions for their shampoo KILLED it. **— Pat**

There's something called primal scream therapy; it's supposed to be good for you. So scream all you want. **—Terrance**

The comments from Chat Room Pearls, right, 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 Love Notes for grammar, consistency, and similar purposes.

Chat Room Pearls...

Early bird gets the profit or the worm?
—NIC

CHAT SWIMMER #1
If you're a trillionaire you may as well buy the whole thing ...
CHAT SWIMMER #2
One day, LOL.

Red boxes in the morning, traders take warning. Green boxes at night, traders delight.
—LARRY

I almost became a bull today.
—DUANE

Woke up this morning and the world was ending. Went back to sleep and when I woke up, the world was still here. Hooray!
—EVE

I don't mind sharing ... but never my pudding cups.
—JOAN

I better not turn positive for the day. Otherwise I'll have to open the window and shout out my frustration ;)
—SEAN

She's not trading. Just chatting the market down.
—BRAD

The casino is open for bets. Who's in?
—DARRYN

I have a sneaky feeling that AI and Algos are watching me ... I'll have to keep my trades small.
—PIERRE

Not much going on in the markets. Nothing to do but pick on each other in chat.
—MEREDITH

Learn from me ... I wiped out half my account.
—ANDREW

This feels like a pizza market. Better when it's cold.
–KELLY

GET CHATTING
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IN THE MONEY

VOL WHISPERER ● SEASONED

Annual Vol Is Nice. What About Tomorrow?

BIG IDEA: THE TROUBLE WITH VOLATILITY DATA IS IT'S FOCUSED ON THE LONG TERM. WHAT'S A TRADER TO DO? CONVERT IT TO THE SHORT TERM.

• OPTIONS ARE ALL ABOUT FLEXIBILITY. You pick a direction, then you pick an option strategy based on risk tolerance, available capital, and volatility ("vol"). But here's the rub—vol is almost always expressed as an annual number, and it measures the potential percentage returns of the stock's price. If someone tells you the Nasdaq 100 Index (NDX) has a 19% vol, it means that in one year's time, the NDX's value will theoretically be within +19% and -19% of its current price 68% of the time. If NDX is trading for 7,300, that's between 5,913 and 8,687. But what if you want to estimate where NDX might be in a day, or a week?

THE FINER POINTS

First, you need to convert that annual vol number into a different period of time, say, one day. To do that, multiply it by the square root of time. That's all. And for most articles on vol, that would be the end. But here we're going to give you a deeper dive.

Why use the square root of time? First, think about how a stock's price moves up and down. The percentage returns are positive and negative, too. So if you took the average of those positive and negative stock returns, the result could be close to zero. That would suggest the stock's vol was low, even though it was moving up and down every day. For example, say a stock goes up +10% one day and down -10% the next. The average return is zero, but that's huge vol.

To solve this problem, you square the stock price's returns to make them all positive, and then average those squared returns to get what's known as variance. But who thinks in terms of squared numbers? So, you take the square root of that variance to get it back into something usable. The square root of variance returns is the standard deviation of those returns, which is what traders refer to as vol.

Stock return variance is linearly related to time. You double time, for example, and variance doubles. Because you take the square root of variance to calculate vol, it's related to the square root of time. You double time, and vol increases by the square root of 2. And oh, that 68% thing? That's Chebyshev's inequality theorem. Theoretically, data will fall between +1 and -1 standard deviations 68% of the time, +2 and -2 standard deviations 95%

PHOTOGRAPH: DAN SAELINGER

of the time, and +3 and -3 standard deviations 99% of the time. Vol is a standard deviation of returns, and theoretically follows Chebyshev.

AND THE NUMBER OF DAYS?

Do you use trading days (approximately 262) or calendar days (365)? For an annual number, it doesn't matter. The square root of 262/262 is one, as is the square root of 365/365. But to convert vol to a one-day estimate, it makes sense to use trading days. For example, if it's Tuesday and you want to see how much NDX might move on Wednesday, multiply VXN (the CBOE volatility index for the NDX) by the square root of 1/262, then multiply that by the NDX's value. That is: 0.19 x (square root of (1/262)) x 7,300 = 85.69. Theoretically, NDX could be between 7,214.31 and 7,385.69 68% of the time in one day.

But if your time frame includes weekends, you may want to use calendar days to account for changes even when the market is closed. If you want to see how much NDX could change in 90 days, take 0.19 x (square root of (90/365)) x 7,300 = 688.73. The NDX might theoretically be within 6,611.27 and 7,988.73 68% of the time in 90 days.

As a rule of thumb, within a trading week—Monday through Friday—use trading days. For more than a week, use calendar days.

YOU CAN YANK OUT A CALCULATOR to do this and impress your friends. But it's simpler to look at the Probability Analysis page on the **Analyze** tab on the thinkorswim® platform from TD Ameritrade. And now you understand some of the theory behind those numbers. —Words by THOMAS PRESTON

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 37, #1–2.

Past performance of a security, strategy or index is no guarantee of future results or investment success.

THINK TANK ● EASY

Cool Tools You Should Know

BIG IDEA: WE GET STUCK USING THE SAME FEATURES ON OUR TRADING PLATFORM OVER AND OVER AGAIN AND DON'T GIVE A THOUGHT TO FEATURES WE NEVER USE. HERE ARE SOME USEFUL TOOLS ON THE THINKORSWIM® PLATFORM THAT COULD SPICE UP YOUR TRADING DAY.

ONDEMAND FEATURE

So you have a couple symbols on your watchlist that you like to trade. Maybe you're bullish on one but not sure why price isn't moving. One tool that can help you analyze price behavior more closely is OnDemand for thinkorswim. You see how price behaved when it reached a certain point such as a support or resistance level by going back in time.

Say you pull up a price chart of a stock you want to trade and see that price came close to a support level and has started moving up (Figure 1). But price is stalling, and you're not sure if the uptrend will continue. You look back on the chart and see price hit that support level on July 31, 2018.

What was the price action in the options at that time? Here's how you can watch a replay of that price action using the OnDemand feature on thinkorswim (Figure 2).

1– Click the **OnDemand** button on the top right of your screen.
2– Select July 31, 2018 on the calendar, then click the Go! button.
3– Now go to the **Trade** page and view the options chain.
4– Click the step forward button to see how options prices change as you move closer to expiration.

Once you're done using OnDemand, click on the OnDemand button and it takes you back to prevailing prices. OnDemand is effective for understanding how time decay or volatility impact options prices, especially during major events such as earnings releases, as options get close to expiration, or price action at technical levels. This can take you one step closer to making more educated trading decisions.

FIGURE 1: thinkorswim OnDemand. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

FIGURE 2: Accessing OnDemand. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

FIGURE 3: Visualizing the yield curve. You can chart the difference between the longer- and shorter-term yields and see if the yield curve is flattening or steepening. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

VISUALIZE THE YIELD CURVE

Do you know if the yield curve is inverting, flattening, or steepening? It's generally thought that an inverting (or negatively sloped) yield curve, when short-term bond yields are higher than longer-term ones, portends a recession or bear market. Traders watch the Fed's interest rate decisions carefully, since they can impact the market's price movement. You can look at the relationships between any short and long-term bonds such as the 2-year Treasury notes (/ZT) and 30-year Treasury bonds (/ZB) or the more popular 10-year notes (/ZN) versus /ZB known as the notes-over-bond (NoB) spread. And you can keep an eye on the yield curve on your thinkorswim platform by looking at a chart of the NoB spread.

From the Charts tab, type 2*/ZN-/ZB in the symbol box. The chart in Figure 3 is a line chart of the NoB spread. The 2 in front of the symbol is the weighting on the contracts, which depends on the ratio of the spread. This information can be found on the CME Group website. The yield curve steepens if economic conditions are looking strong. If the reverse happens, the yield curve starts flattening.

Past performance of a security, strategy, or index is no guarantee of future results or investment success.

ASSOCIATE SPOTLIGHT

What's Shakin' in Futures?

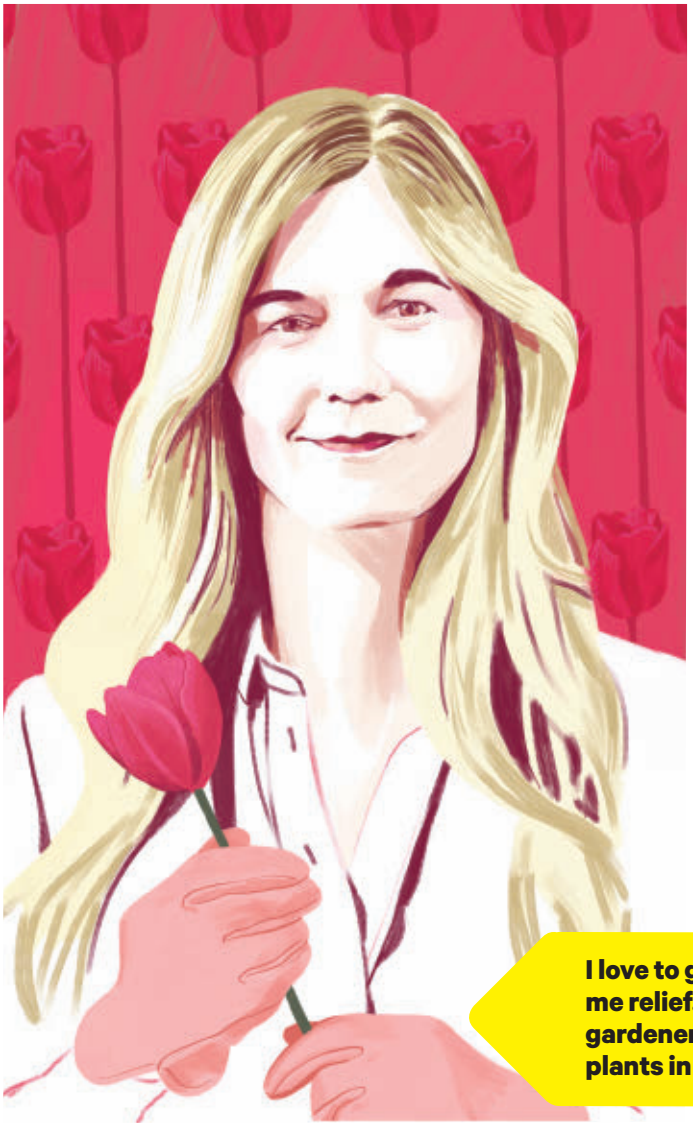
STEPHANIE LEWICKY HAS BEEN AROUND FUTURES TRADERS LONG ENOUGH TO KNOW THEIR NEEDS. WHAT'S IN STORE FOR THEM NEXT? SHE TELLS US.

Illustration by Mace Fleeger

• A VETERAN OF THE MARKETS for more than 20 years, Stephanie Lewicky understands market complexities and challenges. And she knows technology can play a vital role when traders consider new products and strategies. As a senior manager at TD Ameritrade Futures and Forex, LLC, she's hard at work behind the scenes to bring clients the educational and product tools necessary for a better trading experience.

1

Tell us about your professional focus.
We educate clients on futures and forex, options on futures, and trading futures spreads. We do that by creating educational content that can be posted on all our websites and throughout the thinkorswim® platform. I also give presentations at some of the TD Ameritrade Market Drive events, which puts me in front of our clients. I contribute daily to the Futures show on the TD Ameritrade Network, a media affiliate of TD Ameritrade.* And I'm included in the panels that air during the Network's *Morning Trade Live* and *Market On Close* shows.



I love to garden. It gives me relief. I'm an urban gardener and like to grow plants in pots.

2

What product tools might be on the horizon?
We do all we can to anticipate the needs of, and help educate, futures traders. We're currently planning a new futures "sitelet"—a futures website the public can access. The sitelet will house a lot of our educational content. It will also include videos on how to open an account, futures-specific features, and more. We're deep in the process of mapping and building the site. We hope this will be helpful for those who may have considered trading futures but have hesitated.

3

Can you offer our readers some tips for futures trading?
I would say, don't force a trade. If you don't see a potential trading opportunity, don't just trade to trade. Also, it may sound like a cliché, but don't try and turn a losing trade into a winning trade. Finally, don't trade with emotions.

4

You rise, do a TV show, and help make sure the complex world of futures trading runs smoothly at TD Ameritrade. How do you do it?
I get to the office a little before 6:00 a.m. I start my research for the Futures show about an hour before it starts. After that, I engage in the futures operational side. Then it's on to researching for the panel at 9:30 a.m. Once the shows are over, I typically spend the rest of the day creating educational content, working with our marketing teams, and overseeing product research.

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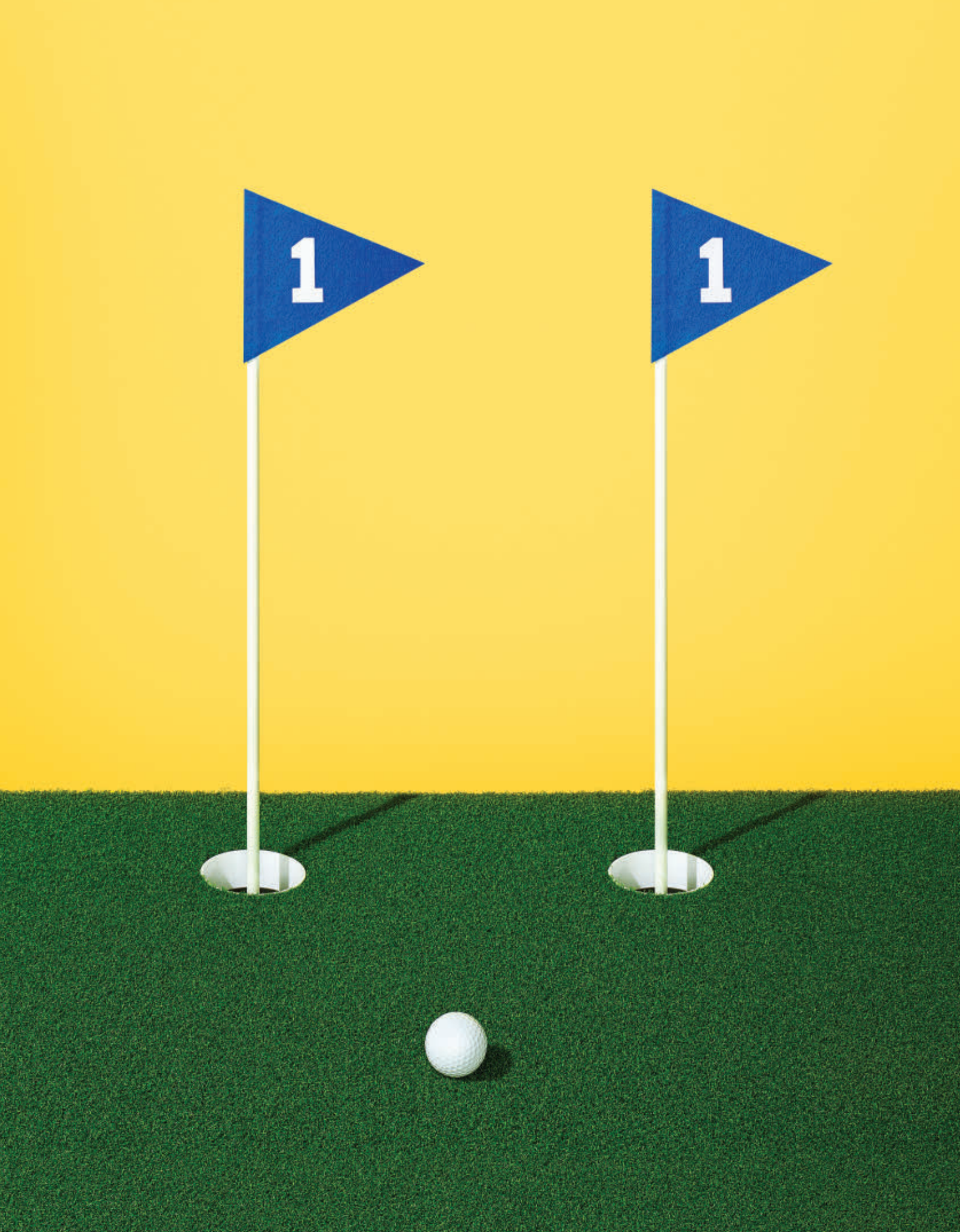
HOW TO SAVE A BEAR IN A HERD OF BULLS

PHOTOGRAPHS BY
DAN SAELINGER

WORDS BY
THOMAS PRESTON

BIG IDEA: BULL MARKET SELLOFFS CAN BE FAST AND SHORT. WHEREAS RALLIES CAN BE SLOW AND LONG. HOW CAN YOU TAKE ADVANTAGE OF A FAST SELLOFF AND A MARKET'S PERSISTENT RALLY? HERE'S ONE STRATEGY YOU COULD USE.

SEASONED/ **TAKE AWAY:** *Here's a strategy to take advantage of selloffs during a bull market.*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FROM THE DARK DAYS

of early 2009 to the time of this writing, the S&P 500 index (SPX) has rallied more than 325% in simple returns, not including dividends. Yup, the last 10 years have been a good time for the patient bulls who hung on to their investments. But it hasn't been a smooth ride—there have been times when the bulls were scared. Threats of a government shutdown in 2011, fears of a European economic crisis in 2014, and Brexit in 2016. You get the picture. Those were times when the perpetually bearish were thinking, "This is it! The great crash of ...." But it didn't play out that way. If a crash is when the market has a huge selloff and stays down without rallying back quickly, well, that hasn't happened. It's been a tough slog for bears.

A CRASH COURSE

Let's drill down into some SPX data going back to the financial crisis of 2008, pulled directly from the **Charts** page of the thinkorswim® platform from TD Ameritrade. This gives you a 10,000-foot view of the SPX chart, so you can better look for sharp drops. The analysis is subjective, of course. But there were times traders will remember when the bulls were a bit more panicky than usual, and when the SPX was dropping big and fast.

TRADER GLOSSARY
TURN TO PAGE 36

Let's look at how much SPX dropped from the closing price of its relative high the day before it dropped, to the closing price when it seemed to stop dropping and rally back. You might find more, and/or different, bearish events. But here are some that stand out.

On average, SPX dropped about 1.4% per day during these events, and the average overall drop was 13.2% over 11 days. No wonder the bulls got nervous! But the brevity of these events has made it tough for bears who might continue to hold short delta positions in the hope that the market would continue to drop. Sure, the SPX had some big selloffs. But it came roaring back even higher.

Simply said, there have been more days when the SPX was higher over the past 10 years than days it was lower, despite some significant selloffs. That's why patience has been a virtue for bulls.

This data also suggests price moves during SPX selloffs are bigger, faster, and shorter. During rallies, price moves are smaller, slower, and longer. The implied volatility ("vol") skew suggests this, too. Before the most famous (to option traders, anyway) crash of them all—the crash of 1987—implied vols of SPX options weren't skewed. A call that was 2% out of the money (OTM) had about the same implied vol as a put that was 2% OTM. Black Friday changed all that. It gave option traders a harsh lesson in risk management, and made them aware that big price changes can happen anytime.

MAP YOUR MOVES

The impact on SPX option prices of this "crash lower, grind higher" outlook on the market is significant. Looking at some recent SPX options, the 5% OTM call was trading at half the price of the 5% OTM put. This indicates traders believe the put's potential profit is larger than the call's potential profit. As an example, with the SPX at 2,840, the 2695 puts with 50 days to expiration were trading for $11.20, and the 2980 calls with 50 days to expiration were trading for $2.00. Those strikes are roughly equidistant on a percentage basis from the prevailing SPX price. Since the put's price is over five times greater than the call's price, it indicates that "the market"—that is, traders collectively—thinks there's a higher chance of a 5% drop than a 5% rally, and that the potential for a profitable payoff in a drop is bigger than in a rally.

Now, before you start thinking there's some indicator to warn bulls to hedge, and bears to get short, remember that big selloffs are unpredictable. There's no telling how much the SPX might drop, or how long it might keep dropping. The strategy shouldn't be to guess when the selloffs might happen. Rather, if you're bearish, it's about positioning your strategy so you can withstand a persistent rally but still profit if and when the selloff occurs. You want

DATES	DROP IN SPX	
9/19 – 10/10/08	1255.08 to 899.22	Down 28.4% in 15 days
2/9 – 3/5/09	869.89 to 682.55	Down 21.5% in 17 days
7/22 – 8/8/11	1345 to 1119.46	Down 6.8% in 11 days
1/22 – 2/3/14	1884.36 to 1741.89	Down 7.6% in 8 days
9/18 – 10/16/14	2011.36 to 1862.49	Down 7.4% in 19 days
8/17 – 8/25/15	2102.44 to 1867.61	Down 11.2% in 6 days
12/29/15 – 1/20/16	2078.36 to 1859.33	Down 10.5% in 14 days
6/23 – 6/27/16	2113.32 to 2000.54	Down 5.3% in 2 days
1/26 – 2/8/18	2872.87 to 2581	Down 10.2% in 9 days

to put as many factors as you can in your bearish trade's favor.

Past performance of any stock or index is no guarantee it'll deliver similar performance in the future. That means bullish markets might not last as long as they have, and bearish markets might last a lot longer than they have. With that caveat, let's assume as an example that you are bearish, and you think a market drop in the future might be similar to ones in the past 10 years.

One strategy you might avoid is simply buying a put. Yes, a long put has negative deltas and is a bearish strategy. But if put prices are relatively high due to the skew and market expectations of a crash, you could be paying a lot for that strategy.

A way to take advantage of the higher prices of OTM puts could be to use them as the short leg of a long put vertical, which is long a put at a higher strike and short a put at a lower strike in the same expiration. If you buy a put that's near the at-the-money (ATM) strike, and sell one that's further OTM, you'd be buying a put with a lower implied vol (IV), and selling a put with a higher IV (Figure 1). The skew is in your bearish trade's favor.

Obviously, if the index moves the way you think it will, you want your trade to be profitable. But some trades react more favorably than others. Typically, a long vertical like the one just described would be expected to increase in price if it has fewer days to expiration. That's because the long ATM put has high positive gamma, which manufactures negative deltas quickly if the index falls. And gamma is higher with fewer days to expiration, all things being equal. A long put vertical with more days to expiration would also likely increase in price if the index falls, but not as much. So, if you think the market might sell off quickly but possibly rebound, a long put vertical with fewer days to expiration could potentially capture higher profit than one with more days. That's putting the power of positive gamma in your trade's favor.

FIGURE 1: Implied vol for both legs. From the Analyze tab on thinkorswim, look up the option chains and analyze the IV, gamma, and deltas of different strikes and expirations.
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

The downside? If you want to maintain a bearish position, you may need to roll a vertical with fewer days to expiration to one with more days, which incurs commissions and transaction costs. So, consider balancing the benefits of fewer days to expiration against the extra transaction costs from rolling by using an expiration that might have 30 to 60 days to expiration. A long put vertical in one of those expirations won't respond as quickly as one that expires in five days, for example, but you won't have to roll as frequently.

Now, if the index does have what you consider to be a big drop in a short time frame, consider taking smaller profits more quickly before the index bounces back. Don't wait around to see if the index has another massive '87-style crash. The risk, of course, is giving up potential profit if the index drops more. But if you believe the index might resume an inexorable grind higher, then it may make sense to take, say, 50% of the max potential profit of the long put vertical when you can. You'll capture some profit (eliminating the risk of giving up all the profit) even if the index rallies back quickly and the trade turns into a loser. In other words, take the profit the market gives you, before it takes it away. And don't be greedy. That's putting the exit strategy in your trade's favor.

HUG A BEAR

For more bear market wisdom, go to **tdameritrade.com/tickertape.** In the search bar, type in "Bear Market Strategies" and bury yourself in bearish prose.

> YOU WANT TO PUT AS MANY FACTORS AS YOU CAN IN YOUR BEARISH TRADE'S FAVOR.

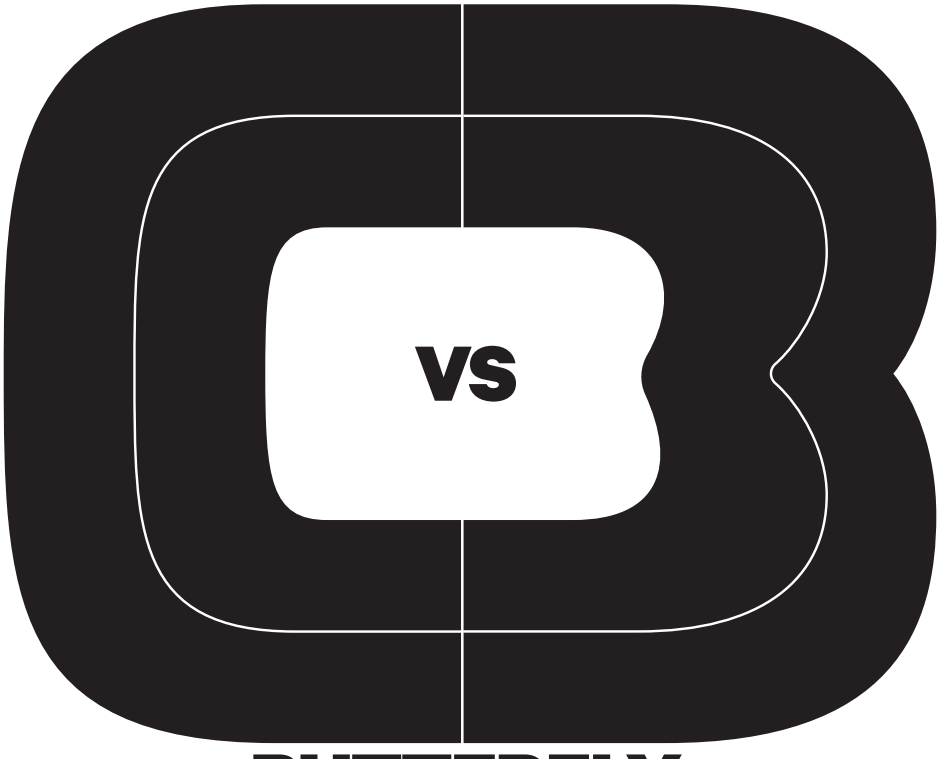
FINALLY, KEEP YOUR TRADE SIZE SMALL. Being a bear in a bull market can be a lesson on how to take losses. Don't let them destroy your account by trading too big. That way, you can make sure the bull only steps on your bear's paw, rather than squashes him. And, once in a while, you give the bear a chance to chase the bull around.

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 37, #1–2.

PRO/ **TAKE AWAY:** *Knowing where vol is, and where it's going, can help you choose one strategy over another.*

THE ULTIMATE PREMIUM SMACKDOWN

CALENDAR VS BUTTERFLY



PHOTOGRAPHS BY
DAN SAELINGER

BIG IDEA: BOTH CALENDARS AND BUTTERFLIES HAVE A SIMILAR RISK PROFILE. SO WHY CHOOSE ONE OVER THE OTHER? IT'S ALL IN THE VOL. FIND OUT WHICH STRATEGY WORKS BEST WHEN VOLATILITY IS LOW OR WHEN IT'S HIGH. WORDS BY **KEVIN LUND**

A popular strategy for many option traders is to try to profit from the passage of time. Positions like iron condors and short vertical spreads spring to mind, for example. But two other strategies traders could turn to are the long calendar and long butterfly.

If you looked at the risk graph of each strategy, you might think they're twins. Both trades profit if the stock is near the short strike at expiration. And both lose value as the stock moves away from the short strike, regardless of direction (See Figures 1 & 2).

But dig a little deeper, and you'll see there's a difference between the two. It's not obvious from the risk graph. But your choice could potentially have a big impact on how the trade performs.

FLY OR CALENDAR?

Butterflies and calendars can be created using either all call options or all put options. You can also do a little call/put "mix and match" to arrive at these strategies. But let's keep it simple. We'll consider these strategies using all call options, and focus on the long version of both.

TRADER GLOSSARY
TURN TO PAGE 36

The long butterfly (or "fly") uses three strike prices in the same expiration. It's created on a 1:2:1 ratio, where the strikes are the same distance apart. The single options on the outside of the fly are long options, or the wings. And the two options in the middle are short options—they make up the body. Get the visual now?

Using the theoretical prices in Table 1, and with the stock trading at $145, you could buy the 140/145/150 call butterfly, that is, buy one 140 call, sell two 145 calls, and buy one 150 call for a net price of $2.50. In the real world, you'd also tack on transaction costs. The risk graph (Figure 1) reveals that this fly hits its max profit if the stock settles at the body—short strike—at market close on expiration date.

On the other hand, if the stock moves away from the short strike in either direction, the trade would show less profit. It would likely break even eventually, or possibly reach a total loss if the stock price moves to or past the wings.

Long calendars, on the other hand, use just one strike, but spread the options between two different expiration periods. Going back to Table 1, you might buy the November 145 call and sell the October 145 call, for a net price of $1 ($3 – $2). The risk graph in Figure 2 tells a similar tale: max profit if the stock settles at the short strike at expiration, with less profit as the stock moves away from the strike, eventually reaching a full loss if the stock moves far enough away in either direction.

Since both strategies profit if the stock is near the short strike at expiration, why would you choose one over the other? In a word: volatility.

WHAT'S VOL GOT TO DO WITH IT?

Calendars and butterflies look similar on the risk graph. And their greeks are also similar. With the stock sitting near the short strike, calendars and butterflies will both be close to delta-neutral, with short gamma and long theta. Keep in mind that theta indicates the profit as time passes. But when you look at how these trades react to changes in volatility, you'll see a difference. Here's where vega kicks in.

Vega isn't vol. But the two are related. Suppose a stock is suddenly expected to have a larger range than was previously thought. The option's implied vol could increase to reflect the stock's bigger expected range. And that means option prices could also increase.

But just how much an option price goes up will depend on the option's vega—defined as "the dollar amount an option will change when the implied volatility changes by one percentage point." In other words, if implied vol increases, the option will increase by vega's amount. And if implied vol drops, the option price will drop by vega's amount.

Here's an example. Going back to the theoretical values in Table 1, the November 145 call is worth $3.00 and has a vega of 0.25. If vol jumps two points (all things being equal) from 16% to 18%, the call is expected to increase by $0.50 (0.25 x 2 = $0.50). It also works in the other direction. If vol drops by three points, and goes from 16% to 13%, this call will then be expected to drop by $0.75, from $3.00 to $2.25 (0.25 x -3 = -$0.75).

If the single option changes price, will spreads change price? It depends. But you can also use vega to forecast what happens to spread prices if vol changes. For spreads that have all their options in one month, like the fly, it's as straightforward as adding up the vegas for each option to arrive at

STOCK = $145	CALL OPTION FAIR VALUE	VEGA
Implied volatility = 17%		
October 140	$6.00	0.12
October 145	$2.00	0.15
October 150	$0.50	0.12
Implied volatility = 16%		
November 140	$6.60	0.24
November 145	$3.00	0.25
November 150	$1.20	0.24

TABLE 1: Theoretical call option and vega values. With a hypothetical stock at $145, these are the theoretical prices and vega values for the given strikes and expirations. *For illustrative purposes only.*

a vega for the spread. (Remember, short options have short vegas.)

WHO REIGNS SUPREME?

With our butterfly, the long 140 and 150 calls each have 0.12 of vega for a total of $0.24. But the two short calls at the 145 strike each have short 0.15 vega, for a total of -$0.30. Add it up and it brings the butterfly's vega to -0.06, because (0.24 +(-0.30) = -0.06). And that means the butterfly will likely lose $0.06 if vol goes up by one point. Conversely, it will likely profit $0.06 if vol drops by one point. Are you beginning to see the power of this?

The calendar is a little different. When you compare the same strike, vega may be higher for options further out in time. With the calendar, the long November 145 call has 0.25 of vega, and the short October 145 call has -0.15 of vega. As a spread, the calendar nets out with vega of 0.10—positive vega, that is. So if vol goes up by one point, assuming vols change by same number of points in both expirations, the calendar will likely profit $0.10. And if vol drops by one point, the calendar will likely lose $0.10.

So, the calendar is a long-vega trade, while the butterfly is a short-vega trade. And your assessment of whether vol is high or low, and whether it's going to move higher or lower, should help you choose one strategy over another.

If implied vol is high, we can expect butterflies to be cheaper. And if vol drops, the fly will likely profit, even though the spread has two long options. That's because the vega of the at-the-money (ATM) option is larger than the vega of options that are either in the money (ITM) or out of the money (OTM).

Calendars, however, are going to be more expensive in a high-vol environment, where a drop in vol can hurt your trade. The long option could lose more value than the short option because it has a bigger vega. So overall, the calendar could lose value.

In general, low-vol environments are often better suited for calendars. They can be cheaper, and can profit if vol rises. Butterflies, on the other hand, are often more expensive and can lose profit potential if vol goes up.

MORE TO THINK ABOUT

With either strategy, don't go into the trade and expect the underlying stock to settle exactly at the short strike on expiration day. You may get lucky, but that's a low-probability expectation. Instead, consider these strategies for stocks you think will be range-bound, and not likely to stray far from the short strike.

Another difference? Calendars are more easily rolled out when expiration nears. Of course, if you held an expiring butterfly on a stock you felt was going to remain stagnant, you could close that butterfly and open another one in a different expiration. But that's trading potentially six different strikes (three to close, three to open) with transaction costs. In contrast, rolling a calendar on a stock you think isn't going anywhere fast—that requires only rolling the expiring strike out to a longer expiration.

ONLY TIME WILL TELL YOU WHETHER the strategy you chose was the "right" one. Calendars and butterflies are designed to profit from time decay if the stock finishes near the strike at expiration. And both might eventually lose their entire value if the stock moves far enough away from the strike. These strategies are also closely related in many of their greeks. But it's their vega that separates them into strategies that can perform better in different vol environments.

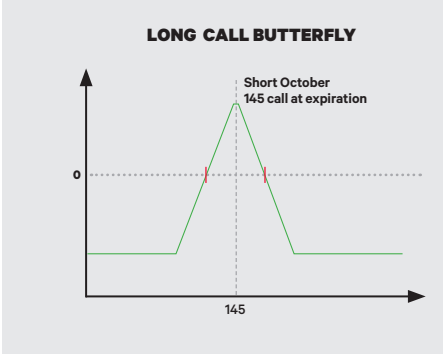


FIGURE 1: Risk graph of long 140/145/150 call butterfly. The risk graph shows the areas of maximum profit and maximum loss—on both sides of the middle strike. *For illustrative purposes only.*

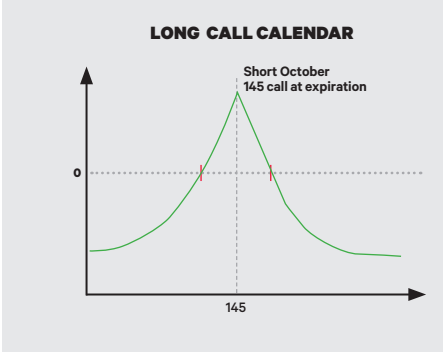


FIGURE 2: Risk graph of long November/October 145 call calendar. The graph looks nearly identical to the call butterfly, but notice how the graph is curved, rather than flat, around the 140 and 150 strikes. *For illustrative purposes only.*

? HOW TO PLACE CALENDARS AND BUTTERFLIES

Once you get comfy with calendars and butterfly spreads, you're ready to place trades.

1. Start from the Trade page.
2. Enter a symbol.
3. Select calendar or butterfly: Right-click on the ask/bid of the option you want to buy or sell. From the menu, select Butterfly or Calendar.
4. Adjust the order: Your order will be at the bottom of the order entry section below the option chain. Adjust the quantity, strikes, expiration, etc.
5. Place the order: You have one last chance to check the trade details before you click the Send button.

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 37, #1–2.

Rolling strategies can entail substantial transaction costs, including multiple commissions, which may impact any potential return.

PRO/ **TAKE AWAY:** *View your portfolio holistically and trade like a portfolio manager.*

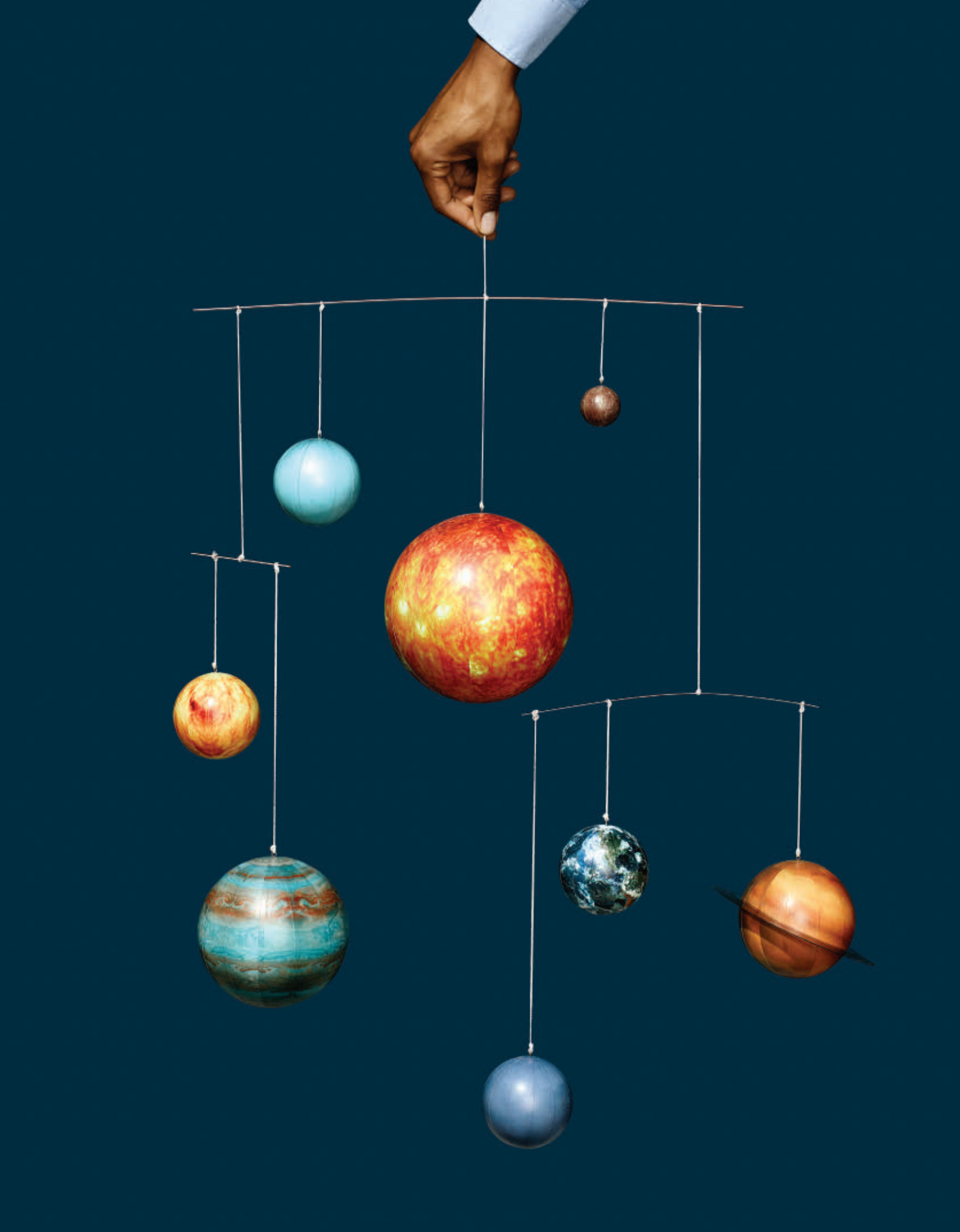
PORTFOLIO THEORY FOR THE LITTLE GUY

WORDS BY THOMAS PRESTON

BIG IDEA

BUILDING A PORTFOLIO OF SEVERAL STOCKS DOESN'T HAVE TO BE OUT OF REACH FOR THE INDIVIDUAL INVESTOR OR TRADER. CONSIDER THESE THREE OPTION SPREAD STRATEGIES TO HELP EXPAND YOUR THINKING BEYOND THE MYOPIC VIEWS OF A TRADING ACCOUNT.

PHOTOGRAPHS BY DAN SAELINGER



You may remember astronomer Carl Sagan's signature line "billions and billions" rolling musically off his tongue. He was usually referring to stars, galaxies, or something else equally mysterious in outer space. In finance, "billions and billions" often refers to the amount of assets portfolio managers run. You know: "Joe Schmoe, portfolio manager at Great Big Asset Management, with X billions of dollars under management." This may lead people to think that portfolio theory is only for Mr. Schmoe and his billions. Well, not necessarily. Portfolio theory can be for the rest of us, too—investors and traders, big and small.

JUST WHAT IS PORTFOLIO THEORY?

In simple terms, portfolio theory is about increasing return for a given risk level. Say you could invest $10,000 in strategy A or B. Strategy A has a potential return of $500 and a max risk of $1,000. Strategy B has a potential return of $700 and a max risk of $1,000. All things being equal, portfolio theory suggests you're better off investing in strategy B. For the same level of risk ($1,000), you get a higher potential return ($700 versus $500).

Then, there are systematic and unsystematic risks. Systematic risk is when stocks are pulled up or down by the overall market. Unsystematic risk is company-specific risk like earnings, news events, corporate uncertainty, and so on. You can reduce unsystematic risk with diversification, but you can't reduce systematic risk in the same way. That's because theoretically, all stocks are impacted by the overall market to some extent. You manage systematic risk by allocating your account's available capital among stocks, bonds, cash, and other assets. When you build a portfolio with many stocks, you reduce the unsystematic risk but maintain the market's theoretical return.

How many individual stocks do you need? If you trade too many stocks, your portfolio can become unwieldy. You could achieve diversification with fewer than 30 stocks, if each one was in a different sector. You could also make your portfolio more diverse as your experience allows, or as interesting investment opportunities present themselves.

TWO CONSIDERATIONS

First, why not simply invest in an index instead of a stock portfolio? An index fund, or index options like SPX or NDX, for example, can have lower commissions than investing in many individual stocks. And yes, a fund may come close to matching the performance of a benchmark index like the S&P 500 or Nasdaq 100, but you give up some flexibility. For example, if you think energy stocks might underperform, and if the index has significant weight there, you can't call up the S&P 500 and ask them to kick out the energy stocks. But you can remove or reduce positions in individual equities by managing a stock portfolio yourself.

Also, when you invest in a single index, you have less flexibility in choosing strategies than with individual stocks. Maybe you want to sell some calls against your long index to reduce your position's breakeven point, or generate income in exchange for limiting upside potential. Index options often have lower implied volatility ("IV") than options on individual stocks. That makes sense because indices have theoretically lower unsystematic risk than individual stocks. With lower IV, all things being equal, the option premiums are lower, too. That means you might collect less premium when you sell index options.

But if you don't have much money in your account, how can you buy a bunch of stocks to create a portfolio, especially when some of them cost hundreds of dollars per share? If you buy 100 shares each of even just a few stocks, it can add up.

A SPREAD ALTERNATIVE

There's another possible portfolio path: option spreads. Suppose you're trading a smaller account. Ideally, you'd want a bullish portfolio composed of long delta positions in stocks in order to reduce unsystematic risk through diversification, have flexibility in choosing stocks or weighting sectors, or employ a variety of strategies depending on volatility and your personal risk tolerance.

Here are three bullish strategies you might consider when creating a diverse portfolio. Capital requirements for these strategies are typically less than what you'd need for similar exposure to stock, and they provide the opportunity to build a portfolio of 30 stocks or fewer.

1 LONG CALL VERTICAL

A long call vertical is a long call at a lower strike and a short call at a higher strike in the same expiration that carries a debit. It's a bullish strategy, with a max risk of the debit paid if the stock is below the long call strike at expiration; a breakeven price of the long call's strike price plus the debit; and a max potential profit of the difference between the strikes minus debit when the stock is higher than the short call strike at expiration, not including commissions. You might consider long call verticals as a bullish strategy when the stock's volatility ("vol") is lower.

The debit of a long vertical depends on the stock's price. For example, the debit on a long 200/205 call vertical on a stock trading at $202.50 might be $260, while the debit on a long 100/102 call vertical on a stock trading at $101 might be $120. You could potentially have a portfolio of long call verticals in 20 individual stocks at different price levels, with a total debit (not including commissions) of less than $5,000.

2 SHORT PUT VERTICAL

A short put vertical is a short out-of-the-money (OTM) put and a long further OTM put in the same expiration that delivers a credit. For example, with SPX trading at 2,700, a short put vertical might be to sell the 2650 put and buy the 2600 put with the same expiration. It's another bullish strategy, with a max risk of the difference between the long and short put strikes, minus the credit received if the stock price is below the long

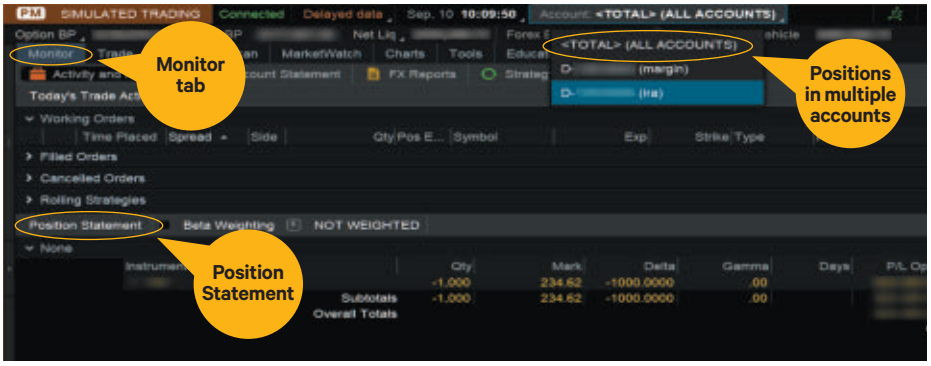


FIGURE 1: Position Statement. From the Monitor tab in thinkorswim, you can get an overview of all your open positions and all positions in all your accounts. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

put's strike at expiration; a breakeven price of the higher put strike minus the credit; and a max potential profit of the credit if the stock is higher than the short put strike at expiration, not including commissions. You might consider short put verticals for a bullish strategy when the stock's vol is higher.

The amount of money you need to establish a short put vertical is the difference between the strikes minus the credit. The capital requirement for a short 190/195 put vertical on a stock trading at $200 might be $300, while the capital requirement on a 96/98 put vertical on a stock trading at $100 might be $140. Again, you could potentially have a portfolio of short put verticals in 20 individual stocks at different price levels with a total capital requirement (not including commissions) of less than $5,000.

Expand your knowledge base. Learn more about the various option strategies from the course offerings at **tdameritrade.com/education.**

3 LONG CALL DIAGONAL

A long call diagonal is a long at-the-money (ATM) or in-the-money (ITM) call in a further expiration, and a short OTM call in a closer expiration that carries a debit. It's another bullish strategy, with a max risk of the debit paid if the stock is below the strike price of the long call at that long call's expiration. Because of the potential to roll the short front-month option to a further expiration and take in a credit to reduce the diagonal's net debit, the breakeven price and max potential profit aren't always defined. Yet, without any rolls, the diagonal has a profit of the difference between the long call strike and the short call strike minus the debit, if the stock is higher than the short call strike at its expiration, not including commissions. You might use long call diagonals as a bullish strategy when the IV of the long call is lower, and the IV of the short call is higher. This can happen around earnings or news events.

TRADER GLOSSARY
TURN TO PAGE 36

The debit of a long call diagonal depends on the stock's price. For example, looking at long calls with 90 days to expiration, and short calls with 30 days to expiration, the debit on a long 200/205 call diagonal on a stock trading at $202.50 might be $450, while the debit on a long 100/102 call vertical on a stock trading at $101 might be $290. The capital requirements for diagonals can be higher than for long call verticals or short put verticals. But you can think of long call diagonals as a lower-capital-requirement alternative to covered calls (long stock and short call), where the long option takes the place of the long stock.

Consider two caveats. Using option spreads instead of stock means you don't collect any dividends. Plus, you have to deal with rolling, or closing these spreads at expiration, which can incur extra commissions and fees. You might also have to be more attentive to option spreads than long stocks. But the lower capital requirements of spreads means you can potentially create a more diverse portfolio than with long stock. Like everything in trading, it's a trade-off.

ADD A PERSONAL TOUCH

Being your own portfolio manager in some sense means looking at your assets together. One feature of the thinkorswim® platform from TD Ameritrade is the ability to see all your positions—stocks, options, funds, futures—in one display. By default, you'll see all your open positions in the Position Statement section on the **Monitor** tab for a single account (Figure 1).

You can see all positions from multiple accounts, like margin accounts, IRAs, and joint accounts, by selecting "All Accounts" from the dropdown menu at the top of the platform.

SO, WOULD YOU LIKE TO PLAY "PORTFOLIO manager"? You can experiment with option spreads to create a portfolio using a small percentage of your total assets and compare its performance to other products. It's all about having choices, being realistic about the size of your trading account, and finding ideal strategies relative to available capital.

SPREAD DISCLOSURES:

Options credit spread: Maximum potential reward for a credit spread is limited to the net premium received, less transaction costs. The maximum loss is the difference between strikes, less net premium received, plus transaction costs.

Options debit spread: Maximum potential reward for a debit spread is limited to the difference between strikes, less net premium paid. The maximum loss is the net premium paid and transaction costs.

Rolling strategies can entail substantial transaction costs, including multiple commissions, which may impact any potential return.

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.

Options are not suitable for all investors as the special risks inherent to options trading may expose investors to potentially rapid and substantial losses. For more on the risks of trading and trading options, see page 37, #1–2.

FIVE CHART PATTERNS FOR MOMO TRADERS

EASY / **TAKE AWAY:** *How to identify potential consolidations, continuations, and reversals in charts.*

BIG IDEA: CROWDS MOVE MARKETS, AND CHART PATTERNS TELL US PLENTY ABOUT THEIR BEHAVIOR. WHEN YOU KNOW WHAT THE CROWDS ARE DOING, YOU MAY BE ABLE TO SEE MORE CLEARLY WHERE MOMENTUM EXISTS. THESE FIVE CHART PATTERNS COULD HELP YOU RECOGNIZE SHORT-TERM PRICE MOVES THAT MAY HELP YOU STRATEGIZE YOUR OPTION PLAYS.

WORDS BY **JAYANTHI GOPALAKRISHNAN**

PHOTOGRAPHS BY
DAN SAELINGER

YOU'VE HEARD IT SAID: "THE TREND IS YOUR FRIEND, UNTIL IT ENDS." BUT DOES IT STAY YOUR FRIEND ALL ALONG THE WAY? HOW ABOUT THE MORE REALISTIC, "THE TREND IS YOUR FRIEND WHEN IT STARTS, BUT ONCE IT GETS GOING, IT DRIVES YOU NUTS!" TRENDS CAN BE ALLURING. AND DECEPTIVE. SOMETIMES A TREND PRETENDS TO END, MAKES YOU RUN FOR THE HILLS, AND THEN—TRENDS SOME MORE.

RAISE YOUR AWARENESS

Nobody knows when a trend is going to begin or end. But you can analyze the markets from the perspective of "crowd behavior." And that could potentially increase your chances of knowing which way price could move.

Crowds create momentum in the markets, but they can also influence you to make hasty trading decisions like buying at the top of a trend or selling at the bottom of one. How can you objectively analyze crowd action and gauge your entry points?

PATTERNS TO THE RESCUE

You may have heard of chart patterns with esoteric names like head and shoulders or broadening bottoms. Chart patterns tell a story about the battle between bulls and bears. When you see this battle play out, it exposes directional bias, which ultimately may help you manage options trades.

Chart patterns are visual, and analyzing them is more art than science. As an option trader, you want momentum. And that means looking for strong price breakouts when, for instance, volatility picks up and raises premiums. You don't need to know every chart pattern. But it's helpful to consider a few from three broad pattern categories—consolidation, continuation, and reversal—to get started.

THE CROWD EFFECT

First, start by pulling up a chart on your thinkorswim® platform from TD Ameritrade. Go back in time far enough to observe a trend, beginning to end. Look for areas of consolidation, continuation, and reversal. You'll discover different characteristics in each of these categories.

Consolidation—After the initial downtrend in Figure 1, price consolidates for about four months before an uptrend begins. During consolidation, traders are unsure about price direction. The uptrend starts only when price breaks out of the rectangle's top edge on high volume.

Continuation—Once an uptrend begins, notice several pauses within the trend, although the trend continues. During these pauses, continuation patterns such as flags, pennants, and triangles emerge. Notice gaps between price bars. These can also provide clues about price movement.

Reversal—The trend could end here (last green bar on chart), but the probability appears low. Price did make a huge move higher on an "up gap," and with high volume, which suggests upside momentum is still present. On the following day, there was a selloff, but on low volume. So, bulls may still be in control.

Let's take a deeper dive into these common patterns.

CONSOLIDATION OR CONTINUATION?

Consolidations usually form before a trend begins, while continuations take place when a trend pauses before resuming. Here's what some of the more common patterns reveal.

1 GAPS

Price gaps occur frequently, as you can see from looking at any price chart. Gaps come in different types—common, breakaway, exhaustion, continuation—but we won't explore those details for the moment. For now, keep in mind that gaps look like blank spaces on a chart, often accompanied by high volume. Several gaps are highlighted in Figure 1.

FIGURE 1: Gaps come in all shapes and sizes. Sometimes prices open higher or lower than the previous day's close. This can happen for any number of reasons and indicates if bulls or bears have the upper hand, even if it's for a short period of time. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

Breakaway gap—This signals an attempt to change a trend's direction. In this case, it occurred after a downtrend, and on high volume. This suggests the bulls may have finally taken over, but it took them about five months to gain their strength.

Common gap—A news event or earnings release likely caused this reaction. Although price gapped up on high volume, after the reaction, prices retraced back.

Continuation gap—This takes place in the middle of a move and confirms the trend's direction, in this case a bullish one. Note how the low of the gap bar acted as a strong support level—prices hit this level and bounced off.

2 RECTANGLES

These can be consolidations or continuations. They have relatively equal levels of highs and lows. To form a rectangle, price comes close to, or touches, these levels at least four or five times.

In Figure 2, notice how volume stays low when price moves within the rectangle, except when it touches a top or bottom. When price approaches a top or bottom, some traders think it may be a reversal, and take positions accordingly. Yet, when things don't go as expected, they may panic and rush to either sell their long positions or cover their shorts. That's why there's so much momentum when price breaks out of a rectangle, regardless of whether a trend starts or continues.

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3 FLAGS

These are pauses in a trend that explode with strong momentum, usually in the original trend's direction. They look like a parallelogram with a slope, opposite that of the prevailing trend. Flags often portray a tug-of-war between buyers and sellers. In the flag formation in Figure 3, note the slight uptick in volume when price touches the flag's lower level. Although the prevailing trend is bullish, the bears try to take control over the bulls during this consolidation. Even after price breaks out of the flag, bulls have some hesitation. After a few low-volume trading days, the bulls regain their strength, and bullish momentum picks up. A strong breakout like this suggests bullish directional bias—think short put verticals and long call verticals.

FIGURE 2: Rectangles. During a consolidation, price usually moves up and down between the top and bottom of a rectangular pattern. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

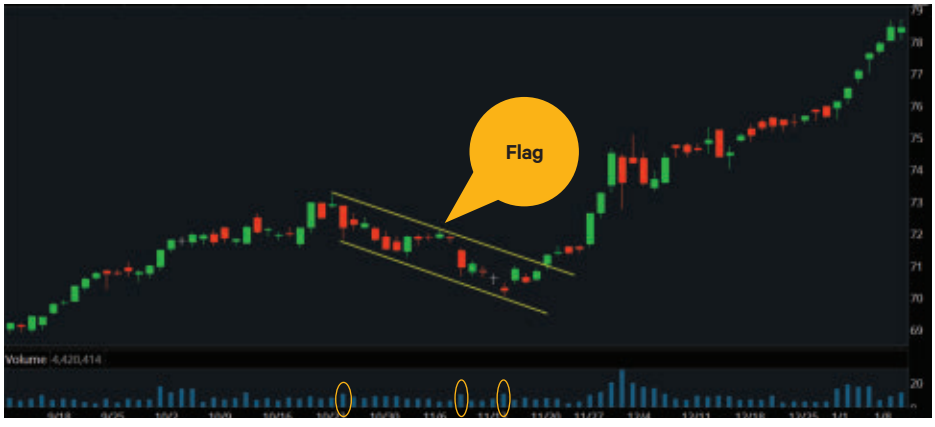


FIGURE 3: Flags as continuation. During a trend, price may move in the opposite direction for a time. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

THERE'S AN EASIER WAY.

On your thinkorswim® platform from TD Ameritrade, go to the **Charts** tab, bring up a chart, and select Patterns. From the dropdown menu, select patterns to identify.

FIGURE 4: Head and shoulders. As reversals, these patterns could appear at the top or bottom of a trend, but don't let them fool you. Wait for a breakout below the "neckline" before putting on positions. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

FIGURE 5: Triple tops for a reversal. There can be a lot of momentum as a triple top plays out because of the indecision among traders. Keep an eye on volume as the peaks form. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

THE REVERSAL EFFECT

Has the market topped or bottomed? Here are a couple patterns that typically appear at tops, and in reverse formation, at bottoms.

4 HEAD AND SHOULDERS

These patterns can occur at the top of an uptrend, or the bottom of a downtrend. Remember Figure 1, where we weren't sure if the trend was going to reverse or continue? It wasn't until about nine months later that the trend showed signs of a reversal, with a head and shoulders top (Figure 4). Note the middle peak (head), with two lower peaks on either side (left and right shoulders).

In the classic head and shoulders pattern, the head isn't spiky. But now that more traders have access to the markets, the head forms quickly as retail and institutional traders jump in and fuel the rally. Meanwhile, the bigger traders may take advantage of the price peak and sell off their positions.

Head and shoulders patterns have what's called a "neckline," which is the clear support (or resistance for an inverse pattern). Price needs to break out from the neckline on high volume to increase the likelihood of a true reversal. In Figure 4, the last four down bars show increasing volume—bears are taking over, and the trend is likely to reverse.

5 TRIPLE TOPS

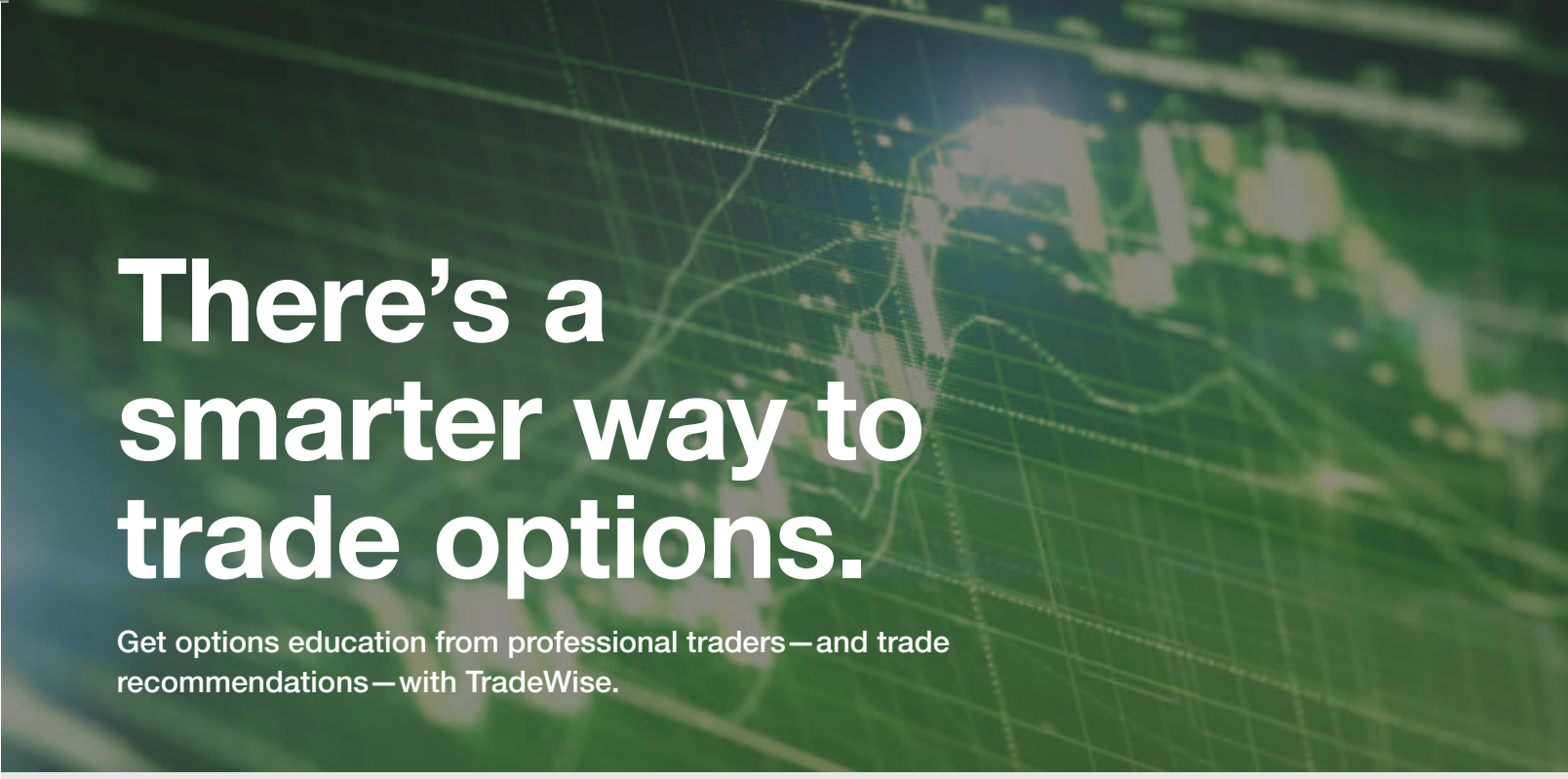
When you have three somewhat equal price peaks after an uptrend, it may be an indication of the trend's end and the beginning of a reversal. While the triple top is playing out, you may sense indecision among traders. It could become a double top, a rectangle, or some other continuation pattern, depending on where price bounces occur, and with how much volume. After the third peak, if volume increases during selloffs (a sign the bears are winning the battle), it's likely the trend will reverse.

In Figure 5, after the third peak, you see a consolidation. Then price heads back toward the top, but doesn't make it. The catalyst for the turnaround was one selloff day with huge volume. After that it was all downhill—price continued to drop, with high volume on down days. There were times when bulls attempted to push prices higher, but without success. The bears had the upper hand.

WHEN LOOKING FOR MOMENTUM, acknowledge the strength and power of crowds. There are two things crowds do: buy and sell. And while it's never a sure thing, their behavior tends to be repetitive. Resist being drawn to the trend's external appearance. Instead, try to recognize what's going on behind those price bars to gauge your potential entry and exit points.

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 37, #1–2.



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The Hidden Risks of Index Trading

PRO ● **BIG IDEA:** WHY DON'T SPX AND S&P 500 FUTURES MOVE UP AND DOWN TOGETHER? THEY HAVE THEIR DIFFERENCES, AND ONE MAY TELL YOU MORE ABOUT WHAT THE MARKET MIGHT BE DOING.

• Back when "the market" was just stocks, some genius came up with a way to figure out what all the stocks (at least the popular ones) might be doing overall. Behold, the equity index! Whether it's price-weighted like the Dow Jones Industrial Average, or capitalization-weighted like the S&P 500, an index is just an average of stock prices. And when the stock prices change, the index value changes. Simple—and useful.

HOW INDICES WORK

Indices turned out to be popular, and they spawned all sorts of products like index options and index futures. Those are handy when you want to speculate on an index's direction. Fire up your thinkorswim® platform from TD Ameritrade and have a look. You might have /ES (the S&P 500 future) and SPX (the index on the S&P 500) loaded up on a watchlist. Because they're both based on the S&P 500 index, you figure when one moves up, the other should, too, by the same amount. But they don't—at least, not always. How come?

There are 500 individual stocks that make up the SPX. Many of these stocks may trade actively, with transactions occurring every second. Others may trade less frequently—every few seconds, or few minutes. Here's where it gets interesting. The SPX changes when the last trade price of any component stock changes. Meanwhile, the stock's bid and ask prices might be above or below the last trade price, and more accurately reflect its current value. But until that stock trades, the SPX's value doesn't change. So, it doesn't necessarily reflect the current value of all 500 stocks. The SPX, then, is a snapshot of the last trade prices.

The /ES future, on the other hand, is its own product, and isn't tied directly to the S&P 500 stocks. That means the value of /ES is determined by buyers and sellers of the futures contract. If traders think the S&P 500 will rally, they'll buy /ES and drive its price up. The price of /ES doesn't have to wait until all 500 stocks trade. If /ES traders think a stock that hasn't traded yet has a higher or lower price, they'll adjust their /ES trades accordingly. When traders look for arbitrages between /ES and basket of 500 stocks, they look at the bid and ask prices of the stocks, and not their last trade prices.

This is why SPX and /ES don't always move up and down together, tick by tick: the SPX changes only when one of its stocks trades, but /ES can change anytime. The arb relationship means when one makes a big move up or down, the other does, too. But when there isn't much movement in the market, you may see /ES move up and down more actively than SPX. You may also see /ES move up or down quickly, and then a few seconds or minutes later, SPX catches up. And this is important if you're trading SPX options, because SPX options are priced off /ES prior to expiration.

WHY PAY ATTENTION TO /ES?

A trader who's bullish on the S&P 500 might consider selling a put on the SPX options. Say you're looking at a particular put, and notice SPX hasn't changed, but the put's price has dropped. Why? Possibly because the "market" believes the S&P 500 might go up and is pushing up the price of /ES. But all stocks in the SPX haven't traded yet. That SPX put is looking at the /ES, not the SPX. And if you want to know what the market's doing, you might consider looking at /ES, too. —Words by THOMAS PRESTON

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 37, #1–2.

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.

Butterfly — Typically, a market-neutral, defined-risk strategy, composed of selling two options at one strike and buying one each of both a higher- and lower-strike option of the same type (either all calls or puts). The strategy assumes the underlying will remain relatively unchanged during the life of the trade, in which case, as time passes, and/or volatility drops, the combined short option premiums exhibit more decay than the combined long option premiums, resulting in a profit when the spread can be sold for more than its original debit (which is its maximum loss).

Calendar — A defined-risk spread strategy, constructed by selling a short-term option and buying a longer-term option of the same type (i.e., calls or puts). The goal: as time passes, the shorter-term option typically decays faster than the longer-term option, and profits when the spread can be sold for more than you paid for it. The risk is typically limited to the debit incurred.

Delta — A measure of an option's sensitivity 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 how an option's delta is expected to change per $1 move in the underlying.

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.

Iron condor — A defined-risk, short spread strategy, constructed of a short put vertical and a short call vertical. You assume the underlying will stay within a certain range (between the strikes of the short options). The goal: as time passes and/or volatility drops, the spreads can be bought back for less than the credit taken in or expire worthless, resulting in a profit. The risk is typically limited to the largest difference between the adjacent and long strikes minus the total credit received.

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 — The simultaneous purchase of one put option and sale of another put option at a different strike price, in the same underlying, in the same expiration month.

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.

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.

Short vertical spread — A defined-risk, directional spread strategy, composed of an equal number of short (sold) and long (bought) calls or puts with the same expiration 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 call verticals are bearish, while 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 in a short put vertical by subtracting the credit received from the higher (short) put strike, or in the case of a short call vertical, adding the credit received to the lower (short) call strike.

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

Vega — A measure of an option's sensitivity 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 option 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 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

OPTION STRATEGIES

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

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

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 option strategies, there is a risk in 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 option 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 option 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 provided by TD Ameritrade Futures & Forex LLC. Trading privileges subject to review and approval. Not all clients will qualify.

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Physicists Discover *"Short Squeeze"* Responsible for Mysterious Movement in Subatomic Particles

thinkorswim Press Release

Physicists at the University of Roswell are reporting a new theory to explain the movement of particles that doesn't rely on gravity, magnetism, or other confusing things. The discovery initiated the reevaluation of 100 years of subatomic theory, and could advance breakthroughs in science.

Dr. Cresce Attivo, lead physicist at U. Roswell labs, explained the genesis of the theory. "We had just finished our Niels Bohr birthday celebration planning meeting, and noticed Dr. Philbin was missing. I went to his cubicle, assuming he was working on the latest data from the collider. I was about to give him grief for slacking, but noticed he was looking at a time series with a big gap in it. I asked him what it was. 'It's a stock that had a gap open after earnings and was higher on short covering as traders were getting squeezed,' Philbin said. Sounded like Greek to me."

During a brief interview with Dr. Philbin, who was too busy trading crude oil and bonds to talk much, we ascertained he was using the thinkorswim® platform from TD Ameritrade. That explained how Dr. Attivo, who had no prior trading experience, was able to make the connection between the behavior of capital assets and subatomic particles by looking at a price chart.

"I quickly researched this 'trading' business, and discovered that just as traders need to close positions to avoid margin problems with the clearing firm and make stocks more volatile, excited quarks force electrons to shift orbits when their losses squeeze them. The resulting volatility in stocks is what we see in subatomic particles. It was my eureka moment!" Attivo explained.

This new theory suggests that quarks act as a subatomic clearing firm and enforce margin requirements on electrons, which take speculative orbits depending on their bias about the direction of the spin of fermions. Quarks use Reg T to determine the electron's risk and required capital. When a position starts to go against the electron and falls below the capital threshold, boom! it can get pushed to much higher or lower prices, that is, orbital wavefunctions.

Attivo adds, "After all this time thinking about complex formulas and black holes, it turns out that trading is at the heart not only of our macro world, but the micro and subatomic worlds as well. Now that's solved, I will have time to open and fund my futures account, equity account, and IRA. The thinkorswim platform offers a universe of trading."

The physics lab at the University of Roswell is now closed since all physicists are busy trading.

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