

thinkMoney®/43

Random musings for traders at TD Ameritrade—SPRING 2019

WHEN A HEDGE IS NOT JUST A HEDGE

OPTIONS
STRATEGIES
FOR RISKY
SCENARIOS

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COVER STORY

When a Hedge Is Not Just a Hedge

You can't predict a bear or bull market, but you can be prepared with some hedging strategies. Here are three risk scenarios that could play out, and depending on where volatility is, there's a strategy that could work for you.

If you're designing time-sensitive options strategies, remember that theta increases as the options approach expiration.

Theta: Time Waits for No Trader
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Seeing the Shoe Drop Before It Does

What could spook the market beyond the bigger headlines, and how can you be ready for such a paradigm shift? Here are some economic indicators that might tell a better story.

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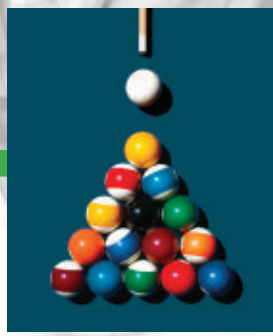
Theta: Time Waits for No Trader

As time passes, the value of an option decays. Theta measures this time decay. That's why it's dynamic, just like an option's price. What impacts theta's value, and how can you incorporate that into your options strategies? Let's find out.

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Alt-Vol: The Other Indicators You Could Be Watching

Stock traders rely on several volatility studies, and option traders can use them too. Three popular ones: Average True Range, Bollinger Bands, and the Chaikin volatility indicator. Use these indicators to identify high-vol stocks to potentially trade.



MISCELLANEOUS

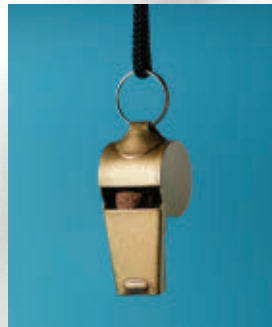
11 In the Money

Vol Whisperer What's the volatility of volatility (VIX), and why does it matter? It can be helpful, especially if you trade VIX options and need a better understanding of volatility.

Think Tank Make your trading day matter. Use heat maps, vol calculations, and chart-sharing tools.

Associate Spotlight Alex Coffey is quite the intellectual. He has an affinity toward analyzing the markets from a statistical viewpoint and a love for philosophy. That combination makes him a thoughtful trader.

Coach's Corner Learn where to get your learnin', plus how to convert fractions like a futures trader.



REGULAR COLUMNS

6 **A Quick Howdy**

9 **Love Notes**

34 **Capiche**

An index's settlement can turn a winning position into a losing one. Nobody wants such surprises, which is why you may want to close your index positions before expiration.

36 **Trader Jargon**

38 **The Back Page**

Did you know that people come up with new ideas for an index every day? Here are some that never quite made it into the trading world.

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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What's Your Plan B?

• AS A TRADER, you already know that to make money in the markets you have to take a risk. What you may not know is that your risk management doesn't have to be relegated to only stop losses or vertical spreads.

Maybe you got lucky and the markets did well, as did your overall P&L. Plan A is working out beautifully. But what if the market or your stocks tank? It's a simple question to answer in theory, but tough to solve when your screens are red and your positions are bleeding with every tick down. That gap between how you think and how you act isn't necessarily your fault, or something many of us can solve. It might just come down to how you set things up going into a trade.

Fortunately, there are a few strategies you can use to hedge your stock positions at the onset of a trade. Depending on the volatility backdrop and how much of a hedge you're looking for, there

are options you can wrap around your stocks that can not only reduce your risk but could even set you up to manage your trades smarter. But they can also impact your upside potential. We break



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it all down in "When a Hedge Is Not Just a Hedge" on page 16.

When it comes to managing trades more successfully, there are a couple

other key components of options trading to help you see where you're going. For example, options greeks describe the variables that can impact how an option's price may respond to market conditions.

One such greek is theta. Option contracts have a limited lifespan, and that means as time passes, the option's value decays. "Theta: Time Waits for No Trader" on page 24 kicks off a multi-part series on options greeks by diving into theta: what it is, how it

works, and some of its lesser-known nuances.

The markets are dynamic and always changing, and you'll never stop learning from them. So it's always good to add a few key strategies and concepts to your trader toolbox that can help you make smarter decisions in any market.

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



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Best in Show ... (To Our Inbox)

Another \$5 up and I can take our mutts for their shots. Now I know why my dog tries to spill my coffee on my laptop every morning. —Chris

I've learned not to trust my models. It's better that way since facts are backward looking. Alternative facts, on the other hand, have no shelf life. —Taylor

Driving, like trading, requires you to first see the road. But sometimes when driving or trading, there are chicken tenders on the side of the road. You'll need the discipline to not eat inferior chicken. —Paul

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Chat Room Pearls...

I put a bunch of hair gel in. Now I look like Gordon Gekko.
—ADAM

Plenty of time left on positions. So, stay calm, and trade on.
—JOHN

CHAT SWIMMER #1
We're supposed to get 82 inches of rain tonight.

CHAT SWIMMER #2
That seems like a lot.

CHAT SWIMMER #1
I'm dispatching the ark now.

The market is hungover. Give it about an hour.
—DAVE

Edward Scissorhands is running the show today.
—DAN

CHAT SWIMMER #1
I'm pretty sure my phone secretly listens to me.
CHAT SWIMMER #2
You're lucky. Mine sometimes talks back to me.

You don't go from wild turkey to cold turkey right away.
—RALPH

I know how I can enjoy my Monitor screen page ... turn off the P&L!
—WALT

No factory orders today. I didn't order a factory; I've got budget issues.
—TOM

Vol, you need to tell us when you make moves. Remember, sharing is caring.
—LAUREL

Yay! I have electricity restored and can now see what has been going on in the world.
—CAROLYN

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Should I stay or should I go? If I buy, there'll be trouble and if I sell, it'll double.
—MARK



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IN THE MONEY



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What's the VVIX and Why Does It Matter?

BIG IDEA: YOU MAY NOT HAVE THOUGHT A LOT ABOUT THE VOLATILITY OF VOLATILITY. TURNS OUT, IT COULD BE A HELPFUL TOOL TO ADD TO YOUR TOOLBOX.

• MARKETS ARE DEMANDING AND EVERY tool helps. The good news for options traders? Smart folks keep inventing them. Traders have traditionally relied on the SPX. Then along came “the fear gauge,” or the [Cboe Volatility Index \(VIX\)](#), which gives a theoretical estimate of SPX’s future volatility, based on SPX options. To help options traders take an even deeper analytic dive, in 2012 the Cboe introduced VVIX, which in simple lingo is “the VIX of the VIX.”

Just as VIX is calculated from SPX options, VVIX is calculated from VIX options. The formula is basically the same. It’s a complex weighting of the out-of-the-money (OTM) options to create a metric for the market’s estimation of what the index’s volatility might be (SPX, in the case of VIX, and VIX, in the case of VVIX) in the following 30 days.

VVIX, then, can indicate when VIX isn’t very volatile, and so isn’t foreseeing much volatility in SPX. This can happen when

VIX is relatively low—under or around 15, for example.

Alternatively, a high VVIX suggests VIX might be more volatile in the future, which in turn can indicate a market belief that SPX might also be more volatile.

TRADER GLOSSARY
TURN TO
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Over the past year, VVIX has ranged from approximately 82 to 203, hovering between about 90 and 120 most of the time. There are a couple things to note. The first is that spikes in VVIX occurred around the times there were spikes in VIX. And when the VIX is relatively low and not moving much, it’s the same for VVIX. The second is that just as VIX is more volatile than the SPX it’s based on, VVIX can be more volatile than the VIX it’s based on.



So, potential opportunities suggested by a high VVIX, for instance, might be fleeting if VVIX drops back down.

What can VVIX do for a trader?

You can't trade VVIX directly because it's just an index with no options, or even a futures contract. But just as VIX can give an indication about how to create strategies in SPX options, VVIX can indicate how to create strategies in VIX options. A low VVIX indicates that VIX options may be relatively inexpensive. If the low VVIX is accompanied by a relatively low VIX, and you're bullish on VIX, a long call or a long call vertical might be bullish strategies to consider. With low VVIX, the premiums of VIX options are relatively low, too, so debit strategies might be more attractive.

If VVIX is high, VIX premiums can also be relatively high. If you're bullish on VIX in that scenario, a short put or short put vertical might be bullish strategies to consider because of the higher credits possible with the higher volatility in VIX options.

You might try adding VVIX to your watch list on the thinkorswim® trading platform by TD Ameritrade. If you put it next to VIX and SPX, you can see how the three of them move relative to each other in live trading. And now that you understand what VVIX is, it might become a valuable part of your trade-identification toolbox.

—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.

THINK TANK • EASY

What's Hot and What's Cool?

BIG IDEA: AT ANY GIVEN TIME, DO YOU KNOW WHICH STOCKS ARE MOVING, WHERE VOL IS, OR WHEN AN IDEAL SETUP IS FORMING? THESE TOOLS MAY HELP.

TO FAANG OR NOT TO FAANG: THE HEAT MAP

What's driving an index, and what could potentially drive your next trade? Stocks, of course! But because the stocks of some companies make up much more of a given index than others, they can take the driver's seat and massively influence their corresponding index's value. The thinkorswim® Heat Map shows you just how big these stocks are relative to the index's value, which could give you some ideas for the next generation of a "FAANG" gang.

- 1- From the **MarketWatch** tab, select **Visualize**
- 2- From the dropdown, select **Heat Map**
- 3- Select the arrow to the left of the three categories listed ("indices, public, personal")
- 4- Note all your choices (see Figure 1)

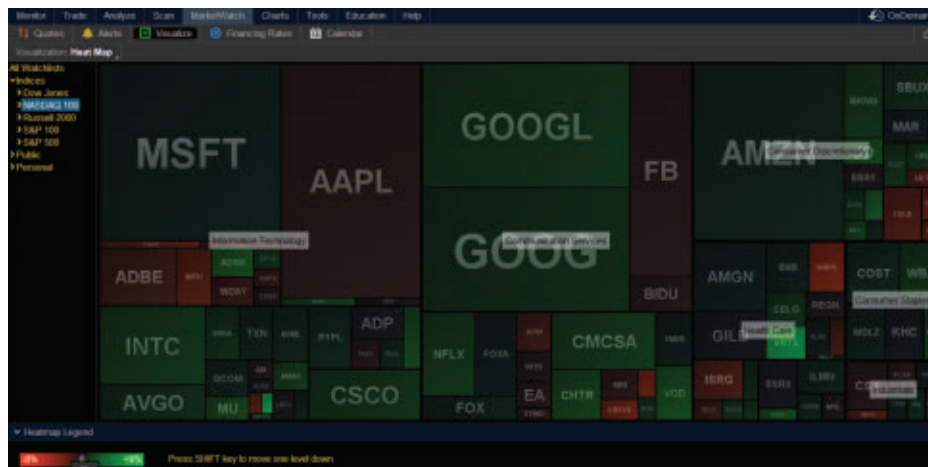


FIGURE 1: Heat map. The bigger the company, the bigger the square. Green means the stock price is up, and red means it's down. The more intense the color, the larger the price move. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only. Specific securities appearing in educational examples are not a recommendation to buy, sell, or hold any security.

Once you have an idea of which stocks are influencing an index, you can compare how the stock is moving relative to its index. One way is to use the comparison feature in the Charts tab of thinkorswim. Overlaying the index chart on a stock chart can help you identify if the stock is underperforming or outperforming an index.

This information can play a role in your decision to trade an index or stock that drives an index. Consider this a starting step, and perhaps add other factors, such as implied volatilities, that might help drive your decisions.

IT'S ALL IN THE VOL:

CHOOSE YOUR DEFAULT VOLATILITY

There's no such thing as certainty in the options world. Implied volatilities (IVs) are independent from one options cycle to another. Changing IVs, different price models (e.g., Black-Scholes), and time decay can change the P&L of your trades. So it's a good idea to spend time analyzing potential trades and figuring out how different volatility calculations affect them.

On the thinkorswim® platform from TD Ameritrade you have a few choices for volatility calculation modes. The platform defaults to "individual implied volatility," but there are two other modes: "volatility smile approximation" and "fixed volatility per expiration date."

From the Setup menu in the top right of thinkorswim (gear icon), select "Application Settings..." and you'll see a screen that looks like the one in Figure 2.

- 1- Select the **General** tab
- 2- Choose **Calculations** from the menu
- 3- From there, you can select the **Volatility calculation mode** you wish to apply to your trading strategy analysis, particularly to see how the greeks (**delta**, **gamma**, **theta**, **vega**) change

Individual implied volatility uses a distinct implied volatility for each strike.

Volatility smile approximation accounts for skew in the out-of-the-money strikes, which tend to have inflated IVs.

Fixed volatility per expiration date shows

theoretical prices if all options of a series were at the same vol level as the **at-the-money** options.

In the end, 99% of what you need is in the default volatility settings. But if you like to geek out with this stuff, and you feel your volatility settings are leading you astray, it might be worth playing around with this feature. One model isn't necessarily more accurate than another. These are theoretical settings that can be helpful when analyzing potential positions.

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You can step away from your desk, but you don't have to step away from your trading.

Anytime, anywhere, fire up your Mobile Trader app and look to see what's happening in the markets. As you casually glance through the charts of the symbols on your watch list, you may come across one that has the perfect setup you've been waiting for. You've just got to share it!

To share a chart (see Figure 3):

- 1- Select **Quotes** from the bottom menu
- 2- Select a stock symbol from your watch list
- 3- Select **Chart** from the upper menu
- 4- Select **Share**, then follow the steps you'd normally take to email or share on social media from your phone

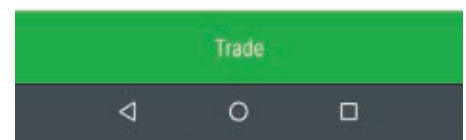


FIGURE 3: Chart sharing on Mobile Trader.

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

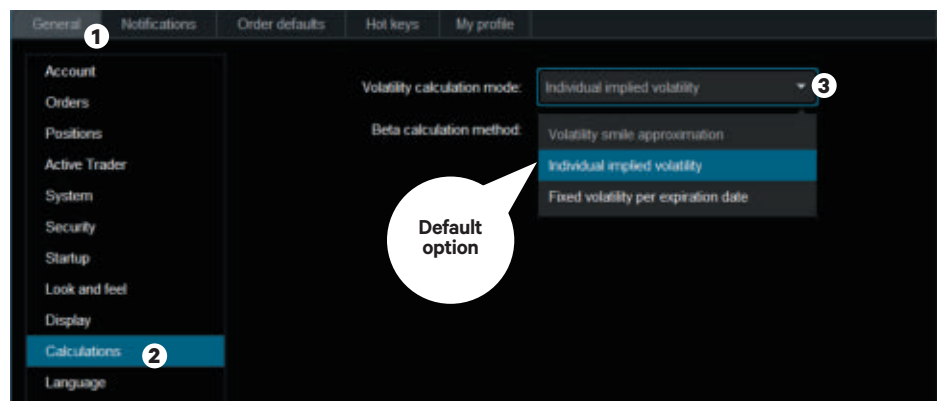


FIGURE 2: Which vol calculation mode should you use? On your thinkorswim platform, from Application Settings, you can opt to use one of three vol calculation modes. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

ASSOCIATE SPOTLIGHT

It's All About Numbers and Symbols

ALEX COFFEY, SENIOR SPECIALIST, CLIENT & MARKET STRUCTURE INSIGHTS AT TD AMERITRADE, IS IN HIS ELEMENT WHEN HE'S ANALYZING MARKET STRUCTURE AND EXPLAINING PROBABILITY TO CLIENTS. FOR HIM, INTERACTING WITH OPTION TRADERS IS A NATURAL FIT.

Illustration by Joe Morse

• WITH A DOUBLE MAJOR in finance and accounting, and a double minor in math and economics, it's no surprise that Alex gravitated toward a career in the financial industry. From a statistical and quantitative perspective, he's had an interest in the markets since he was a teenager. This led to his starting out as a Financial Services Representative in the Client Services department at TD Ameritrade.



Like Emperor Aurelius, I don't like to get hung up on little things.

1 You have quite the title, Alex. Unpack it for us. It's tough to get it all in on a business card! I learned as much as I could about the products offered by TD Ameritrade. Then I moved over to the thinkorswim® Support Trade Desk. I started with the Omaha team, then transferred to the Chicago team. We started a new support team designed to service the highest level of TD Ameritrade clients. We're talking big traders

who take higher risks. Our conversations were more in depth, which I loved. I then joined the Active Trader group.

I focus on research—market structure and trading. I help out JJ Kinahan and other colleagues as needed. I research anything from network hits, to media appearances, to competitive intelligence. I keep my eyes on macro and company-specific items that are moving the markets. I also monitor market structure, regulations, and general day-to-day fluctuations.

2 What exactly is market structure? It's how the market is structured behind the scenes, and is often described as the market's "plumbing." So, as an example, I monitor the decisions, rules, changes, and so on that the exchanges and regulators are making, or talking about making.

3 You must know the markets inside and out. What are three trading rules you live by? On the show *Billions*, one of the characters said, "An average trader makes a trade and

feels good; a great trader makes a trade and feels nothing." I feel this illustrates the point that to be good at trading, you have to be able to separate your emotions from your trading plan and the mechanics of what you're doing. There's a delicate balance between getting a return and taking risks. And to maintain that balance, traders have to determine the level of their risk tolerance.

Second, be familiar with what you're trading. If you're trading options and futures, you need to understand how those products work. Only then will you understand the risks you're carrying.

Finally, diversify your risk. Keep your eyes on everything, don't over-leverage, and don't put too many eggs in any one basket.

4 You like to read. What are some of your favorite books? One book I like is *Meditations* by Marcus Aurelius, a Roman emperor and Stoic philosopher. It's a collection of notes Aurelius wrote to himself for guidance and self-improvement.



COACH'S CORNER

Talkin' About Education

BIG IDEA: THE COACH TALKS TO US ABOUT KNOWING THE HOW, WHEN, WHERE, AND WHY OF THE MARKET. PLUS, YOU GET A NUGGET ON TRADING OPTIONS ON FUTURES.

Photograph by Juntitos

• **Hey Coach! There seems to be a big focus on educational offerings—courses, webcasts, YouTube videos, live events. Are these available to all traders?**

We have about 44 webcasts every week and they're accessible to anybody with a TD Ameritrade account. Soon they'll be accessible to anybody everywhere, because we are putting these webcasts on YouTube. As we move to YouTube we're going to have two channels—one for active traders and another for long-term investors. For the active trader channel there'll be topics from technical analysis to options, futures, and stock trading. On the long-term channel, the topics might include building a portfolio, managing

that portfolio, setting goals, ETFs, growth, value, income investing, and so on.

The nice thing about the rollout to YouTube is that it makes everything accessible and shareable. If you learn something from one of our videos, you can share it with others and encourage them to check out the same video. We keep the content fresh and current. Traders are also interested in the news, economy, and earnings. We want to bring that information to all traders.

But Coach, there are so many courses, tutorials, and videos to choose from. How do I know where to start?

It's true there are plenty of courses for

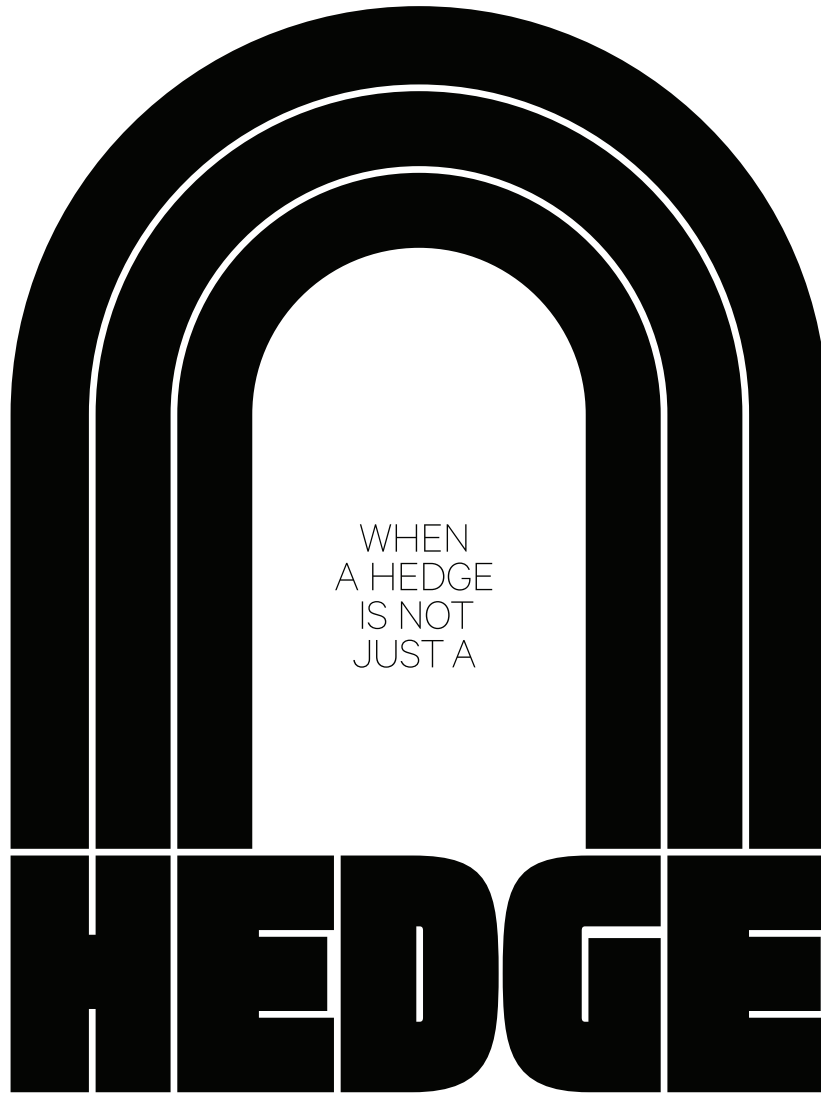
stock traders and investors, option traders, and self-directed portfolio managers. It can all be a little hairy to navigate, so to streamline your efforts, we have what we call personalized content recommendations. So, if you log in to your TD Ameritrade account and go to the **Education** tab, and then to the **Overview** page, you'll see a bunch of questions to help narrow down what you're trying to accomplish with your trading and investing. As you start answering those questions, the system will automatically generate recommendations for the educational tools that could help you.

You can also access all this information from the **Education** tab on the thinkorswim® platform from TD Ameritrade. In addition to our online offerings, we hold live workshops around the country. The workshops are free and geared toward education.

So, Coach! I have a specific question about trading futures. Say I want to sell a strangle in a /ZB future in 64ths and need to figure out the breakeven price in 32nds?

Bond (/ZB) and note (/ZN) futures prices are quoted in 1/32 of a point, but their options are quoted in 1/64 of a point. To figure out the breakeven points of a strangle in bond futures options, you need to look at the trade in 32nds in order to see how far /ZB can move before the trade starts to make or lose money. If you sell a /ZB put and call each for 1'40, that's one point and 40 64ths each, for a total credit of two points and 80 64ths for the strangle. You can turn 80 64ths into one point and 16 64ths (80 - 64) to see that the total credit is three points and 16 64ths. Convert the number of 64ths to 32nds by dividing them by two, so 16 64ths is equal to eight 32nds. The total credit for the short strangle is three points and eight 32nds. To calculate the breakeven points at expiration, subtract three and eight 32nds from the put strike and add three and eight 32nds to the call strike.

● SEASONED/ **TAKE AWAY:** *Three ways to hedge a stock position in any market.*



BIG IDEA: WHEN THE MARKETS ARE IN FLUX, YOU MAY FEEL THE NEED TO HEDGE SOME INDIVIDUAL POSITIONS, EVEN WHEN YOU'RE "DIVERSIFIED." BUT HOW? HERE ARE THREE RISK SCENARIOS THAT COULD PLAY OUT, AND DEPENDING ON WHERE VOLATILITY IS, THERE'S AN OPTIMAL STRATEGY FOR YOU.

WORDS BY **MARK AMBROSE**
PHOTOGRAPHS BY DAN SAELINGER



You've gotta love a diversified portfolio of stocks that work together with the goal of reducing risk and increasing returns. No one stock is more important than another, although you may have your favorites, like those that have outpaced the rest of the market. But maybe a sector seems ripe for a downturn, or perhaps your stock is in a sector that got hit with bad news. And you're not ready to sell just yet.

An individual stock can often be more volatile than an entire portfolio. A sector that falls 10% or 20% in a correction can mean twice that for individual stocks. And because you can't predict a bear market, you ought to be prepared.

Let's look at three common but frequently overlooked risk scenarios that could dramatically affect individual stocks. Once you understand these risks and when they might occur, you can create a plan to hedge those holdings.

THREE RISK SCENARIOS

Stocks can be at risk of a pullback for many reasons. Here are three broad scenarios where your individual stocks may carry risk that might not affect your portfolio as a whole.

Stock risk—For a stock that's outperforming the overall market, there's always the risk of the stock coming back down to earth, particularly if the stock market as a whole is falling. For example, if you own any of the five "FAANG" stocks, their high prices may mean they could have further to fall. If a downturn in one stock can spoil your year, your stock risk may be worth hedging.

Sector risk—Your stock can be affected by news that moves the sector as a whole, such as lower industry demand for products of stocks within the sector. If your stock's sector has been outperforming the rest of the market, or if your stock

is outpacing other stocks in the sector, it could be affected significantly by negative news that hits the sector. Even if the bad

news doesn't apply to your stock, there could be guilt by association.

Global risk—Stocks can feel the heat when they're in a sector that's sensitive to global events. For example, tariffs, central bank activities, and trade wars can affect companies in base metal and banking sectors. If your stock's sector could be affected by volatility, hedging that stock might be smart.

In each of these scenarios, if you don't want to sell the stock, it might make sense to simply hedge it. Depending on the volatility of the market and the hedging strategy you choose, you can reduce the risks of holding on to the stock during a downturn, while maintaining some or all of the upside in case the stock should move higher.

VOL-BASED HEDGING STRATEGIES

There isn't necessarily a good, better, or best hedge. Some leave room for greater upside potential, but compromise more downside protection, or vice versa. Among other factors, it's important to look at a stock's volatility and use parameters to choose the hedge that matches your outlook for the stock's risk.

Let's look at three types of hedges you could consider overlaying on an individual stock position: **long put**, **collar**, and **covered call**. Each has its pros and cons, and each has its own use as a hedge.

LONG PUT

TRADE—BUY PUT

PRO: Preserves most of the upside potential of the long stock and can give you nearly full protection in a crash.

CON: Costs money and increases the breakeven point of the long stock position.

VOL SCENARIO: Low volatility is preferred, as the cost of the long put is likely lower.

If you're willing to pay for downside protection, while leaving the upside potential unlimited, the long put option may be your style. To place a long put hedge, you simply buy a put with the same strike as the stock price (at-the-money, ATM) or below the stock price (out-of-the-money, OTM). See Figure 1.

Say you own a stock at \$175. A \$170 put might cost you \$5. As long as the stock remains above the strike price of \$170 at expiration, then the long put's going to expire worthless, and you're out the \$5, or \$500 per option.* Anything below \$170 before the put expires and you're fully protected, dollar for dollar, even if the stock drops to zero. All you're out is the \$5 you spent on the put.

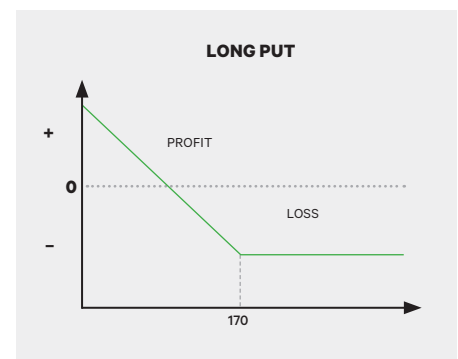


FIGURE 1: Long put. Risk graph showing a long 170 put option. For illustrative purposes only.

And what if your stock is falling? Your losses are capped. The max loss for this kind of hedge is the difference between the stock's price and the put's strike price, which is \$5 (\$175 - \$170), plus the cost of the put (\$5), for a max risk of \$10, plus transaction costs.

COLLAR

TRADE—

BUY STOCK + BUY PUT + SELL CALL

PRO: A very low-cost hedge with a better breakeven than a put hedge.

CON: The upside potential of your long stock is limited to the strike price of your long call. The protection of your stock position generally kicks in only at the strike price of the long put.

VOL SCENARIO: Collar hedges can be placed in any volatility backdrop because at any given time the volatility premium in the short call will typically offset the volatility premium in the long put.

If you think you spot a correction coming, but you can't stand the idea of paying for a long put hedge, the collar can get you as close to a no-cost hedge as it gets. This hedge combines a long OTM put with a short OTM call wrapped around your stock—the “collar.” (See Figure 2.) The beauty of this strategy is that the call premium you collect helps pay for some or all of the put hedge.

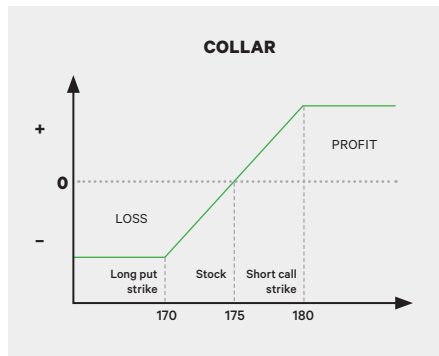


FIGURE 2: Collar. Risk graph of a long stock collared with a 170 put and a short 180 call.

For illustrative purposes only.

Using the same prices as in earlier examples, the \$5 premium collected from the sale of the 180 call offsets the \$5 premium of the 170 put. If the stock drops below \$170, your loss is limited to \$5. Likewise, if the stock moves above \$180, your gain is limited to \$5.

COVERED CALL

TRADE—BUY STOCK + SELL CALL

PRO: Credit from the short call reduces the breakeven of your stock position.

CON: The upside potential of the long stock is limited to the strike price of the call. Hedging capacity is limited in a selloff.

VOL SCENARIO: Medium volatility is preferred for higher credit premiums to sell the short call. The catch is that higher volatility tends to minimize the protection of the covered call.

This is a one-option strategy—you sell one call for every 100 shares of stock you want to hedge. The strategy consists of a short call, typically ATM or OTM. (See Figure 3.)

The covered call doesn't provide a lot of downside protection, but rather, reduces the cost of your original stock position. For this reason, it's better suited to late-stage bull markets that could be headed for a correction, or even modest early-stage pullbacks where volatility isn't exceedingly high.

Say you own a stock that's trading at \$175 and you sell the 180 call for \$5 (\$500 per option). This reduces your cost basis by \$5, and as long as the stock remains below \$180

at expiration, the option will likely expire worthless. Keep in mind that in reality, an option that's \$5 OTM can have high vol.

This leaves room for the stock to profit \$5 on the move from \$175 to \$180. If you add in the \$5 premium, that gives you a potential profit of \$10. But you could be forced to sell your stock at the strike price if the stock moves above it. And, beyond the \$5 reduction in your cost basis, you still have the risk of loss. You can do this strategy multiple times in bull markets, and even when the market is on its way down, so those premiums can add up over time.

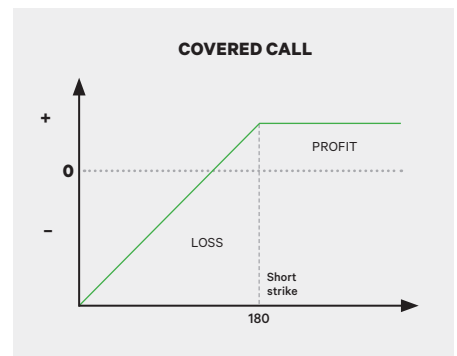


FIGURE 3: Covered call. Risk graph of a short 180 call. *For illustrative purposes only.*

THE RISKS POSED BY INDIVIDUAL STOCKS can be different from the risks that affect your portfolio as a whole. But that doesn't mean there's nothing you can do about it. Hedging individual high-flyers, or stocks that can get hit solely because of the sector they're in, is a strategy that traders could use to reduce the risk these stocks pose, while giving them the chance to profit.

SPREAD DISCLOSURES:

For more on the risks of trading option spreads, see page 37, #4.

**Prices discussed for the purchase and sale of options in this article do not include transaction costs.*

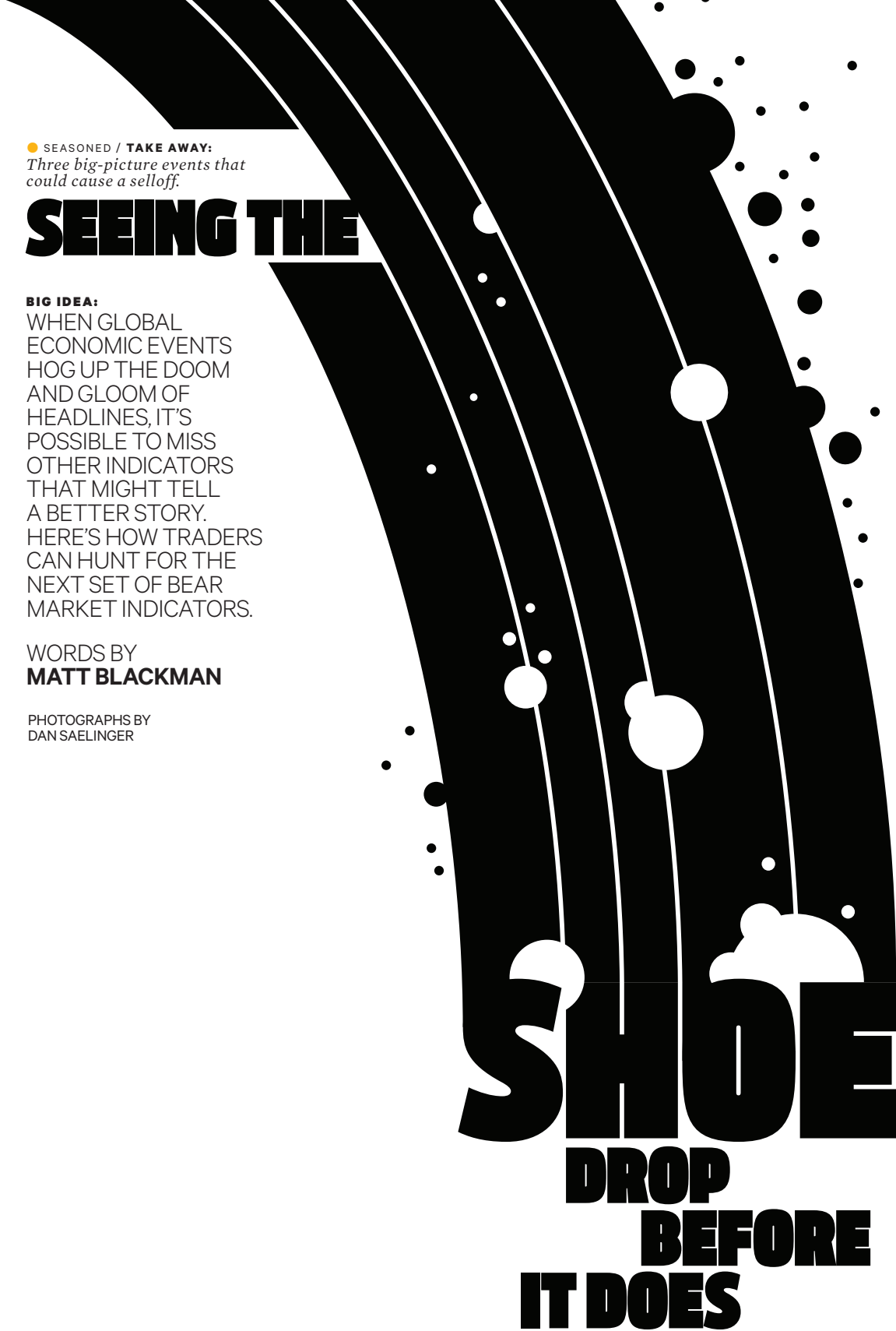
● SEASONED / TAKE AWAY:
*Three big-picture events that
could cause a selloff.*

SEEING THE

BIG IDEA:
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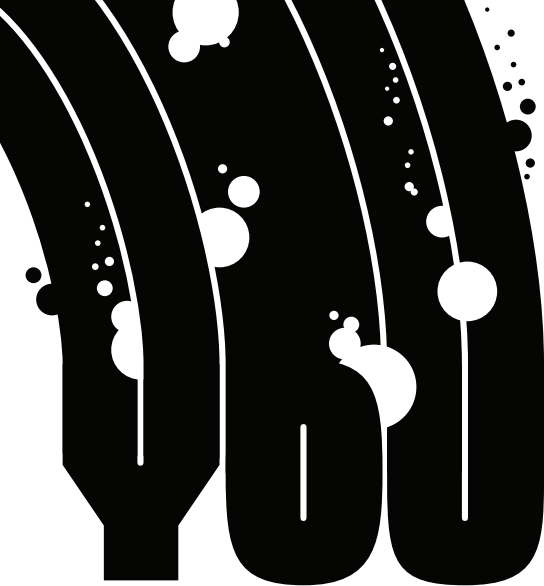
WORDS BY
MATT BLACKMAN

PHOTOGRAPHS BY
DAN SAELINGER



SHOE DROP BEFORE IT DOES





bring out old photo albums and walk down memory lane. And then you think about the “what-ifs”—all the life-changing scenarios that might have happened. To wonder what might have been is naturally close to a trader’s heart. Thoughts like “I should have gone to cash sooner,” or “If I had waited a couple more days, I would have made a profit,” or “I wish I’d seen that correction/recession coming.”

Hindsight is 20/20. Yet, to anticipate the unforeseen is another story. If you look at past recessions, you may note that each one had a different major trigger. In 1929 it was a combination of easy margin debt, rapidly rising stock prices, the specter of a global trade war, and rising interest rates. In 2000, it was a boom in internet and technology stocks, driven by falling rates and record-high stock valuations preceding the peak in March. In 2007–08, a housing boom fueled by a sub-prime bubble and “ninja” loans (no income, no job, no assets) triggered a meltdown in new-home prices. All this eventually exposed the vulnerable underbelly of the market, and we all know what came next—the rest of the stock market followed.

Whenever there’s a downturn, investors become fixated on what caused the stock reckoning. So, in the next downturn, they tend to focus on the wrong villain. And although each correction is accompanied by the usual suspects, the primary catalyst is often different.

With this in mind, let’s consider some current usual suspects that could get the market into trouble.

WHAT’S THE MARKET’S VALUE?

You may have heard of Warren Buffett’s indicator, market cap to gross national product (GNP), which suggests whether the stock market is undervalued or overvalued.

The indicator has been refined to use the

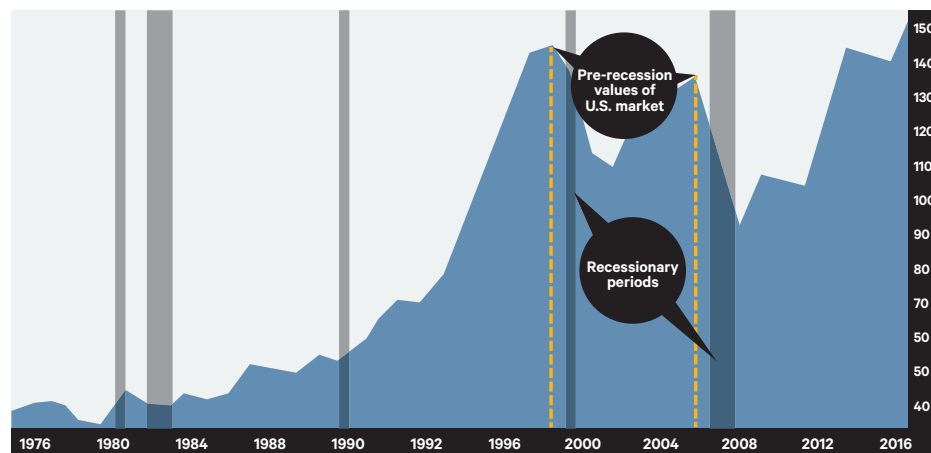


FIGURE 1: Stock market cap to GDP. The gray vertical bars show recessionary periods. The markets peaked (yellow dashed lines) in Q1 2000 and Q2 2007. Subsequent lows occurred in Q3 2002 and Q1 2009.

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

gross domestic product (GDP) instead of GNP. To see how well it’s worked in assessing valuations, fire up your thinkorswim® platform from TD Ameritrade and pull up the chart of “Stock Market Capitalization to GDP for United States” (see the sidebar, “How to View Economic Data”), which is similar to what you see in Figure 1. Display the recessions (gray vertical bars). If you focus on the 2000 and 2008 recessionary periods, you’ll see the value of the stock market cap to GDP ratios before the recessions (vertical dashed lines).

In hindsight, it’s easy to see when values were at medium- to long-term extremes. The ratio hit a peak in Q1 2000 just as the Nasdaq and S&P 500 indices were peaking. In Q2 2007, values peaked at a lower level as stock markets began to roll over. The challenge lies in figuring out when the next market value threshold has been reached—in advance.

The data on the chart goes up to Q3 2017. At that time, the ratio was higher than it was before the 2000 dot-com crash.

THE NEXT CULPRIT—DEBT

Debt can be a challenge, both in our personal lives and in the market. Debt exists at all times, but the devil is in the identification of how much debt triggers a stock price correction.

Consider Figure 2. If you look at the same two recessionary periods as in Fig-

ure 1, in 2000, debt was continuing to rise even as the stock market was falling month over month. Although debt relative to the economy took a one-quarter breather, it resumed its climb. At that time, debt seemed like a problem, but that level paled in comparison to the next peak in Q1 and Q2 2009. And although the peaks in total credit market debt and stock market capitalization peaked around the same time, the peak in debt/GDP came 24 months later than market cap/GDP.

Yet 2009 was different. Interest rates dropped to record lows in 2008–09, and have stayed there for nearly a decade. This suggests the stock market and the economy are more vulnerable to pressure as interest rates rise. A jump of 100 basis points when rates are 10% is much more manageable than a 100-basis-point rise when rates are 2%.

HOW TO VIEW ECONOMIC DATA

1. On the thinkorswim® platform from TD Ameritrade, select the Analyze tab.
2. Select Economic Data.
3. Search for economic indicators such as “Stock Market Capitalization to GDP for United States” and “All Sectors; Debt Securities and Loans; Liability, Level.”

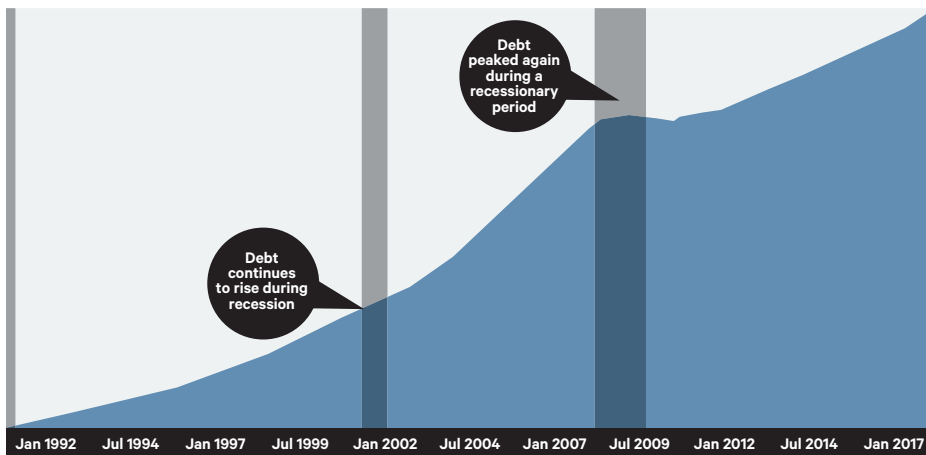


FIGURE 2: All sectors; debt securities and loans; liability, level. Relative to GDP, total debt hit a modest peak of 2.13 times GDP in Q1 2000 before taking a one-quarter break to resume its upward march. The next peak of 3.61 came in Q1 and Q2 2009, before relative debt levels dropped for the next five quarters. Then the ratio turned up again. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.



FIGURE 3: Price-earnings ratio versus interest rates. 1929 and 2000 saw price-earnings ratios peak, but interest rates were relatively low. Data source: Robert Shiller.* For illustrative purposes only.

And speaking of rates, another indicator to check periodically is the yield curve (the difference between short- and long-term bond-yield rates). A flattening yield curve (short-term rates rise and long-term rates fall) can be a sign of growing headwinds in bond markets. The yield curve was flattening into the end of October 2018.

THE THIRD SUSPECT—STOCK VALUATIONS

In March 2000 the Shiller cyclically adjusted price-earnings (CAPE) ratio showed

that stock values were overvalued (Figure 3). Unlike most price-earnings measures that use a 12-month look-back period, Shiller's CAPE looks back 10 years.

Although it would take another 39 months for that concern to be fully realized, there had been a number of other warning signs, including the Asian financial crisis in 1997 and the collapse in the Russian ruble in 1998.

As Figure 3 shows, CAPE values as of Q3 2018 at 30.57 are still shy of the 44.2 high in Q4 1999. However, it's interesting to note that CAPE peaked at a relatively benign 25.96 in Q4 2007, compared to 2000.

Keep an eye on intermarket forces. Both the Asian and Russian crises can trace their roots to high debt levels. When these cracks began to appear, they impacted markets at home and around the world.

You may have heard of intermarket analysis, which studies the interplay be-

tween stock, bond, commodity, and currency markets. The 1997 and 1998 crises are another example of how collapses in one market and region can affect the global economy. These events eventually impacted U.S. stock markets.

That situation can draw parallels with the present. By the end of October 2018, emerging markets were trending down, relative to the S&P 500 Index. Escalating trade tariffs and rising geopolitical risks haven't helped ease tensions.

Another concern is that according to the Philadelphia Housing Sector Index (HGX), new housing and housing-finance stocks dropped more than 30% between January and the end of October 2018.

FAST-FORWARD

By no means are we here to predict what the markets will do next. But when economic expansions run long in the tooth, as well as bull runs in stock markets, it's worth keeping an eye out for warning signs that might fall under the radar for most investors.

So, if you suspect a correction is in the offing, depending on where market volatility is at any given time, there are a lot of things you can do to prepare. Long puts, collars, and covered calls, to name a few, are discussed in greater detail on page 18 of this issue.

SUFFICE IT TO SAY, EVERY MAJOR BEAR market, and subsequent recession, has a supporting cast of usual suspects. Although similarities exist, each was triggered uniquely by a major catalyst that was different from the prior meltdown. There is often no single warning sign that another meltdown is on the way, or what will cause it.

Matt Blackman 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.

**Source for Figure 3: Spreadsheet available for download at <http://www.econ.yale.edu/~shiller/data.htm>.*



THETA

TIME WAITS FOR NO TRADER

PHOTOGRAPHS BY DAN SAELINGER

WORDS BY **THOMAS PRESTON AND DOUG ASHBURN**

BIG IDEA: AMID THE DYNAMICS OF OPTIONS PRICING,
ONE CONSTANT REMAINS: TIME. HERE'S HOW

TRADERS INCORPORATE THE EFFECTS OF TIME
INTO THEIR OPTIONS STRATEGIES.

● **PRO / TAKE AWAY:** *The importance of analyzing, positioning, and maintaining theta.*





FIGURE 1: Probability cone. To view this study in the thinkorswim® platform from TD Ameritrade, go to **Analyze > Probability Analysis**. For illustrative purposes only. Past performance does not guarantee future results.

Almost everything that goes into an option's price moves in two directions. In the short term, stock prices move up and down. So does volatility. Over longer periods, even dividends and interest rates change. But one thing doesn't change: time marches on at a steady rate, and always in the same direction, one day at a time. Like our mortal selves, each flip of the calendar, from one day to the next, takes an option one day closer to its expiration date.

Yes, time passes, and that's why options have time decay—also known as **theta**—to the detriment of option buyers and the benefit of option sellers. Theta is a theoretical metric (a “greek”) that represents how much an option's price loses, or decays, as one day passes to the next. And because of time's reliability, many option traders rely on theta.

But why do options prices decay in the first place? Keep in mind that an option's price has two components: intrinsic and extrinsic value. Intrinsic value is affected only by where the stock price is relative to an option's strike price. It's either zero for **out-of-the-money** (OTM) options, or the difference between the stock price and the strike price for **in-the-**

money (ITM) options. Extrinsic value (also called time value) is an option's value over and above its intrinsic value. Thus, the price of an OTM option represents 100% extrinsic value.

The extrinsic value of an option is essentially the market's opinion of how likely it is to be ITM at expiration, and by how much. All else being equal, an OTM option that the market thinks is more likely to end up ITM will have a higher price—more extrinsic value—than an OTM option the market thinks is less likely to go ITM.

THE CONE OF UNCERTAINTY

Time gives stocks the opportunity to move up or down. All else being equal, the more time is left until expiration, the more likely it is a stock may move up or down by a larger amount from its current price. That means a longer-term OTM option has a greater likelihood of turning into an ITM option. The less time is available, the less likely it is the stock may move significantly. See Figure 1.

So, in theory, an option with less time—fewer days to expiration—has a lower extrinsic value than an option with more days to expiration. Thus, theta measures how much each day reduces an option's extrinsic value.

Let's look at a theoretical example of the impact of theta on options pricing (Figure 2). Say the SPX was at 2738 at the end of November 2018. The 2700 put with 90 days to expiration was valued at \$73.33. Roll the calendar ahead a month. Assume the SPX is still at 2738. With volatility unchanged, the value drops to \$62.01. Note that it dropped \$11.32 over the month, although nothing changed except the passage of time.

Now roll the calendar ahead another month. Keep all else unchanged, and the value drops by \$22.06, from \$62.01 to \$39.95.

One month after that, in our example, the option has expired worthless, having lost the remaining \$39.95. Notice, though, that over each 30-day period, theta was higher—first \$11.32, then \$22.06, then \$39.95. Theta isn't linear. It increases as the option approaches expiration.

In this example, at 90 days out, the daily theta was \$0.47. So, when the calendar was rolled from 90 days left to 89 days left, the theoretical value went from \$73.33 to \$72.86. At 60 days out, theta was \$0.56, and with 30 days to go, theta was \$0.78. If you're designing time-sensitive options strategies, it's important to remember that theta isn't linear.

More to the point, how can one single day have such different impacts on options with different days to expiration? Although time is a constant in and of itself, as a *percentage* of time before expiration, it continues to grow as expiration nears. One day is 0.55% of 180 days, 1.67% of 60 days, 3.33% of 30 days, and 6.67% of 15 days. If an option is



Theo Price: 11/30/2018 Stock: 0.005 Vol: 0.00%

Strikes: 12 PUTS

Exp	Strike	Bid X	Ask X	Theo Price
28 FEB 19	2690	72.40 C	74.10 C	73.33
28 FEB 19	2700	73.70 C	75.40 C	76.53
28 FEB 19	2710	75.00 C	76.70 C	80.04
28 FEB 19	2720	76.30 C	78.00 C	83.35
28 FEB 19	2725	77.60 C	79.30 C	85.29
28 FEB 19	2730	78.90 C	80.60 C	87.09
28 FEB 19	2740	80.20 C	81.90 C	90.90
28 FEB 19	2750	81.50 C	83.20 C	94.95
28 FEB 19	2760	82.80 C	84.50 C	98.80

Theoretical value with 90 days to expiration

Theo Price: 12/28/2018 Stock: 0.005 Vol: 0.00%

Strikes: 12 PUTS

Exp	Strike	Bid X	Ask X	Theo Price
28 FEB 19	2690	72.60 C	74.10 C	58.74
28 FEB 19	2700	73.70 C	77.40 C	62.01
28 FEB 19	2710	74.80 C	78.70 C	65.58
28 FEB 19	2720	75.90 C	80.00 C	69.04
28 FEB 19	2725	77.00 C	81.30 C	71.03
28 FEB 19	2730	78.10 C	82.60 C	72.92
28 FEB 19	2740	79.20 C	83.90 C	76.92
28 FEB 19	2750	80.30 C	85.20 C	81.17
28 FEB 19	2760	81.40 C	86.50 C	85.11

Theoretical value with 60 days to expiration

Theo Price: 01/29/2019 Stock: 0.005 Vol: 0.00%

Strikes: 12 PUTS

Exp	Strike	Bid X	Ask X	Theo Price
28 FEB 19	2690	72.60 C	74.10 C	36.72
28 FEB 19	2700	75.70 C	77.40 C	39.95
28 FEB 19	2710	78.80 C	80.70 C	43.51
28 FEB 19	2720	81.90 C	84.00 C	47.13
28 FEB 19	2725	83.00 C	85.30 C	49.16
28 FEB 19	2730	84.10 C	86.60 C	51.16
28 FEB 19	2740	85.20 C	87.90 C	55.43
28 FEB 19	2750	86.30 C	89.20 C	60.01
28 FEB 19	2760	87.40 C	90.50 C	64.57

Theoretical value with 30 days to expiration

Theo Price: 03/01/2019 Stock: 0.005 Vol: 0.00%

Strikes: 12 PUTS

Exp	Strike	Bid X	Ask X	Theo Price
28 FEB 19	2690	72.60 C	74.10 C	0
28 FEB 19	2700	75.70 C	77.40 C	0
28 FEB 19	2710	78.80 C	80.70 C	0
28 FEB 19	2720	81.90 C	84.00 C	0
28 FEB 19	2725	83.00 C	85.30 C	0
28 FEB 19	2730	84.10 C	86.60 C	0
28 FEB 19	2740	85.20 C	87.90 C	2.24
28 FEB 19	2750	86.30 C	89.20 C	12.24
28 FEB 19	2760	87.40 C	90.50 C	22.24

Theoretical value at expiration

MORE TO THE POINT, HOW CAN ONE SINGLE DAY HAVE SUCH DIFFERENT IMPACTS ON OPTIONS WITH DIFFERENT DAYS TO EXPIRATION?

expiring the following day, it will lose 100% of its remaining extrinsic value over the next 24 hours.

That's why the theta of an option increases as time to expiration decreases. And it's why a trader who's short an option profits as time passes, all else being equal.

But all things aren't always equal. And theta is impacted by volatility.

IT'S ALL IN THE VOL

Volatility and an option's extrinsic value are related. In theory, when volatility goes up, an option's extrinsic value rises. That suggests theta has a bigger impact on an option when volatility is higher—because it has to erode more extrinsic value by expiration.

For example, if SPX is at 2738, and vol is at 21%, then the theta of the 2700 put with 60 days to expiration would be \$0.65 per day. If vol was at 30%, then the theta of that same put would be \$1.01.

Theta is often also highest for ATM options because extrinsic value is highest for ATM options, and moves lower for options that are further OTM. In effect, theta has to whittle down more extrinsic value for ATM options than it does for OTM options.

As a trader looking to make money from theta, you want to analyze it in a dollar amount. To do that, multiply the option's theoretical theta by the option's multiplier (typically \$100 for U.S. equity and index options, but varies with options on futures), and then by the number of contracts you plan to trade. Conveniently, the thinkorswim® platform from TD Ameritrade does

this for you. To see the total theta of your positions—positive and negative—look at the **Position Statement** section under the **Monitor** tab.

Yet, as we've seen, theta is a moving target. As time, stock price, and volatility change, so does theta. So if you want to maintain a certain level of theta for a particular strategy, or even your entire portfolio, monitor your positions closely to make sure you stay within target parameters. Otherwise, it might be time to tweak, roll, or close out positions.

And if you typically beta-weight your portfolio, there's no need to do so with theta as you would with, say, your delta or vega exposure. Unlike those greeks, for which you might want to normalize to a benchmark such as the S&P 500, theta is just what it is. Time passes for that high-flying tech name at the same rate as for SPX or anything else.

SO MUCH OF TRADING, AS WITH LIFE, is in flux—up one minute and down the next, with the occasional sharp turn sideways. Yet time marches on. This is your options position, and it's decaying. One Day. At. A. Time.

Thomas Preston and Doug Ashburn are not representatives 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.

FIGURE 2: Decaying value. As time passes, an option may lose extrinsic value. For illustrative purposes only. Past performance does not guarantee future results.

ALT VOL

**THE
OTHER
INDICATORS
YOU
COULD
BE
WATCHING**

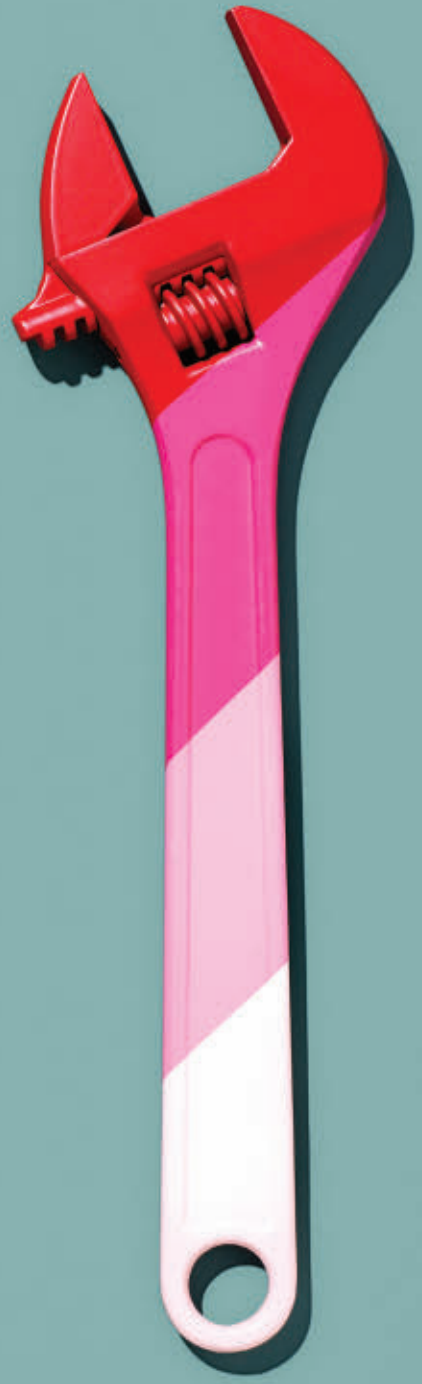
BIG IDEA: STOCK AND OPTION TRADERS MAY TRADE DIFFERENTLY, BUT THEY SHARE COMMON GROUND. WHY NOT APPLY SOME OF THE TECHNIQUES STOCK TRADERS USE TO IDENTIFY VOLATILE CONDITIONS? WORDS BY **JAYANTHI GOPALAKRISHNAN**



● SEASONED / **TAKE AWAY:** *Three big-picture events that could cause a selloff.*



PHOTOGRAPHS BY DAN SAELINGER



[A]

strong wind forecast is enough to send most of us indoors. Not surfers, though. For them, it's a different story—a surfer lives for windy conditions.

But it has to be the right kind of wind. There are plenty of factors that impact the quality of the surf—tide, type of wind, type of break, direction of wave. The right combination creates the perfect surf. Surfers long for those days—that's when you'll find them at the beach in swarms.

The relationship between surfers and surf quality can be compared to the relationship between option traders and volatility (“vol”). In a high-vol environment, options trading activity typically increases. It's an option trader's playing field.

All option traders know the ubiquitous Cboe Volatility Index (VIX). And that a high VIX generally indicates high vol. But VIX isn't the only volatility indicator out there. Stock traders who rely on charts may also consider vol, but they approach it a little differently. Stock traders have more choices when it comes to vol indicators. So, can option traders use some of those studies to help analyze a stock's options?

VOL, WHERE ARE YOU?

When vol starts heating up, it's time to look for opportunities. If two or more indicators confirm high vol, the likelihood of seeing increased trading activity is higher, too. We'll look at three popular vol indicators stock traders use that option traders could adopt into their trading decision-making rules.

Average True Range. J. Welles Wilder developed the Average True Range (ATR) indicator to measure volatility in commodities, although it's widely used by stock traders as well. ATR looks at the difference between the current high and low, the absolute value of the current high minus the previous close, and the absolute value of the current low minus the previous close. The method you might choose depends on whether the



FIGURE 1: Price range, gaps, and volatility. The Average True Range (ATR) indicator picks up the pace when prices break out of a consolidation with a gap upward. ATR moved lower even though prices continued to trend up, suggesting price ranges were smaller, and vol was drying up. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

prevailing price bar is an outside day, gap, or inside day. For example, if the prevailing high is higher than the previous day's high, and the prevailing low is lower than the previous day's low, then you'd use the difference between the current high and low. If there's a gap up or down, or if the prevailing close is within the high-low range of the previous day, then you'd use the absolute-value calculations. When using those absolute values, you can expect ATR to be lower for lower-priced stocks, and higher for higher-priced ones.

To calculate ATR, take the average of the price ranges. Typically, price ranges are averaged over 14-day periods. In other words, you go back 14 days, add up the true ranges, and divide by 14. Generally, when price moves strongly—such as before earnings—you might see large price ranges. When prices move within a trading range, meaning that movement is relatively flat, price ranges tend to be small.

You can use ATR to identify market changes. For example, if price has been trading within a range for a relatively long time, and then starts to show signs of breaking out, you may see ATR start to rise. On the other hand, if a volatile market

starts to trend up or down, ATR could fall. You can see this in Figure 1. After a consolidation period where the average price range was low, price gapped up. Notice how ATR spiked and continued moving up. After trading activity slowed, even though the market continued to trend up, ATR moved lower.

Bollinger Bands. Developed by John Bollinger, Bollinger Bands are popular and available in just about any charting software. They're used to identify if prices might be high or low on a relative basis over a specific time frame. As the name suggests, they're bands or envelopes that can be overlaid on price charts.

Bollinger Bands are calculated based on the distance of price from a moving average over a specified number of bars, typically 20. The bands are a fixed number of standard deviations above and below the moving average, usually two. Because the bands are based on standard deviations, they adapt to changing market conditions. Two standard deviations means that 95% of price movement will be within the bands. So, when price breaks out above or below the bands, think of it as out of the ordinary, which can

mean an increase in vol.

When you apply Bollinger Bands, you'll see three lines (Figure 2). The upper and lower bands represent standard deviations—usually two—above and below the moving average, which is the middle line.

In addition to vol, Bollinger Bands also indicate the direction of price. When price is at the higher band, it indicates that price is high. When price is at the lower band, it indicates that price is low.

The bands have a tendency to widen and narrow. When price volatility is high, the bands widen. And when it's low, the bands narrow. But of course with the markets, anything is possible, including high vol during consolidations. So if you see wide bands moving sideways, it could mean choppy trading conditions ahead.

Chaikin Volatility. The Chaikin volatility indicator (CVI), developed by Marc Chaikin, measures vol by looking at the difference between the high and low for each period or trading bar. When the range between the high and low is wide, it can mean higher vol. When the range is narrow, it can mean lower vol. This indicator calculates the percentage change in a moving average



FIGURE 2: Bollinger Bands, vol, and price direction. The narrowing of the bands suggests volatility is low. When they widen, it may mean price movement is volatile. How price moves with respect to the upper or lower bands may indicate which direction prices are moving. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

of a high versus a low price over a certain time frame, usually 10 bars. The objective is to look for sharp increases in vol. The indicator fluctuates around zero (see Figure 3). As its value increases, it suggests prices are changing fast, and within a wide range. In a word, it suggests greater volatility. When CVI decreases, it suggests prices are moving within a narrow range, or that

the market is perhaps less volatile. Unlike the ATR, CVI doesn't consider gaps in its calculation.

In Figure 3 you'll see that the CVI creates clear peaks and troughs. Notice how the indicator ebbs and flows around the horizontal zero line. The movement is smooth, and you can clearly identify if the indicator is moving up or down.

HOW TO PULL UP AN INDICATOR ON THINKORSWIM

1. From the **Charts** tab, start with your basic chart.
2. Click the **Studies** button.
3. Move the cursor to **Add Study**.
4. You can either choose a study category or "All Studies." Indicators are listed alphabetically. Next, select the study you want and it'll appear on your price chart.



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



FIGURE 3: Chaikin volatility indicator. The indicator moves above and below the zero line smoothly. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.



FIGURE 4: Where is vol? Using ATR, Bollinger Bands, CVI, and ImpVolatility can help identify when vol is increasing or decreasing. Source: thinkorswim® from TD Ameritrade. For illustrative purposes only.

LOOKING AT PAST AND FUTURE

Why would option traders use these price chart indicators when they can use vol-specific indicators to make trading decisions? Generally, vol indicators reveal when options prices may be cheap or expensive. When vol is high, options prices might be expensive, and when vol is low, they may be cheap. But more to the point, what's considered low or high vol? Even when vol looks high, it could go even higher. There's no way to know with certainty. Indicators such as Bollinger Bands, ATR, and CVI look at past prices to indicate prevailing price action. So, what if you combine these indicators with something that looks more toward the future?

One choice is to use ImpVolatility (“Implied”) on your thinkorswim® platform from TD Ameritrade. The indicator is mean-reverting, and looks at the last 52-week high/low range of a stock price to anticipate vol. Keep in mind that some stocks may be more volatile than others, which means vol will vary from one stock to another.

PUTTING THEM ALL TOGETHER

Let's combine all these indicators—ATR, Bollinger Bands, CVI, and Implied—on one chart and see how they work together.

In Figure 4, Bollinger Bands are overlaid on the price chart, while ATR, CVI, and Implied are in the lower studies chart.

As you can see, when Bollinger Bands narrow, these indicators would seem to agree that vol is low. Notice how Implied takes the lead and starts moving up. A few days later, ATR and CVI move higher. And when all three indicators start their upward move, Bollinger Bands start expanding, and price moves along the upper band. Then, Implied traditionally starts to move lower, while the other indicators might continue their move upward. It's not until price starts to revert toward the midline of the Bollinger Bands that these indicators show a cooling down in vol. You'll often see this scenario play out in the equity markets. After a consolidation period, stock traders rush to buy the stock on the first signs of an uptrend. After the initial rush, price may mean-revert, and vol cools down.

A few months later, Implied moves higher than the other indicators. Prices are “walking along” the lower Bollinger Band. All indicators show a high-vol environment. It's fun to note that Implied tends to spike when prices are lower on a relative basis, possibly because stock traders tend to buy when prices fall, thus increasing a stock's vol. The other indicators suggest price may continue moving up. When such scenarios occur, it's worth heading over to the Analyze tab on your thinkorswim platform to review the option chains and look for premium-selling opportunities.

HIGH VOL IS IMPORTANT FOR AN OPTION trader. The challenge is to find the stocks with high vol, which is where these indicators come in handy. You could use price chart indicators and vol-specific indicators as a scanning tool to help identify high-vol trades with relatively higher price ranges. You may even get an idea of the potential direction of price movement. The key is to have the patience to wait for the right conditions.

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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**TRADER
JARGON**
TURN TO
PAGE 36

Let's say those 10 are in a particular sector, and are much lower because of overnight news, but they haven't opened yet. Say the market rallies back, so the 490 stocks are unchanged, SPX is unchanged, but now those remaining 10 stocks have much lower opening trades. Because the 490 stocks' last trade prices are unchanged, the SPX may not drop too much. But SET will add those much-lower opening prices of the 10 stocks to the lower opening prices of the 490 to get a value that is much lower than SPX.

So say you look at your position in an expiring option at the close of trading on Thursday before expiration, or even at the open of trading on Friday. You may think a profit is safe, or a loss is likely, because of where SPX is. But you're at the mercy of what SET might be. And that risk can't be hedged, because those expiring SPX options can no longer be traded.

SO, WHAT DO YOU DO?

If you have a profitable position in expiring SPX options, you may want to close them before the close of trading on Thursday. Maybe you're short a **strangle** that's far **out of the money** (OTM) based on SPX's price. If you hold the strangle, SET might be marked much higher or lower, and turn your winning strangle into a loser. Ouch!

Say you have a losing position—a long SPX OTM option that has a zero bid and 0.05 ask and is just about worthless. Maybe you hold it as a sort of lottery ticket in case SET settles high or low enough to make that OTM option **in the money** at expiration and make its loss smaller, or even give it a profit.

Keep in mind that closing SPX or other index options, or going through exercise or assignment on expiration, incurs commissions and fees.

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For more on the risks of trading and trading options, see page 37, #1–2.

On Your Mark ... Get SET ... Wait!

PRO • **BIG IDEA:** HOLDING SHORT SPX OPTIONS INTO EXPIRATION MAY BE RISKY. HERE'S HOW TO STEER CLEAR OF SOME HIDDEN DANGERS.

• Most equity options expire at the close of trading on a Friday afternoon (PM-settled). Some cash-settled indices like SPX, NDX, and RUT expire on the open of trading on a Friday morning (AM-settled). And some have both AM- and PM-settled options. Friday morning or afternoon, what difference does that make? A lot, as it turns out.

The Cboe uses the opening trade price for each of the stocks in the index to calculate the settlement price of an AM-settled index. For the SPX, the index settlement has its own symbol (SET), and is calculated with the same formula as the S&P 500 (capitalization weighted). But instead of using the last trade prices for all of the 500 stocks, like the SPX, SET uses the opening prices of the SPX's expiration day.

SIMPLE ENOUGH, BUT ...

When you're looking at the last trade prices for 500 stocks, some of them trade many times per second. And some may have a few

minutes between trades. But the SPX doesn't care; anytime one of its stocks has a trade, its value updates. And the last trade price might be yesterday's closing price, if a stock hasn't traded since then.

The 500 stocks don't all have their opening trades at the same time. Some stocks trade at the opening bell. Others may have their first trade later. The SET waits until every stock has an opening price, and uses those opening prices to determine its value. So the price of SPX at the open on Friday won't necessarily reflect what SET will be.

Here's why. If a stock might be much lower than the previous day's close, then the stock might not trade right at the open. For example, maybe the market is lower on the open, and 490 of the S&P 500 stocks have their opening trades lower than their previous close. SPX is lower, and uses yesterday's closing prices for those 10 stocks. SET collects those 490 opening prices and waits for the remaining 10.

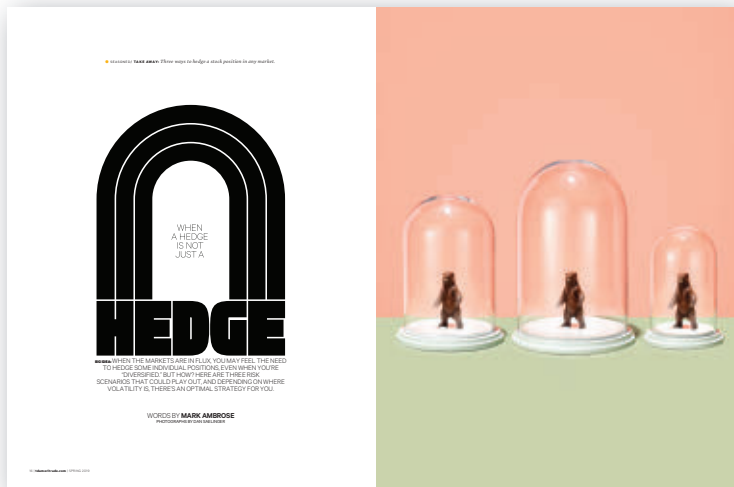
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At the money (ATM)

- 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.

Collar — A collar combines the writing, or selling, of a call option with the purchase of a put at the same expiration. Typically, this involves a call with a strike price above that of the underlying stock and a put with a strike below the stock. The strikes create “floor” and “ceiling” prices, “collaring” the underlying stock in between. In return for accepting a cap on the stock’s upside potential, the investor receives a minimum price at which the stock can be sold during the life of the collar.

Covered call — A limited-reward strategy constructed of long stock and a short call. Ideally, you want the stock to finish at or above the call strike at expiration. If the stock price settled above strike price, you’d have your stock “called away” at the short call strike. You would keep your original credit from the sale of the call as well as any gain in the stock up to the strike. Breakeven on the trade is the stock price you paid minus the credit from the call.

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 \$0.50 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.

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 — Gives the owner the right, but not the obligation, to sell shares of stock or other underlying assets at the option’s strike price within a specific time period. The put seller is obligated to purchase the underlying at the strike price if the owner of the put exercises the option. In the case of an index option, it’s a cash-settled transaction with no underlying asset changing hands.

Out of the money (OTM) — An option whose premium is not only all “time” value, but also, 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 — 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.

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

Vega — A measure of 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.

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

DISCLAIMERS

IMPORTANT INFORMATION YOU NEED TO KNOW

1

GENERAL DISCLAIMER

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

Transaction costs (commissions and other fees) are important factors and should be considered when evaluating any options trade. Options are not suitable for all investors as the special risks inherent to options trading may expose investors to potentially rapid and substantial losses. Options trading 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.

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 option 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 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

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4

SPREAD DISCLOSURES

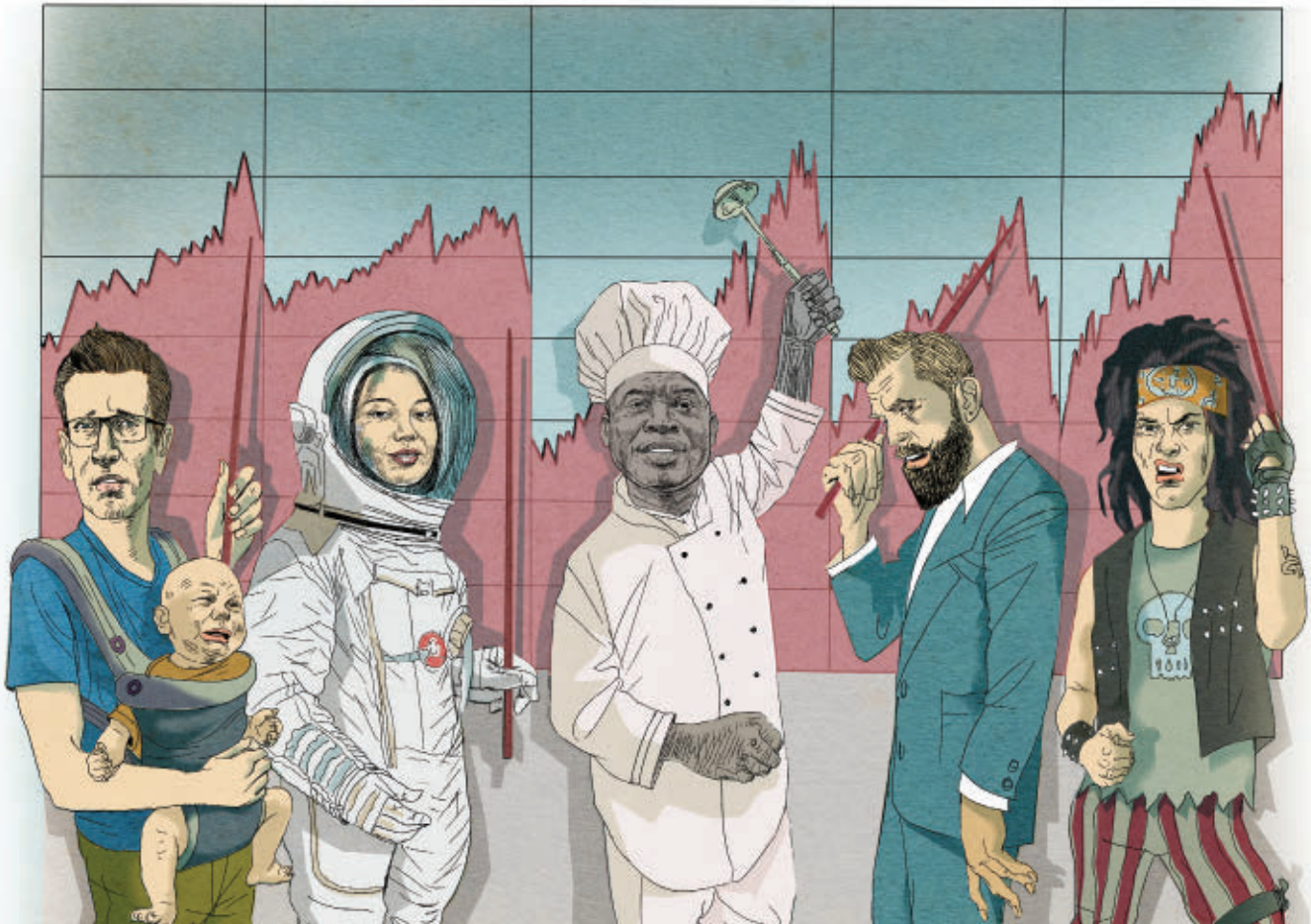
Options collar (risks of both sides already disclosed individually): The collar position involves the risks of both covered calls and protective puts.

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: 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.

Index Ideas That Never Made It

• There are hundreds of indices. Smart people cook up new ideas for an index every day to feed the demand of curious traders. But they don't all catch on.



PARENTAL HEADACHE INDEX

• Kids. You love 'em. But since caveman days, teens, tweens, and toddlers have vexed parents. In the 1920s, a down-on-his-luck phrenologist took a clue from Wall Street and noticed statistical patterns between the age of children and the sale of aspirin. The now defunct Parental Headache Index gained popularity with parents who tried to revenge-trade from their duress. But it became incalculably large in the 1930s as children and parents battled over radio dials. The index failed with the advent of TV.

MOON ROCKS INDEX

• The space race in the 1960s meant that anything associated with the moon or NASA was hot. A forgotten entrepreneur created the Moon Rocks Index in the belief that the 840 pounds retrieved from lunar missions would be just the start. People zipping to the moon and back would bring in a steady supply. They would need an idea of the price and a hedging vehicle. Unfortunately, a legal battle over the fungibility of meteorites tangled the index in the courts. It was phased out as popular attention turned to mood rings.

GRAVY INDEX

• Given gravy's status at the table and its universal popularity, the Gravy Index was conceived in the 1930s to track the value of five types: beef, ham, chicken, cream, and Italian. This led to an explosion of inter-gravy arbitrage. The index was useful for families during the Great Depression. But World War II meant all gravies were to be shipped to troops overseas, and the Gravy Index fell into desuetude. Post-war economic expansion, as well as new concerns about waistlines, spelled the demise of this most delicious index.

STYLISH BEARD INDEX

• In the late 1800s, when beards were at peak popularity, the Beard Index was a measure of the total mass of the average New York beard. A random sampling of 100 beards' weight was averaged into the index. Despite early excitement, the Beard Index proved too easy to manipulate by unscrupulous whisker growers, who would purposely work more waxes, pastes, and pomades into their beards to boost the index and pocket the profits. The Beard Index was phased out during the Great Razor Revolt of 1901.

ROCK-CONCERT DECIBEL INDEX

• The first guitar amplifiers were largely underpowered and could split nary an ear. It wasn't until the 1950s that amps were big enough to produce decibels at jet-engine levels. The decibels were exceeded again in the '60s, and by the early '70s, rock concerts with stages packed with amps were the norm. An enterprising mathematician noticed this uptrend in decibel levels. The Rock-Concert Decibel Index was born: a weighted average of the decibels 50 feet from the stage of a sampling of daily music events. The index never really found favor, as traders couldn't hear each other.

These are satirical in nature and not actual indices.




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