thinkMoney®/44

Random musings for traders at TD Ameritrade—SUMMER 2019

How big should my options trade be?

IT HAS TO DO WITH YOUR OVERALL RISK EXPOSURE

PAGE 16

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ISSUE 44

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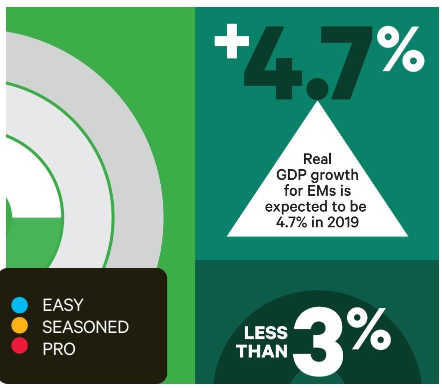
Cover Photograph by
Dan Saelinger

Think of vega and volatility as siblings—related, but each doing its own thing.

Vega: It's Not the Number You're Thinking—**Page 24**

MISCELLANEOUS

REGULAR COLUMNS



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
- SEASONED
- PRO

Size Matters

• YOU'VE HEARD IT all before: Trade small. Don't expose yourself to too much risk. Diversify. And so on. In poker, your bet size isn't likely to be the same for each hand you play. And as you continue to play, your strategy changes depending on the probability of winning the hand. The same goes for position sizing your options trades. You know the size of your trading account. How much of that are you willing to risk on one trade?

It's a question that's easier to ponder than answer. What works for one trade or trader may not work for another. Sometimes you may use a certain percentage of your account size, while other times you may look at max loss. If you spread your funds across one or two trades, it could whittle down your account and blow it out. Maybe you had a bunch of great trades and your account has doubled in size. Do you double the risk per trade now?

In a word, position size matters—now and in the future as conditions, and your net trading capital, change. Yet, we often don't look at it holistically enough. In "How Big Should My Options Trade Be?" on page 16, you'll learn how you might gauge your risk for your trading account and your portfolio from the perspective of utility. Are you ready to up your risk and put on a larger position, or do market conditions dictate that you dial back your position size? It depends on a lot of variables—market trend, width of bid/ask spreads, volatility, and so on.

Once you place a trade, whatever goes into making a decision, it helps to have some tools to let you know what could happen to options prices when things change—the direction of the underlying, time marching on, and volatility rising, for example. The "greeks"—delta, gamma, theta, vega—are such tools. In part 2 of our greek saga on page 24, we'll cover vega and show you a few things you might not already know about this volatility soothsayer.

The sky's the limit when it comes to the number of ways you can adjust and manage an options position. So keep it simple and consider using the principles of utility and greeks to help with entries and exits. When things change, you'll be better prepared to act on your trading plan instead of reacting to unexpected surprises.

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

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**

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2

• Transaction costs (commissions and other fees) 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, the standard commission for online equity orders is $6.95; online options orders are $6.95 + $0.75 per contract. Orders placed by other means will have higher transaction costs. Options exercises and assignments will incur a $19.99 commission.

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CHECK IT OUT
https://events.thinkorswim.com/#/webcast

PHOTOGRAPH: DAN SAELINGER

COACH'S CORNER

Trading Education: Behind the Scenes

BIG IDEA: READY FOR NEW EDUCATION COURSES, WEBCASTS, AND LIVE EVENTS FROM TD AMERITRADE? GET UPDATES FROM EDUCATION COACH CAMERON MAY.

• Hey Coach May! Tell us about the evening segments you're now hosting.
We've rebranded our Monday and Wednesday evening webcasts to an "All About Stocks" and "All About Options" series. Each will adopt a specific theme every month. For example, one month might focus on sector rotation. Another might look at strategies for a bear market. The best thing is that no matter where you are, you can watch the webcasts on YouTube.

There are so many robust features on the thinkorswim® platform. That's why we provide these educational tools to our clients—to help them get better acquainted with the platform so they can use it efficiently.

What about the "rotating topic" series?
These topics also change every month, with a general theme running throughout the month. For example, in April we dedicated the series to Financial Literacy Month and supplemented the webcasts with articles from *The Ticker Tape*. Another month we may focus on understanding different account types or solo 401(k) plans, for example. The series is offered every week and we cover a topic within the theme. The last week is a random session where we take questions that were asked in other webcasts and explore them in greater detail. If someone asks a question that can't be addressed in a Q&A webcast, we may dedicate an entire session to that question.

Our objective is to make all our clients aware of the resources available to them. We want to fill any gaps in financial knowledge our clients may have.

Can you tell us about the semiannual Education Day?
I'd be happy to paint the Education Day picture for you! Yes, every six months, TD Ameritrade dedicates an entire day to bringing educators and investors together to address timely and timeless questions. All other education webcasts and efforts are suspended for the day to give full attention to this priority, and as an Education Day presenter, I can say these events are highly

anticipated by presenters and attendees alike. They really are a highlight of my year.

Each Education Day has a different educational emphasis. This year's focus is retirement planning. Every TD Ameritrade account owner is invited to attend one or all of the scheduled presentations at no cost. We go to great lengths to ensure that our clients are among the best-educated self-directed investors in the marketplace.

The format for Education Day is live-streamed webcasts that run throughout the day, with short breaks between each 15- to 45-minute session. Because they're delivered online, you can join from any device of your choice in the comfort of your home, office, bus, or wherever.

REGISTER FOR EDUCATION DAY!

Click on the link from within your TD Ameritrade account, or visit tdameritrade.com/educationday.

Attending live events offers the opportunity to listen in real time to your education coach's insights on the scheduled topic and to get answers to your questions via a live chat function. And if you miss a webcast or would like to review a session, archives for each event can also be found on the Education Day site.

As an example of the sort of value you might expect when attending Education Day, our last event included nine retirement-oriented webcasts delivered by five education coaches and two invited guests. There were presentations for investors in every stage of retirement, from those beginning their journey toward retirement to those who have already entered their retirement years.

These events provide an opportunity for us to return something of real value to our clients. We saw record-breaking numbers throughout Education Day in March, and we hope to see even more TD Ameritrade account owners take advantage of this unique resource this fall.

THINK TANK • EASY

Tools When You're on the Go

BIG IDEA: GLOOM OR GLORY, YOU WANT TO KNOW WHAT THE MARKETS ARE DOING. AND WITH YOUR MOBILE DEVICE, YOU CAN ACCESS JUST ABOUT EVERYTHING YOU NEED WITHOUT BEING TIED TO YOUR TRADING DESK. HERE ARE SOME TOOLS THAT COULD KEEP YOU EVEN MORE ENGAGED WITH THE MARKETS.

A NEW TRADING PLATFORM AT TD AMERITRADE

Keep your eyes peeled this summer for a new web-based trading platform from TD Ameritrade. Why's it a big deal? There's no need to download an app or use a specific device. We are launching a web-based leg of the TD Ameritrade trading tripod, a complement to the capabilities of the thinkorswim® desktop platform from TD Ameritrade and Mobile Trader.

So, because it operates as a web page, does that mean it lacks certain capabilities? Not necessarily. You still get the full trading product package. And that means you can trade, analyze your risks, and manage your positions all in one place.

This new web-based trading application is simple, but offers a powerful tool set that's focused on portfolio management for our sophisticated trading clients. And it incorporates all of the latest trading technology from TD Ameritrade.

TD Ameritrade will be rolling out access to the new site over the course of the summer in small waves. If you're one of our early adopters, please share your experience with us using the feedback link on the site.

BETA WEIGHTING ON MOBILE

Your portfolio probably includes different asset types—stocks, options, futures, and so on. You may know how each of those positions is performing, but what about your entire portfolio? There may be times, such as year-end or during a market correction, that prompt you to look at your portfolio as a whole. But simply looking at how each asset type is performing might not give you an accurate picture. Each component of your portfolio is measured differently, so comparing their performance against each other may not be the best

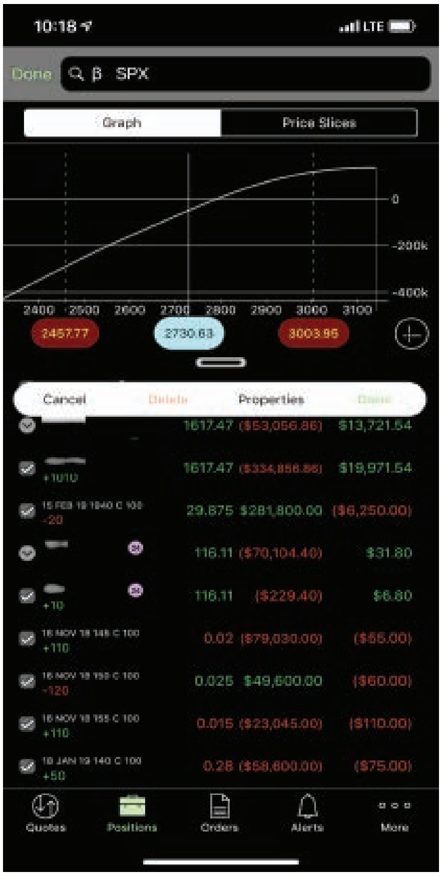

FIGURE 1: Beta weighting on TD Ameritrade Mobile. **You can standardize all your positions to a benchmark.** *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

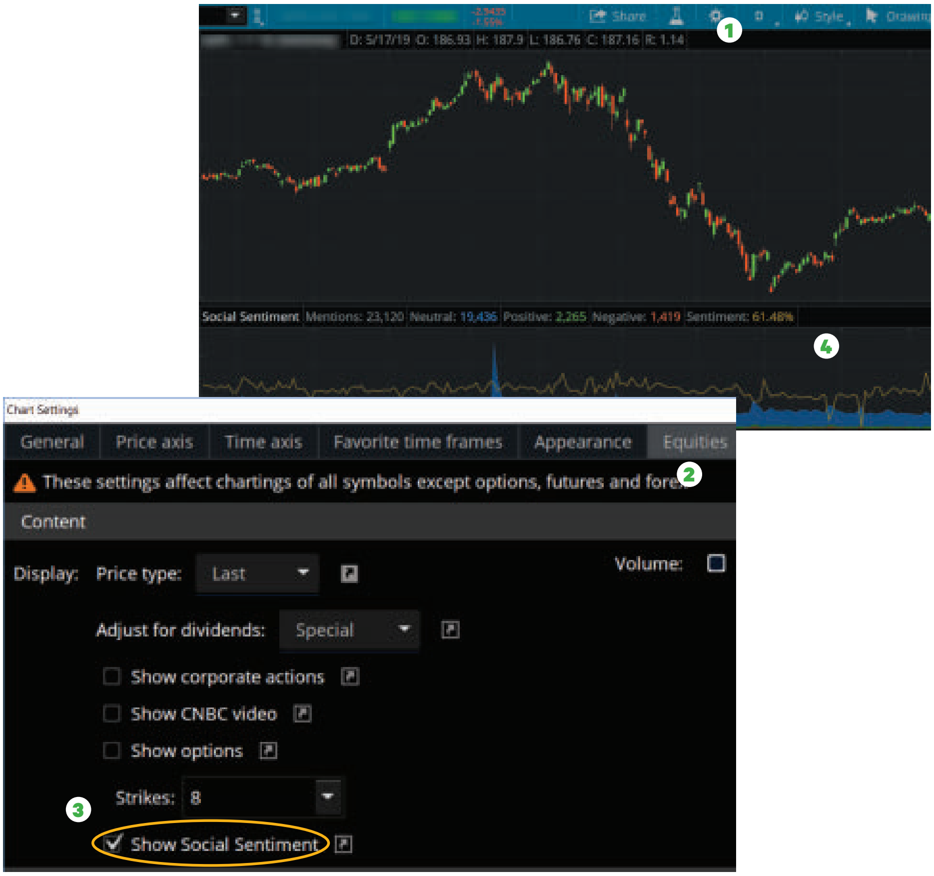

FIGURE 2: Social Sentiment Indicator. **Use this feature to get an idea of the general sentiment of a specific company.** *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

approach. However, if you were to beta weight your portfolio components against a benchmark such as the S&P 500 or Nasdaq-100, you'll likely get a more normalized view.

You can beta weight your portfolio on Mobile Trader, which means you can do it from anywhere (see Figure 1).

From the TD Ameritrade Mobile Trader app:

1— Select **Positions** on the side menu.

2— Select the gear icon, and from the Columns Editor, scroll down and select one of the beta-weighting suggestions (you can beta weight on the NDX, RUT, SPX, or customize).

3— Your portfolio will be displayed based on your choice. The P&L will be normalized, and your positions will be weighted by beta, position size, and delta.

TRADING IN THE ERA OF SOCIAL MEDIA

Some social media posts can catch enough buzz to move prices in the stock market. Wouldn't it be great to know which ones are making waves before the news goes viral? The Social Sentiment feature on the thinkorswim platform from TD Ameritrade gives you an idea of social media mentions of different companies so you can analyze the relationship between social media discussion around a company and its stock price. The Social Sentiment indicator displays how many positive, negative, and neutral mentions there are for the specific company.

From the Charts tab:

1— Click the **gear** icon above the chart.

2— Click the **Equities** tab at the top.

3— Check the Show Social Sentiment box.

4— Social Sentiment will be displayed on a lower subgraph.

Social media content/data can be useful for researching specific companies as you make self-directed investment decisions. However, certain risks can be accentuated based on the nature of the medium. Anyone can post to social media, and you often cannot establish the identity, knowledge level, investing expertise, or even the intent of the person posting. Social data should not be used alone when making investment decisions. Please consult other sources of information and consider your individual financial position and goals before making an independent investment decision.

BE THE MONKEY

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**

Let's Get Chatting

CHAT SWIMMER #1: So, what do you call an upside down cup & handle pattern? I remember there being a name for it.
CHAT SWIMMER #2: Yeah, it's called total doom! Let's count all the dooms ... and the room sentiment is...?

CHAT SWIMMER #1: Were you a hack driver before?
CHAT SWIMMER #2: My buds drove taxis. Yup, they were hackers.
CHAT SWIMMER #1: The pre-internet definition of the word was drive cab/ taxi, or butchering something, or axing wood.
CHAT SWIMMER #2: Another word lost to net lingo.

The comments from Chat Quips 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 Quips for grammar, consistency, and similar purposes.

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San Jose Marriott
San Jose, CA
07/19/19 - 07/20/19 | 8:30 AM - 5:00 PM PT

Technical Analysis Workshop
New York Marriott Downtown
New York City, NY
08/03/19 | 8:30 AM - 5:00 PM ET

Options Strategies Workshop
New York Marriott Downtown
New York City, NY
08/04/19 | 8:30 AM - 5:00 PM ET

Market Drive
Grand Hyatt New York
New York, NY
09/14/19 | 8:00 AM - 3:30 PM ET

Technical Analysis Workshop
The Westin Irving Convention Center at Las Colinas
Irving, TX
09/20/19 | 8:30 AM - 5:00 PM CT

Options Strategies Workshop
The Westin Irving Convention Center at Las Colinas
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PHOTOGRAPH: DAN SAELINGER

ASSOCIATE SPOTLIGHT

Trading Inferno

CHAD COCCO, THINKORSWIM® PLATFORM PRODUCT MANAGER FOR TD AMERITRADE, HAS ONE GOAL—TO MAKE SURE CLIENTS GET WHAT THEY NEED TO MAKE THEIR TRADING LIVES EASIER.

Illustration by Joe Morse

• CHAD TRADES FUTURES with gusto. And he also loves video games. With that combination, it's a no-brainer: You've got someone who's passionate about user interface design. And having worked with the technical support team at TD Ameritrade for more than 12 years gives him a major leg up when focusing on client experience and the stability of the thinkorswim platform. He has a great instinct for what's going to move the needle and how to build things that matter for TD Ameritrade clients.

1

You have a strong technology background. What brought you to TD Ameritrade?
I started trading when I was in high school. That led me to work in something connected to the stock market. I was working in technology and was a liaison between the company I was working for and the thinkorswim brokerage. So, I applied for a tech support position with the brokerage firm. From there, I moved on to client support. And now I'm involved with product design.

I'm responsible for development work—in other words, prioritizing and focusing on what the developers are working on next, whether it's fixing bugs, working on new features, or working primarily with the charts and user interface of thinkorswim.

2

What's a typical day for you?
I look mostly at client irritants, new technology in the markets, innovative things we can do in the future, putting out good software, and organizing what our developers are working on. We do a lot of user testing on new features that are due to be released. Client requests are a big thing for us. We look for technology that makes trading simpler. We always want to differentiate ourselves from our competition.

3

Are you constantly in touch with clients?
Yes. We watch all the interactions our support reps have with clients. We also keep an eye on our social media channels to see what clients are talking about. We have a lot of face time with clients at trade shows. And somebody from our team always attends Market Drive events, so we get a good feel for our clients' needs.

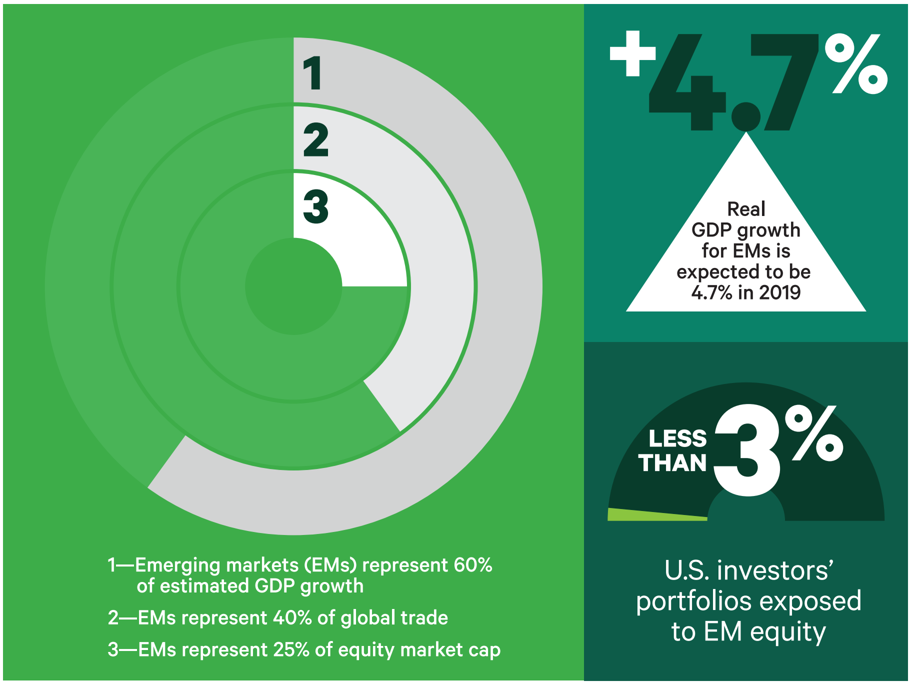
4

You've traded since high school. What are three rules you live by?
One is to have a rule and stick to it. Another would be don't trade with emotion. Finally, use the technology available to you. In other words, don't trade blind. Use all your resources.

5

I hear you're passionate about Burning Man. What draws you to it?
I love the community it builds and how it allows everyone to participate instead of consume. It's incredibly bonding.

It's the experience as a whole that makes Burning Man what it is.



Source: International Monetary Fund

INDUSTRY SPOTLIGHT • SEASONED

Up-and-Coming Emerging Markets

BIG IDEA: HOW DO YOU ADD DIVERSITY TO YOUR TRADING PORTFOLIO? EXPAND YOUR HORIZONS BY KEEPING AN EYE ON GLOBAL STOCKS.

• AS AN OPTION TRADER, how many potential opportunities can you track at once? It's a balance. Too many, and you likely won't make good decisions. Too few, and you may miss out. That balance is also shaped by what you're watching. If you're focused on a particular sector or a handful of your favorite stocks, there may be long periods when you won't trade. If you'd like to broaden your focus, possibly consider global stocks.

RE-EMERGE YOUR PORTFOLIO

There are many categories under the "global stocks" umbrella. One that's often ignored is emerging markets (EMs)—i.e., countries with stable growth potential. EM stocks sometimes get a bad rap because they have a reputation for being cheap. EMs may be unfamiliar territory. But you don't have to know everything about a specific country or region's economy to get started. Consider three relevant areas: overall economy, currency valuations, and interest rates.

Overall economy. When the U.S. economy does well, EMs sometimes suffer. And when the U.S. economy is in a decline, EMs might still suffer. During most of 2018, the MSCI Emerging Markets Index, a benchmark for EM performance, was in a bearish trend. The U.S. economy was growing, and EM countries with overvalued currencies and expanded economies got crushed. The overall impact? Several EM currencies hit multiyear lows, especially Russia, Mexico, Argentina, and Turkey.

Currency valuations. The value of the U.S. dollar can be a driver of global financial conditions. In particular, it can impact commodity prices, which is key for many EMs. For example, if oil prices rally while the U.S. dollar strengthens, any country that imports oil might feel the pain. This will be reflected in its currency valuation almost instantly. Financial conditions often tighten, and the country could face inflationary pressures.

LEARN MORE ABOUT EMs

What are some emerging market equity funds? Find out by visiting **http://bit.ly/blackrockEM**

Interest rates. The Fed raised interest rates in the U.S. four times in 2018 because of economic expansion. It then reversed that decision, reassuring investors that inflation was tame and that the Fed would be cautious before raising rates even more. This was good news for EMs of economically stable countries with depressed currency valuations. It meant there was potential for their currency values to rise.

THE OVERALL ECONOMY, CURRENCY valuations, and interest rates are related and should be analyzed together. Looking at any one of these components independently may not give you the whole picture. It's also worth keeping an eye on the U.S.–China trade talks. Tense trade talks don't bode well for any country. But if they're subdued, there's a chance for lower tariffs, which could be encouraging for EMs. —Words by JAYANTHI GOPALAKRISHNAN

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

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THE UTILITY PLAYER

HOW BIG SHOULD MY OPTIONS TRADE BE?

WORDS BY
DOUG ASHBURN

PHOTOGRAPHS BY
DAN SAELINGER

BIG IDEA:

HOW DO YOU FIGURE OUT THE OPTIMAL SIZE OF YOUR OPTIONS TRADE? THERE'S NO SET RULE. INSTEAD OF RELYING ON WHAT YOUR GUT TELLS YOU, THINK IN TERMS OF UTILITY—THE MARGINAL BENEFIT OF ADDITIONAL ASSETS.

YOU'VE

got plenty of options strategies mapped. Lots of choices using calls, puts, vertical spreads, and more. But how much should you risk on a given trade, or be willing to risk at any point in time? Something to consider is the concept of utility of your trading capital.

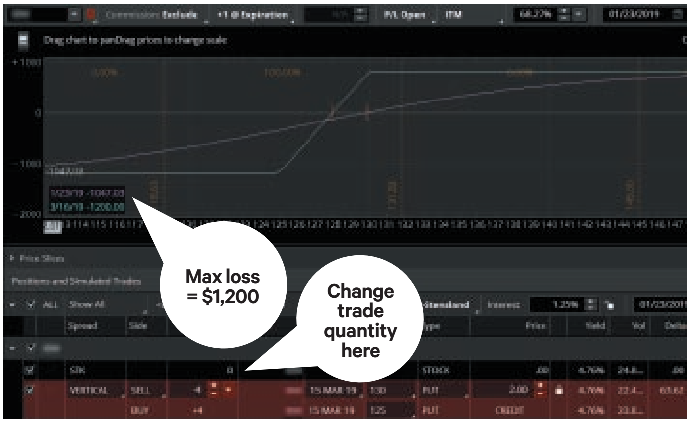

FIGURE 1: Analyze it. Price an option or spread from the Analyze tab on thinkorswim and note the dollars at risk. Change the trade quantity until you find your target level.
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

UTILITY

Economists measure "marginal utility" as the amount of benefit derived from the next dollar. For you trader, it boils down to one question: As the value of your account grows, should risk increase proportionately? For example, suppose your account were to suddenly double in size—say from $25,000 to $50,000. If your typical risk per trade is 5%, would your standard unit size go from $1,250 to $2,500? Should it be more or less than that?

The utility assessment isn't just for individual trades, but also for aggregate risk. How much of your trading capital do you deploy at a given time? Does that percentage change as the account size gets bigger and smaller? Like many things in life, it depends.

RIGHT-SIZING YOUR OPTIONS STRATEGY

For options trades, one guideline you could start with is the 5% rule. The idea is to limit your risk per trade to no more than 5% of your total portfolio. For a long option or options spread, it's pretty straightforward—the premium you pay divided by your account value. If you've got $25,000 in your trading account, the 5% rule says you should limit your risk on any one trade to $1,250. So, if you have your eye on an out-of-the-money (OTM) put worth $2.10 (times the multiplier of 100, or $210), you could buy six contracts for $1,260.

TRADER GLOSSARY
TURN TO PAGE 37

When selling vertical spreads or other defined-risk options strategies, calculating the risk is equally straightforward. It's the point of maximum loss, minus the amount you've collected in premium, plus transaction costs. If you wanted to sell a $5-wide put vertical for $2, your max risk would be $300 per spread. Selling four would keep you under the 5% threshold. To see this in action for any options strategy, fire up the **Analyze** tab on the thinkorswim® platform from TD Ameritrade (see Figure 1).

When selling naked (uncovered) options, it's a little trickier to gauge the risk because it's unlimited. But you can set a stop order at a level that represents your risk limit. So if you've sold five naked put options at $1.50 for a net premium of $750, and you're not interested in buying the underlying stock if assigned, you could set an alert below the strike price. If the stock falls below it, you would liquidate the short put position. Your max risk would be the loss per contract times five contracts, minus the $750 premium you collected.

Likewise, if you're willing to set stop orders (and be diligent about sticking to them), you could also consider increasing your contract size on any defined-risk strategy. But with any short position there's a risk that assignment can happen at any time. And a stop order won't guarantee an execution at or near the activation price. Once activated, stop orders compete with other incoming market orders.

After determining your risk-per-trade starting point, think about how much of your available capital should be deployed. And for that, we return to utility.

UTILITY REVISITED: TOTAL RISK/TOTAL RETURN

We all know Uncle Fred, who at the holiday dinner table freely mixes his entree and sides. Any inquiry is met with a logically sound, but equally unpalatable quip:

"It all goes to the same place, kid."

You could say the same thing about your portfolio. As a general rule, it makes sense to be more conservative with retirement accounts—401(k)s, IRAs, and other components of our retirement nest eggs—than with trading accounts. This conservative approach typically gets more pronounced as you approach retirement.

Yet, if you were to take a total-return approach to your assets, a conservative tendency in your retirement portfolio may lend itself toward a higher risk tolerance in your trading account.

Let's go back to the windfall example. Instead of an overnight doubling of your trading account from $25,000 to $50,000, suppose your retirement account size were to double, say, from $200,000 to $400,000. It's unlikely this would prompt you to double the risk in your nest egg. But you might consider upping the stakes in a smaller trading account.

When you consider total risk as a percentage of your total account value, the marginal utility of your trading account's dollars might be higher. So if your instinct is to put no more than 30% of your trading account at risk at any point, a rise in your total account value might raise your marginal utility for those trading dollars, prompting you to raise your deployment limit to 50%.

In the end, it all goes to the same place.

THREE STRATEGIES AS YOU RAISE UTILITY

Suppose you've assessed total utility and you're ready to up your total risk tolerance. You have six open strategies, each deploying 5% of trading assets (a total of 30%). You've decided to take that number up to 50%. Consider three approaches:

1—More potential trades. Instead of six strategies, each deploying 5% of available capital, add up to four more.

2—Higher volume per trade. If you're tied to your six go-to strategies, take the 5% threshold up to 8.33%. Instead of those six OTM puts at $2.10 a piece, you could buy up to 10 of them.

3—More risk per trade. Instead of selling four $5-wide put verticals at $2 apiece, for a total max risk of $1,200, widen the strikes and sell, say, four $8-wide spreads for $3 apiece, for a total max risk of $2,000.

BUT SHOULD YOU THEN TAKE ON MORE risk? Not always. You might want to scale into it, because utility works both ways. Changing market conditions and shifting account value naturally affect utility. Check in on it from time to time. And don't be ashamed to dial it back if volatility, a widening of bid/ask spreads, or a general market downturn push risk utility downward.

When it comes to utility players, the name of the game is versatility.

THE WHOLE ENCHILADA

Analyzing utility means looking at a trading account in terms of your whole portfolio. If you hold positions in more than one TD Ameritrade account, it's easy to get a holistic view. On the thinkorswim platform, at the top under **Account**, select **TOTAL (ALL ACCOUNTS)**.

Once there, you can "beta weight" them against a benchmark like the S&P 500 or the index that closely matches the securities in your portfolio. Remember, making a trade with $500 of risk doesn't necessarily add $500 of risk to your portfolio. The effect may be more or less, and a hedge trade will theoretically decrease total risk. Beta weighting lets you normalize all your positions to a single standard so you can assess risk parameters such as delta and volatility. (See Figure 2.) Overall, assessing the options in your trading account against your entire portfolio can help you determine the total utility of your trading dollars.

For more on beta-weighting, hop over to our sister publication, The Ticker Tape, by going to tickertape.tdameritrade.com and entering the term "beta weighting" in the search box at the top of any page.

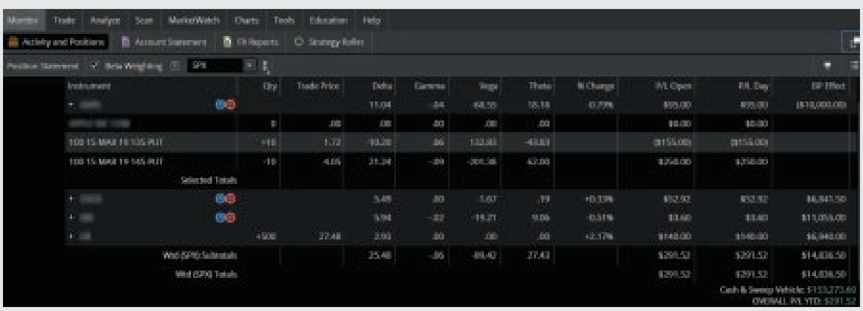

FIGURE 2: Normalize it. The Beta-Weighting tool on thinkorswim shows how all your positions perform against a standard measure like the S&P 500 (SPX). *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

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

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

The naked put strategy includes a high risk of purchasing the corresponding stock at the strike price when the market price of the stock will likely be lower. Naked options strategies involve the highest amount of risk and are only appropriate for traders with the highest risk tolerance.

PAIRS TRADING

PRO/ **TAKE AWAY:**
How to trade two similar stocks together when they're worlds apart—even if they're not trending.

THE THIRD DIMENSION OF TRADING

BIG IDEA:
YOU'D THINK TWO STOCKS IN THE SAME SECTOR WOULD MOVE TOGETHER, BUT THEY DON'T ALWAYS. HERE'S ONE WAY YOU COULD PLACE TRADES BASED ON THE RELATIVE PRICE MOVEMENT BETWEEN A PAIR.

WORDS BY
KEVIN LUND

PHOTOGRAPHS BY
DAN SAELINGER

WE

We do our best to get it right. And most of the time, we choose a trade based on where we think a stock will go—that is, up or down. But there's more to trading than just trends. There's also correlation. That may be geek-speak to some. But to a pairs trader, correlation is, well, just about everything.

For starters, what's a pairs trade? Imagine ordering a peanut butter and jelly sandwich for lunch (not swanky, I know). If there's too much peanut butter, your tongue sticks to the roof of your mouth. Too much jelly, and it's falling into your lap. Either way, you might send it back to get fixed so it's in line with expectations. At the end of it all, your new sandwich finds harmony and your mouth benefits. *Bon appétit*.

This is pairs trading. Two stocks in the same sector are generally expected to trade in harmony, that is, in a similar fashion. In other words, they're said to correlate. Think Coke and Pepsi, or Ford and GM. Depending on the news for each, day-to-day fluctuations might look a little different. But over time, they're likely going to trade in line with one another.

TRADER GLOSSARY
TURN TO PAGE 37

When one stock starts to trade a little out of whack and stray from the norm, the two stocks are said to be "uncorrelated," creating a wider price gap between them. Here's where opportunity might emerge—assuming the gap will eventually close, and the pair will find harmony again.

OPPOSITES CAN ATTRACT

In a pairs trade, you take opposite positions in two different, yet similar, securities. You might take a bullish position on one stock and a bearish position on the other. The overall objective is to make money on the relative price movements between the pair.

For example, if the stock you bought rises in value, while the stock you sold short stays the same or even drops in value, you may end up with a profit. Sound simple? It's critical to remember that for pairs trading to work best, it's about relative price moves, not actual stock prices.

Pairs trades can present potential opportunities because the relative price movements between two correlated stocks may suddenly diverge. Above all, you might expect the two stocks will eventually correlate again, causing the relative price gap to revert back to "normal."

SIZING THINGS UP

To capitalize on relative price moves between two stocks, a little math is needed so you're comparing apples to apples.

For instance, XYZ stock may be trading at $50. But ZYX could be trading at $100. Here, you simply divide the price of the larger stock by that of the smaller stock to approximate a ratio (2:1 in this example). Then, you'd trade two shares of the lower-priced stock for every share of the higher-priced stock. Because the percentage moves are similar, you would expect to see $100 worth of long stock in one company paired against $100 of short stock in the other company.

Here's another angle. Let's assume you want to invest $2,000 in the trade. Splitting the difference, you can commit $1,000 to each position. It probably won't be a perfect 2:1 ratio, so simply divide $1,000 by the stock price. If XYZ is trading at $40 and ZYX is at $60, you'd pair 25 shares of XYZ with 16 shares of ZYX.

BUYING AND SELLING

Let's assume that stocks XYZ and ZYX are in the same sector. For most of the past 60 days, you note they've traded in tandem. But for the past week, you see that ZYX is moving faster than XYZ. You may record this as a widening difference in prices on the chart. And it could be that XYZ typically trades slightly lower than ZYX. Assuming an eventual convergence, you may decide to take action and buy XYZ while selling ZYX in order to take advantage of what looks like a temporary divergence. You might profit from this trade if:

1—XYZ rises again more quickly than ZYX
2—ZYX falls faster than XYZ
3—XYZ rises and ZYX falls

In all three scenarios, the relative price gap between the two stocks closes, and you potentially profit from the trade. However, should the opposite of any of these scenarios occur, you could lose money instead.

ALTERNATIVE PAIRS

You've probably guessed that you're not limited to pairing stock positions. In fact, you can use a combination of ETFs, futures, and options as well.

Stocks and ETFs. Often, you don't have to look any further than a stock that becomes uncorrelated to its relative sector. Or you might buy or sell a stock and pair it with a long or short correlating sector ETF.

Stocks and options. If you can't short stock, you may choose to buy a put option instead. The position sizing and selection is a tad more complicated thanks to time decay and the leverage of options. But it can be a lower-cost way to mimic a short position without needing to pony up the margin.

Theoretically, you might buy one stock and pair it with a naked short call option on another stock in the same sector (instead of shorting the stock). For example, you may still want to be long XYZ stock. But rather than sell ZYX short, you may opt to sell a ZYX out-of-the-money call option.

Although your position might look like a covered call, you don't own the stock on which you've sold the call. So to trade this strategy, you must be approved to trade naked short call options, which naturally carry inherent risks and capital requirements.

Options and options. What if rather than buying one stock and selling another, you opted to buy a call option on one stock and a put on the other?

This may seem attractive because of the lower cost, lower options tiers, and lower requirements. Yet, there can be other risks. Although you may not have much directional (delta) risk, you are in fact long two options. That means you could have daily decay (theta), which can get expensive with two long options positions as the days pass. If you like this approach, you may want to consider deep in-the-money options. The higher deltas and lower time decay could mitigate your options risk.

So, where doesn't a pairs trade work well with options? You may want to avoid pairs trading on options spreads. The dynamics built into the profit curve of limited-risk strategies, such as vertical spreads and the like, can make profiting from a pairs trade difficult.

HOW TO PICK A PAIRS TRADE

To get started, choose two similar stocks in the same sector that exhibit comparable and consistent percentage moves over a specified time period (at least a year). You can do this on the thinkorswim® platform from TD Ameritrade.

EASY WAY

The quickest way to chart two stocks in a pair is to simply subtract the symbol of the short stock from the symbol of the long stock (e.g., enter "XYZ–ZYX"). The resulting chart will display the difference in prices across any period of time.

COOLER WAY

Alternatively, you could use the **Pairs Trader** tool under the **Trade** tab of thinkorswim.

1. Find the **Studies** button in the upper-right corner.
2. Select it, then hold the cursor over **Quick Study**. You'll see a menu with several selections.
3. On the bottom right of that menu, you'll see the words **Compare With**.
4. You'll then see a list of default index symbols such as DJX and SPX, as well as **Custom Symbol** near the top of that menu.
5. Under **Custom Symbol**, select the stock you'd like to compare to the main stock.
6. Your chart will reflect both symbols overlaid for your desired time period, making it easy to spot current and prior gaps where the stocks traded uncorrelated and the resulting price action.

AS WITH EVERYTHING IN TRADING, there's no one right path. No magic bullet that guarantees the precise outcome you desire. That said, pairs trading can be adaptive, fluid, and useful. Pairs trades are not without challenges, but they may still be worth considering. Bringing them into your vocabulary could be just what the sandwich chef had in mind.

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 options, see page 38, #1–2.

Options naked call: The risk of loss on an uncovered call options position is potentially unlimited since there is no limit to the price increase of the underlying security. Naked options strategies involve the highest amount of risk and are only appropriate for traders with the highest risk tolerance.

SEASONED / **TAKE AWAY:**
When you think vol might change, turn to vega to craft a strategy.

IT'S NOT THE NUMBER YOU'RE THINKING

BIG IDEA:
YOU ANTICIPATE A POP IN VOLATILITY BEFORE AN EARNINGS RELEASE. BUT MAYBE VOL IS OVERINFLATED AND IT DROPS. VEGA CAN HELP. CONSIDER USING IT TO COME UP WITH SOME STRATEGIES TO BETTER POSITION YOURSELF FOR THOSE UNEXPECTED VOL POPS AND CRUSHES.

WORDS BY
MARK AMBROSE

PHOTOGRAPHS BY
DAN SAELINGER

We all know that vega is Greek for volatility. Right? Well, no. In fact, not only is vega one of the most misunderstood options "greeks," it isn't even a Greek letter in the first place. And it's often confused with implied volatility (IV) or something else entirely. But in the end, grasping this concept doesn't have to be complicated.

Think of vega and volatility as siblings—related, but each doing its own thing. In short, vega determines how much the dollar value of an option changes for every one-percentage-point change in volatility (vol). It's like a translator. If vol rises, options values rise. If vol drops, options values drop. Vega can often show you by how much.

The options pricing models calculate vega. So you're likely to find vega hanging out with delta, gamma, and the other greeks. If trading vol is part of your playbook, the critical information to understand is that vega numbers decrease as expiration nears.

TRADER GLOSSARY
TURN TO PAGE 37

For instance, long options have long, or "positive," vega. So naturally, you want vol to increase. On the other hand, short options have short, or "negative," vega. So you'll want to see a drop in vol. When you combine multiple options positions, you also combine their vegas. So, long or short individual options, straddles, and strangles have the largest positive or negative vega.

In the final analysis, when you combine long and short options, you're combining positive and negative vegas, and your position is left with the net amount. So spreads like verticals, calendars, butterflies, and iron condors can have much less vega depending on your strike selection.

THE LONG OF IT

If you're buying premium ahead of a "numbers" release (earnings, corporate events, economic reports) and holding the position through the release, you might be trading the wrong greek.

Say you're going into earnings. And because you think your stock will get a nice bump, you buy a short-term option. Tread with caution—this could be triple jeopardy. If you don't get that pop, you could lose 100% of your premium. Ok, maybe not 100%. But losing almost all of it can sure feel like losing all of it. If you get a lukewarm pop, maybe you lose 90%. If you get the big pop you were looking for, you could still lose 50%.

What gives? You were likely right in your analysis, but still lost out. That's known as a vol "crush." Before a number comes out, vol can get pumped up based on an expectation the stock might move (see Figure 1). After the number comes out—whether the move happens or not—vol gets sucked out of the option, especially short-term options.

When you look for a big move on earnings, it's typically more of a gamma play, not vega. You can play vega by buying straddles, for example, or other high-vega strategies ahead of numbers, because long vega could profit if vol moves higher. That's what traders might typically think heading into the earnings release date. But you might consider getting out before the numbers are released to avoid a vol crush that could arrive with an earnings report.

One quick aside: Another benefit of trading straddles is that heading into the release, no one knows where the stock will go. So delta and stock-direction risks are neutralized at the start of the trade.

Now, keep in mind that although IV may be rising, which could drive a profit from long vega, negative theta may also be working against you. The straddle you have on might also acquire a delta from the gamma and stock movement combo, which could work for or against you.

THE SHORT OF IT

Strategies designed to profit from increasing vol include long-vega trades like long straddles. But you can also use short-vega strategies in order to play a predicted drop in inflated vol situations, such as a vol crush after an earnings release.

FIGURE 1: Volatility chart. This implied volatility chart (bottom pane) shows increasing IV 30 days before the earnings release. *Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.*

STOCK @$220	VEGA	CALL BID	CALL ASK	STRIKE	PUT BID	PUT ASK	VEGA
	0.15	21.80	22.70	200	2.30	2.45	0.15
	0.17	17.85	18.45	205	3.30	3.50	0.17
	0.19	13.85	14.70	210	4.50	4.60	0.19
	0.21	10.80	11.20	215	6.20	6.40	0.21
	0.22	7.85	8.10	220	8.00	8.30	0.22
	0.21	5.40	5.60	225	10.80	11.20	0.21
	0.19	3.50	3.70	230	13.65	14.40	0.19
	0.17	2.05	2.25	234	17.10	18.10	0.17
	0.15	1.25	1.40	240	21.10	22.40	0.15

TABLE 1: Different strikes, different vega. **It's a good idea to analyze vega before deciding which strategy to use.** *For illustrative purposes only.*

If long straddle vega works when vol is rising, shouldn't the negative vega from a short straddle work when vol drops? On one hand, it should. But a short straddle may bring undefined risk potential. For example, let's say earnings come out and vol crumbles as the stock moves big in either direction. You'll likely profit from your trade's short vega, but you could end up being short a 100-delta option, which could cost you. It's like you're trading synthetic stock at that point—not what you want if you're trading vega.

Some other spreads have defined risk, and they can still profit from a collapse in vol: short verticals, long butterflies, short iron condors, and short iron butterflies, to name a few. Unlike straddles (or single options), these spreads combine options with positive and negative vega, which you might think will cancel out the vega. But the net vega depends on your strike choices.

How's that? Keep in mind that different strikes have different amounts of vega. At-the-money (ATM) options have the highest. Vega tapers off toward zero as the option goes out of the money (OTM). This difference in vega levels means spreads with strikes that are further apart can have a higher net vega. Spreads with strikes closer together will have smaller net-vega values.

One strategy for playing a volatility collapse is with a short iron butterfly. But note the difference strike selection makes between two iron butterflies using the theoretical options prices in Table 1.

IF TRADING VOL IS PART OF YOUR PLAYBOOK, THE CRITICAL INFORMATION TO UNDERSTAND IS THAT VEGA NUMBERS DECREASE AS EXPIRATION NEARS.

The 215-220-225 short iron butterfly is short the 220 straddle for a credit of $15.85 ($7.85 credit + $8 credit) and long the 215-225 strangle for a debit of $12 ($6.40 debit + $5.60 debit). This nets a combined credit of $3.85 ($15.85 – $12), less transaction costs. Sounds like a big, juicy credit on a trade with a maximum value of $5. But the vega for this trade is only $0.02. You calculate this by taking the short $0.44 of vega for the straddle ($0.22 + $0.22) and netting it with the strangle vega of $0.42 ($0.21 + $0.21). (So, it's not really a vega trade.)

TOOL TIPS: HOW TO MONITOR PORTFOLIO AND POSITION VEGA

On your thinkorswim platform, go to the **Monitor** tab > **Activity** and **Positions** > and under **Position Statement**, add Vega to columns. You could choose to beta weight your portfolio.

Moving on, if you spread the strikes apart by selecting the 200-240 strangle as the long options for a net debit of $3.85 ($2.45 + $1.40 plus transaction costs), the credit for the iron butterfly jumps to $12 for a trade that can be worth $20. Yet, now the vega for the further OTM strangle drops to $0.30 ($0.15 + $0.15). This brings the vega for the 200-220-240 iron butterfly to $0.14 ($0.44 – $0.30).

By widening out the strikes, the vega exposure of the 200-220-240 iron butterfly is seven times the vega exposure of the 215-220-225 iron butterfly. Of course, these trades have different net risks, break-even points, and more. If this strategy doesn't fit the bill, possibly consider something like the 200-210-230-240 iron condor, or any combination thereof. But consider whether your strategy is designed to profit from a change in vol.

IN THE FINAL ANALYSIS, DON'T LET VEGA become an overlooked or confused greek in your trades. It's a great tool for understanding your exposure to vol. And when you think vol changes are on the horizon, vega can help you craft a strategy designed to tackle the situation.

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

ALL IN THE RATIO

WORDS BY **DOUG ASHBURN**

PHOTOGRAPHS BY DAN SAELINGER

PRO / **TAKE AWAY:** *Tools for intermarket analysis and to establish directional bias.*

FUNDAMENTAL ANALYSIS FOR FUTURES

BIG IDEA: SO YOU'VE DECIDED TO ADD FUTURES TO YOUR ARSENAL. FOR MOST ELEMENTS OF YOUR TRADING, FUTURES ARE ONLY SLIGHTLY DIFFERENT FROM THEIR EQUITY COUSINS. TECHNICAL ANALYSIS AND ALL THOSE INDICATORS YOU USE WORK THE SAME WAY. BUT WHAT IF YOU'RE INTO FOLLOWING THE FUNDAMENTALS?

Stock traders know price is a function of fundamental factors—some internal, some external. Whether you're a stock picker, scalper, swing trader, or anything in between, you likely keep an eye on some fundamental ratios—price to earnings, price to book, and cash flow, to name a few.

But what about futures? How do you track the fundamentals? There's no price-to-earnings ratio on a barrel of crude oil.

Turns out, futures traders use a whole host of fundamental ratios to assess everything from short-term arbitrage opportunities to changes in long-term macro trends. Whether it's crude, gold, bonds, or beans, you can watch a unique set of factors in each asset class. Even if you aren't actively trading the futures markets, some of these ratios are still worth a look as secondary indicators that can offer insight into stocks, stock sectors, and the market as a whole.

FIGURE 1: Track the crack. **From the Charts tab, enter the crack-spread formula to plot the chart.**
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

CRACKING THE CRUDE CODE

Energy traders keep a keen eye on the crack spread—the difference in price between crude oil and the products derived from crude, such as gasoline, heating oil, diesel, and other distillates. Futures markets have their own version of the crack spread. The exchanges have designed contracts and contract sizes to roughly correspond.

One popular crack-spread ratio is 3:2:1—a spread of three contracts of crude oil (/CL) against two contracts of gasoline (/RB) and one contract of heating oil (/HO). The NYMEX heating oil contract serves as a benchmark for heating oil and ultra-low sulphur diesel fuel. Both terms are used interchangeably. Whatever you call it, a crack-spread ratio of 3:2:1 (or 5:3:2, 1:1, or whichever you choose) serves its purpose. Want to price it on the thinkorswim® platform from TD Ameritrade? See Figure 1.

Sorry for the math, but here goes. A /CL contract is 1,000 barrels; /RB and /HO contracts are 42,000 gallons; and there are 42 gallons in a barrel. To get the spread price in dollars, multiply the price of /RB and /HO contracts by 42, then subtract the spot price for three barrels of /CL. So the formula for the crack per barrel is 0.33 (2*42*/RB+42*/HO–3*/CL). Enter that into the symbol box to see the crack-spread chart.

Why should you care? Because the crack-spread ratio is an approximation of refinery margins, it can act as a proxy for the energy sector's health and even the economy as a whole. Refiners are natural sellers of the crack spread—they buy crude oil and sell refined products—so a weakening crack spread can pressure oil refiners. For example, if there's a disruption in the oil supply, it might weaken the crack. So might a slowing of economic growth. Seasonal trends, such as winter heating and summer travel, might strengthen the crack. So could a strengthening U.S. dollar, because it tends to weigh down crude oil prices.

GET A LOAD OF BEANS 'N CORN

Like the proverbial beef-versus-chicken substitution curve from Econ 101, the soybean/corn ratio compares two somewhat interchangeable products. Think of it as the relative yield per acre of each crop, less the difference in production, marketing, and distribution costs. Corn yields about three times the number of bushels per acre, but it's more expensive to grow, haul, and process.

At the beginning of each growing season, farmers decide what to plant. In the nation's midsection, that typically means choosing between corn and soybeans. Once the crop is in the ground, there's no turning back. In some years, the two crops move in tandem. In other years, growing conditions and demand dynamics can favor one or the other.

How do you plot a futures ratio on the thinkorswim platform, considering futures symbols include the "/" signifier, which doubles as a division sign? There's a workaround: a lower study called PairRatio. To pull it up, under the **Charts** tab, go to **Studies** > **Add Study/Quick Study** > **Lower Studies (Other)** > **PairRatio**. In the chart box, type /ZS+/ZC. The ratio will appear in the lower section of the chart. To see just the ratio and not the sum of the two products in the upper half, go to Style > Settings and clear the Show price subgraph checkbox (see Figure 2).

The soybean/corn ratio compares bushels of soybean and corn values. Over the long term, the point of indifference has been about 2.3.

Why should you care? Tracking the soybean/corn ratio can offer clues about the state of the energy market, trade policy, and the macroeconomic environment generally. In addition to their function as animal feed, each can be converted into fuel—corn in the form of ethanol and soybeans in the form of biodiesel. Much like the crack spread, the soybean/corn ratio can also offer insight into the relative strength of energy refiners.

More recently, the ratio has been used as a proxy for trade policy, specifically regarding U.S.-China relations. China has historically been a big importer of soy products, and negotiations typically include soybeans as a bargaining chip. So the ebb and flow of trade policy can, and does, affect the soybean/corn ratio.

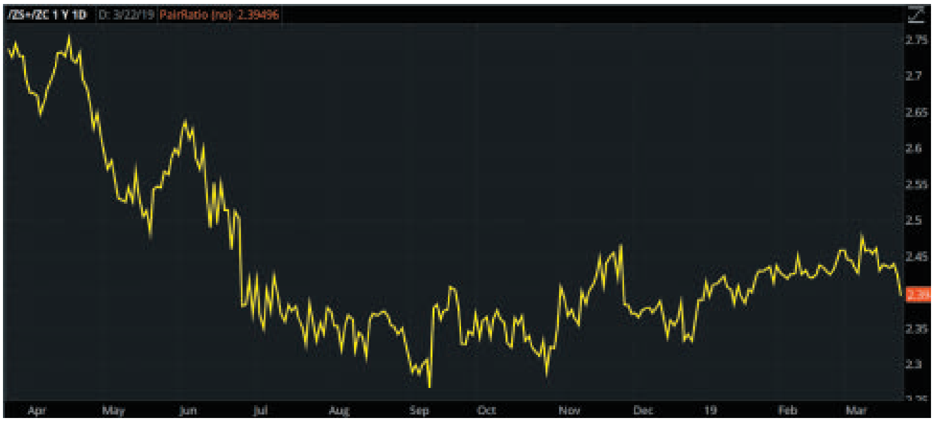

FIGURE 2: Plotting the corn/soybean spread. From the Charts tab, you can plot the futures ratio on thinkorswim by typing in the spread symbol. It's easiest to visualize the spread as a line chart.
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

YIELD CURVE RATIOS THAT MEASURE IT

If you follow traditional fundamentals, you're likely familiar with the yield curve—the graphical representation of interest rates from the overnight federal funds rate, the 30-year Treasury bond, and all points in between. There are a number of ways you can track and spread the various points on the curve. But to do it, you'll need to understand the ratios.

Treasury futures are quoted as a percentage of par value, rather than in basis points. But each contract can be roughly normalized to another in terms of the dollar value of a one-basis-point change ("DV01") by means of a predetermined hedge ratio. Some of the more common include:

SPREAD NAME	RATIO	SPREAD FORMULA
2 YR - 10 YR	2:1	2* /ZT /ZN
2 YR - 30 YR	4:1	4* /ZT /ZT
5 YR - 10 YR	3:2	3* /ZF2* /ZN
10 YR - 30 YR	2:1	2* /ZN /ZB

If you look at a chart of one of these formulas on the thinkorswim platform, a rising spread price indicates a steepening yield differential. If the price is decreasing, the yield spread is flattening.

Why should you care? A positive-sloping curve—shorter-dated maturities yielding less than longer-dated ones—is considered "normal" because longer maturities have more exposure to inflation and other risks. In normal conditions, traders are compensated for the higher risk by earning a higher interest rate on longer-dated Treasuries. But sometimes the curve flattens out or even flips to the negative. When it does, it can be a sign of economic trouble brewing. It indicates traders are shifting from stocks and other riskier investments to the relative safety of the U.S. bond market.

Plus, the banking system relies on a positive-sloping yield curve. The traditional model is to pay interest on shorter-term deposits like checking accounts and CDs, while collecting interest on mortgages, auto loans, and other long-term commitments. So a flat or inverted yield curve could put pressure on the Financials sector.

SCRATCHING THE SURFACE

These are a few of the many ways you can use futures ratios for fundamental analysis. If you want to explore other ratios, there are plenty more out there. In the metals world, for example, you could plot gold—historically seen as an inflation hedge and overall safe haven—versus an industrial metal like platinum or copper. Or gold versus crude oil. And in the agriculture world, the venerable hog/corn ratio indicates more than pork production profitability; a rising ratio has also been shown to correlate with a strong consumer demand. And because we're talking ratios, let's not forget the foreign exchange market, which is made up of currency pairs—essentially the ratio of one nation's currency to that of another's.

WHETHER YOU'RE TRACKING fundamentals as secondary indicators for the equity markets or trading futures products outright, ratios can become your friends. It's a big, interconnected world out there. With ratios, it's all relative.

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See Skew Without the Math

SEASONED ● **BIG IDEA:** WHERE DOES THE MARKET ANTICIPATE RISK? COMPARING EQUIDISTANT OUT-OF-THE-MONEY PUTS AND CALLS MAY GIVE YOU SOME INSIGHT.

Words by Mark Ambrose

CALLS Impl Vol	Delta	Bid X	Ask X	Exp	Strike	PUTS Bid X	Ask X	Impl Vol	Delta
13.77%	.74	5.41 P	5.46 P	15 MAR 19	276	1.17 W	1.18 P	14.01%	-.27
13.36%	.72	4.98 P	5.03 P	15 MAR 19	276.5	1.27 P	1.28 P	13.76%	-.29
12.96%	.70	4.57 P	4.61 P	15 MAR 19	277	1.39 W	1.40 P	13.57%	-.31
12.64%	.67	4.17 N	4.21 P	15 MAR 19	277.5	1.53 Z	1.54 P	13.43%	-.34
12.30%	.65	3.78 P	3.82 P	15 MAR 19	278	1.67 W	1.69 P	13.25%	-.36
11.95%	.62	3.40 I	3.44 P	15 MAR 19	278.5	1.83 W	1.85 E	13.08%	-.39
11.67%	.59	3.05 P	3.08 P	15 MAR 19	279	2.02 Z	2.04 P	13.00%	-.42
11.36%	.56	2.70 E	2.74 P	15 MAR 19	279.5	2.21 P	2.23 Z	12.84%	-.45
11.07%	.53	2.38 Z	2.41 Z	15 MAR 19	280	2.44 H	2.45 Q	12.79%	-.48
10.90%	.49	2.10 Q	2.12 Z	15 MAR 19	280.5	2.68 W	2.71 P	12.79%	-.51
10.64%	.45	1.82 P	1.83 Z	15 MAR 19	281	2.94 I	2.97 P	12.76%	-.54
10.16%	.37	1.32 Z	1.33 I	15 MAR 19	282	3.52 Z	3.55 P	12.77%	-.60
9.97%	.34	1.11 Q	1.12 W	15 MAR 19	282.5	3.84 P	3.89 P	12.87%	-.63
9.78%	.30	.92 Q	.93 I	15 MAR 19	283	4.21 N	4.26 N	13.11%	-.65
9.44%	.22	.61 P	.62 P	15 MAR 19	284	4.96 P	5.02 P	13.49%	-.70
9.29%	.16	.40 P	.41 P	15 MAR 19	285	5.83 P	5.89 P	14.33%	-.73

FIGURE 1: Tracking skew. On the Analyze tab on the thinkorswim® platform, type in the symbol for the underlying, then bring up the option chain. *For illustrative purposes only. Past performance of a security does not guarantee future results or success.*

• That was then, this is now. For option traders, now is a good thing, particularly when it comes to volatility (vol). Options volatility is typically divided into two time periods: before and after the 1987 crash. Before the crash, at-the-money (ATM) options in a given stock traded with the same implied volatility (IV) levels as those that were out of the money (OTM). This meant that OTM put options were priced far below fair value. But then the market crashed, and traders learned an expensive lesson: Never sell puts so cheaply ever again.

TRADER JARGON
TURN TO PAGE 37

But raising the vol of every option, especially those at or near the money, could lead to slow death by time decay. The solution was to give each options strike a different, and adequate, IV level. Thus, volatility skew was born.

TRACKING VOLATILITY SKEW VIA THE OPTION CHAIN

There are different ways to track skew. But one approach is to go to the option chain and compare the IV levels of the 30-delta put and 30-delta call. By subtracting call vol from put vol, you can see any changes in market maker sentiment over time. Note that you may not always find options displaying exactly 30 deltas, so just use the value closest to 30.

The option chain in Figure 1 shows a 30-delta call and a 29-delta put (close enough, although you could use 31). The difference in IV is 3.98% in favor of the puts, which tells us the market is more concerned about downside moves rather than upside moves.

Traders often track these values to find sudden changes in the skew level. If the difference between the call vol and put vol grows more negative, the market may be anticipating a downside correction. If the difference is positive, the market may be expecting a rally of sorts.

VOLATILITY SKEW: A VISUAL APPROACH

Within each stock, vol is different at every strike and expiration. To see this difference, select an expiration and explore the range of vol levels across all strikes. To find volatility skew for a given stock, fire up the thinkorswim® platform from TD Ameritrade, then:

1—Go to the Trade tab.
2—At the bottom, below the option chain, select Product Depth.
3—Under the Show menu, select the type of options you want to see (All, Calls, Puts, OTM, Average). Typically, call and put volatilities that share the same strike are similar, so if you select the OTM curve, it gives a more robust picture of volatility skew. You can select one expiration, all of them, or anything in between.
4—Select all strikes or a smaller range of strikes.

You'll see a graph of the volatility curve, which if balanced, is often referred to as a "smile." Sometimes, you may notice the slope for OTM puts may be steeper than the slope of OTM calls (a "smirk"). This implies the marketplace may be fearful of a correction. If the upside slope is significantly steeper than the downside slope, it may signal that traders are bracing for a possible sudden upside move.

Volatility skew is no crystal ball, but it's a tool that can help you analyze what the market might be thinking.

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

Channeling Your Trades

SEASONED ● **BIG IDEA:** TRACKING FUTURES TRENDS IS HARD. BUT USING STANDARD DEVIATION CHANNELS CAN SIMPLIFY THINGS WITH A BIRD'S-EYE VIEW.

Words by Jayanthi Gopalakrishnan

FIGURE 1: Overlaying different standard deviation channels. Understanding how price moves within different standard deviation channels around the mean can help you identify volatility and possibly reversals.
Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

• For many, the thought of trading futures may suggest aggressive trading—getting in and out of positions several times a day. In reality, it's possible to be a more deliberate futures trader. Leave the aggressive trading to those who are extremely experienced.

Futures contracts are known for volatile moves—whether it's a reaction to a news release, seasonal tendencies, or a certain time during the trading day such as the open or close. Should you chase each volatile trade?

Not necessarily. You can be patient and wait for volatility before you open a position. And you don't have to close that position the same day you open it. Although no one approach or trading system can guarantee anything in trading, there are some indicators you can apply that might help you identify when prices could be volatile.

STANDARD DEVIATION CHANNELS

One such indicator is standard deviation channels. They're three straight lines on your chart. The middle line marks the linear regression, while the upper and lower lines are standard deviations above and below the middle line. The nice thing is, you don't need to do all those calculations; you can place these channels on your chart (see Figure 1). Just fire up your thinkorswim® platform from TD Ameritrade and bring up the **Charts** tab.

1—Enter the symbol of the futures contract you want to analyze.

2—Add the study by selecting Standard Dev Channel. This displays the standard deviation channels with their default settings, which may or may not be ideal. You can add more than one standard deviation channel to your chart and modify the settings so they're more meaningful.

3—Select Edit studies (beaker icon). From the settings menu, select your inputs: the price you want to use, the number of standard deviations, and how many price bars you want to display. You can also change the appearance of your plot lines.

Figure 1 shows channels for one (blue) and two (red) standard deviations plotted around the linear regression line (yellow). These lines or channels measure volatility, or how far price is away from its mean.

We won't get into the specifics of calculating standard deviations. But it's helpful to know that:

- One standard deviation encloses roughly 68% of price movement.
- Two standard deviations enclose roughly 95% of price movement.
- Three standard deviations enclose roughly 99% of price movement.

Generally speaking, when prices trade above or below the channels for one, two, or three standard deviations, it could signal a potential reversal.

On the daily price chart in Figure 1, you can see that /ES generally moves within the one-standard-deviation bands for the most part. But there are times when it moves above and below those bands, and when that happens, price tends to revert back.

That's not to say that you should trade whenever price moves outside the standard deviation range. But it can be helpful to be aware of it.

The further price moves away from the mean, the more likely it is to be volatile. If you were to pull up an intraday chart of /ES, you'd likely see price moving outside of both one- and two-standard-deviation channels several times during the trading day. Try it out on other contracts, such as crude oil (/CL) and gold (/GC). Knowing how price moves between the standard deviation channels is sure to lift your market awareness up a notch.

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

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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 spread — 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 stock will remain at or settle at a price near the short strike, in which case, as time passes, and/or volatility drops, the combined short options premium exhibits more decay than the combined long options premium, resulting in a profit when the spread can be sold for more than its original debit (which is its maximum loss).

Calendar spread — 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 options contract’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 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.

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.

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.

Straddles — A market-neutral, defined-risk position, composed of an equal number of long calls and puts of the same strike price. The strategy assumes the market will break out one way or another, in which case, a profit occurs when one side of the trade gains more than the other side loses. Breakeven points are calculated by adding and subtracting the total debit to and from the strike price of the options.

Strangle — A trading position involving puts and calls on a one-to-one basis in which the puts and calls have the same expiration and underlying asset, but different strike prices. When both options are owned, it’s a long strangle. When both options are written, it’s a short strangle.

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, its 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.

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.

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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

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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 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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TDA 2012 07/19