

## TRANSCRIPT

# Charting with the newly available technical indicators

*Presenters: Jonathan Lord and James Savage*

**James Savage:** Good afternoon, good morning everyone, depending on where you are. Both Jon and myself, we're definitely excited to be here. When we heard that we were going to be putting on a presentation regarding the new charting features, I'll tell you, both of us were kind of excited and wanted to jump on the opportunity, because it's not every day that we get to show a new either tool, or new application from Fidelity Investments. So I'm absolutely happy to be here. And just for some of you that maybe haven't seen me in some of the webinars before, or some of the coaching sessions, both Jon and myself, we're, as Tre mentioned, part of the Trading Strategy Desk. We are a group of nine traders here at Fidelity that are here to assist clients with a variety of topics. Sessions regarding options, technical analysis, Active Trader Pro, tool demonstrations, and both morning and aftermarket briefings. We are live, just like we are today, we turn on our cameras so you can see us, and these sessions, they're a little smaller, so we get the opportunity to sometimes stop and answer questions in real-time. So if any of those topics interest you, or that format appeals to you, I definitely want to invite you to join some of our sessions that we run Monday through Friday, I'll be happy to see some of you

there. But of course, with the topic at hand, this is going to be related to charting and technical analysis. This is going to be on Fidelity.com, it's from a company referred to as Chart IQ. We actually call this Chart Plus, because it's a, like think of it as more of an enhanced type of charting that we have for Fidelity.com. And it kind of bridges the gap between what we've had on our website, and the Active Trader Pro platform, which is typically, I'd say, geared more towards experience and folks that want to take their charting to the next level. The good news is, everyone does have access to this charting feature, since it is on Fidelity.com.

So by the end of the webinar today, I definitely encourage you to, to take a look, try to explore now with some of the new knowledge that you're going to gain from this session, I think you'll feel more comfortable and confident when using this new charting software. But Jon, enough of that introduction, I think it's time for us to really share our screen, kind of get involved with the charting experience.

**Jonathan Lord:** Appreciate that, James. Yeah, definitely. Excited to show this new software here, some new research capabilities. So obviously, we want to start with square one. We want to see where we started from, and you may have already done this before, but this will be, again, a presentation of -- there is the

old research page, right? It's what we have Tesla pulled up here, you would enter your symbol, you can certainly get there from any page. But this would be the old version, right? You're probably familiar with this, we've got a few drawing tools, we've got a few indicators available to you here. Again, on this older research version, you can expand this chart out, but what we're going to be looking at here is the use new research button. So if you, if this doesn't look like your screen, then you already may have clicked on this button before. But we're going to go ahead and go in and dive into the new research, again, we know we change these things all the time up, so this may be new-new research for you, right? So if you haven't been here before, definitely again, I would advise take a look at it, really excited to see some of these new features come through. Of course we have additional assets and things that showed up at the top here, flowing through in terms of understanding the markets. We've got our symbol, we've got our information coming in.

And another interesting thing, you won't see it right now, because markets are open, but we do have the ability to see pre and post-market, will be additional data that would show up on this page, as well. And then just continuing to scroll down, I'm going to go through one other thing here that we did recently add back to -- you know, we're excited about it here on the desk, these little things like this, again, we get excited about, and short interest data, back on

the page, we do see that you can see the prior period, and current period, remember that this is not a -- short interest comes in biweekly, so you do see this as middle month, and end of month is when you get that data that comes through, but again, more information at your fingertips, hopefully again you can utilize this to your advantage as traders, something that we definitely want to keep an eye on, and so that information back on the research page, so excited about that.

We do see a lot bit of a preview of the Chart Plus software here, the older version which is this -- called mountain chart, but I'm going to dive in a little further here, I want to click on the Chart Plus button, which will then load us up with what would be our default chart. Now you may not see this specific one, this is the candle version, you may find that you have one of the other displays here. So I'll show you how to change that here shortly. Want to just give though the lay of the land, how we would operate within this software, and understanding what things we can edit, change, move around, again, get our hands a little dirty here, let's go ahead and just see what's going on with this chart. So you do have, again, that saved chart that you can do, again, we want to get this access here, we -- obviously James and I work directly with Active Trader Pro on our presentations quite a bit, so we want to kind of bridge that gap to have the website to have a lot of that functionality. And in some cases,

we have even more indicators, we have even more displays that you might not even have access to on Active Trader Pro. So that's definitely something to keep in mind, this may be a nice supplement to your Active Trader Pro. I know if I sit on the beach, I'm not going to probably bring my laptop with me, or even my desktop, right? (laughs) I'm going to bring my phone. I might want to, again, have access to some of these type of tools wherever I am, at any time, as a trader, definitely something to keep an eye on.

So again, this is the just overall chart. Again, I've got Tesla here, it's defaulting to this volume underprice, we're going to have some volume conversation later. So remember that, but then we do have the volume here at the bottom of the screen. We have this little crosshair as well that's moving across, kind of defaults, so we know based off of where our mouse is, and it tells us of course the date on the bottom, and of course the price on the right. So basic charting, but really, again, we want to make sure you guys are familiar with, again, what this is telling us here.

We do have some defaults as well, of course, in terms of our timeframes that we can click through. So again, if we wanted to see, we're coming up to the end of the year here, right? A couple more weeks, so happy holidays to everybody, but as we get into this end of year, we can see the year to date,

again, really just getting us from that first day of the year to now. Something we're always thinking about as we move into year end, how are these charts going to move? Are we getting a Santa Claus rally? Are people going to need tax loss harvesting stocks? Stuff like that's going to come up quite a bit. But that's how you would just do these initial changes, of course we have the standard ones you would be familiar with. If you're looking for a specific type of frequency though, that's up here. So you do have the ability, again, daily's typically what we'd often see, on a longer term chart. We have, of course, the weekly, monthly, and quarterlies, again, all depends on your timeframes. All depends on what type of trader you are. And certainly again, every type of trader should probably look at, closer, smaller term charts. Shorter term charts, I should say. Longer term charts. To make sure that you're familiar with, again, trend on all different levels, and we're going to talk more about trend as well here shortly, as we get into the actual indicators, but nice to have these things, frequencies, of course, change that timeframe. So remember, we're down here at one year to date, we do have the beloved one-minute charts, some people swear by these, of course, getting the, all of the data that you possibly can immediately here, they look to us, we also have the ability to drag and move our charts left and right.

And speaking of short-term charts, again if you do want to see the extended hours, that is under the chart preferences here as well. So we're able to see that view by clicking here, and able to see pre and post-market as well. Very clearly defined right here, the post-market a little bit darker purple, a little lighter purple for the morning here, dawn and dusk, right? So definitely excited about these features being here, readily available to us, excited about some of the new type of frequencies we might not have seen before, the four-hour breaking up a day into basically two separate bars, uh, we can get, of course, again, longer term, shorter term, all of this available to us on the frequency, which again, let's go back out though just a little bit, I do want to cover a couple of things in terms of some of the events that you might see, we're going to get into the drawing tools, James will be talking to us through these. There are quite a few additional drawing tools we're going to get to see. We're going to get to see additional types of displays I'm going to show you here, but the indicators, of course, again the bread and butter of what we're talking about today. So we will definitely get to that, as well.

Do want to show events, of course, the standard earnings, and one of the reasons that I added Tesla here, of course, was the split that happened not long ago, dragging backwards, we're able to see where that split did occur. We could also just go back to the two-year chart to get an extra image of that

as well. So definitely, again, adjust this to your liking, customize it, add it to -- save it to your -- save your changes, name it what you want, jump between different ones, the ability to, again, change frequencies quickly, ability to change some of these displays, which I think is going to be probably my next step here is just to go through a couple of these, we're going to get to a really important one that I'm excited about, Heikin-Ashi here, shortly as well. But we do want to show, again, the standard candle. Most of us should be familiar, if you're a trader, you would be familiar with the candlestick, definitely again, just giving you a lot of insight immediately, just by looking at one candle, I'm able to see open high, low close, was there buying that day, was there selling, in terms of where it opened versus it closed, right? Candles tell us quite a bit, in terms of just, immediately just looking at that chart.

Bar charts, again, that's probably a split in terms of what traders might use, there is often a question that we might see as well is hey, you know, if I'm using a mutual fund, you don't, you're not trading a mutual fund throughout the day, so you know, the standard mountain chart, again, will just give you that one price point at the end of the day here. So definitely, again, something you can utilize, or maybe as a long-term investor, you don't really care about all of the ups and downs of the day, you just want to see where did it close at, where did my money, at the end of the day, where did I land, right?



So again, that's in the displays. Another one you could even add more data to, so going from mountain, we can add something like a volume candle, right, that again adds just an additional layer, we got open, high, low, close, but we also have a contingent in terms of volume, if it's a relatively high volume day, kind of moves that candle, makes it a little bit wider, right? So again, giving us a little bit more insight into what happened that day, was that backed by more volume, was it a lower volume type day, smaller, you can see how thin they can get along the way. Again, big gap higher, well what do we see? We see this larger day here, right, in terms of volume. So definitely, again, interesting stuff to say the least. We are kind of running through, again, quite a few of these different ones, I do want to get to Heikin-Ashi here later on, because it is kind of an interesting hybrid, if you will, it's a hybrid of a trend indicator and candlestick. So, we'll get there eventually, so again, that is definitely one of the highlights of this event. But we do, again, we want to focus on this chart available to us, all of the edits are available, but there's one thing really neat that we can talk about, which is drawing tools, right? We talked about art versus science when it comes to technical analysis, and James is going to show us a little bit more of that, maybe the art side of that. How do we add our own annotations, our own edits to this chart using the draw tab?

**James Savage:** Absolutely. And you know, one thing I really appreciate about this new kind of layout of the chart system, it's -- it looks very similar, right? For those of you that are familiar with Active Trader Pro and the advanced charts, you probably see the similarity. So it's not going to be, I would say, too much of a kind of a learning curve, at least from the topic of understanding where things are located, how to navigate yourself around the chart, it's still going to have quite a few similarities. However, I would say the similarities really stop at that outline and layout, because as we start to go under the hood, you're going to see quite a few differences regarding the drawing tools and the indicators, which are really what Jon and I are going to spend the remaining, we'll say three quarters of the time today.

So I'm actually going to jump over to my chart, as I kind of illustrate some of the drawing tools that either I find to be some of the most helpful, or some of the drawing tools that have been heavily requested. So right now, we're looking at a slightly different chart than the Tesla chart earlier, I'm going ahead and putting on an indice. So we're actually looking at the RUT, which is the Russell 2000, it's a proxy for measuring engaging the price action of small cap stocks. So, what I'll do is go ahead and click on draw, and I will mention this now, I'm going to mention this again, we are covering just a few select drawing tools and indicators among the variety, I could probably spend an hour or two,

or even three, regarding drawing tools here. I want to focus on at least some of the ones that maybe you're familiar with at first, and I think one of the more commonly used ones are horizontal lines. Bare basic, very simple, but go ahead and click on this, and then by left clicking anywhere on our chart, it will imprint this horizontal line, and just like what you might be used to, if we were to click on this again, we can click, move, and drag it, to exactly where we want it to go, if we want to try to kind of align that horizontal line with price.

Now in addition to the horizontal lines, I would say with that being probably the most commonly used one, the second most common drawing tool is going to be a trend line. So by going over to draw, I can scroll down, it's in alphabetical order, so it's fairly easy to find once you know what you're looking for. And similar to what, how we already have it, I could go ahead and click maybe a low point here, click again to extend that trend line. And of course, in today's webinar, any lines, any horizontal trend lines, they're just for illustrative purposes only, we're not really trying to identify a trend, but what do you notice with this trend line that's a little bit different than how we currently have it?

Well, we're getting this little blue, I like to say this little like, bolt hole that's being opened up here. And not only are we getting a percent change, we're

also getting a price change, or in this case, an index value change, since we're looking at the Russell. And in addition to those two pieces of information regarding change, both on price and percent, we also get the timeframe, which is a fairly kind of a neat way to just measure and gauge the time that you're viewing this trend for. Now right now, we're noticing it's saying 53 bars, so you might be asking, especially if you're not as familiar with chart (inaudible) what does 64 bars mean? Well keeping in mind that the bars correspond to the periods in time, and our periods in time are our frequency. Right now, I'm on a daily frequency, so when we're looking at 64 bars worth of time, well, we're looking at 64 trading days. So with about 20 days a month, we're getting about three months worth of data.

And this is, I would say, a fantastic kind of addition to the trend lines that we didn't have before, where we were just showing a percent change, now we've got that price, and we've got the timeframe. But let's say, well you like the trend line, but you've maybe noticed some type of trading range, both with an upper and lower bounds. You might be looking at something called a channel. So, let's go ahead and illustrate that, and in order to remove what we currently have, it is very quick, very simple, and easy. By right-clicking on any of these drawings, they are removed. So, if you start marking up your chart, and you notice it getting a little bit too busy for your taste, just with a simple

right-click, you can go ahead and start cleaning up this chart so you can focus on what might be more important, which is the actual price of the underlying.

So moving on over to draw, let's go ahead and add a channel. So this involves a few clicks, so again for, to try to maybe illustrate what I'm doing behind the scenes, I'm first marking maybe some upper range, so I'm just looking for some price reversals, one click puts the line, the second click anchors that line. And then, I can choose maybe a lower bound. Again, just for illustrative purposes, I just want to kind of illustrate how it really pops on this chart with the white background. And just like with our trend line, if I were to hover over this channel, I'm getting the index change or price change, depending on what you're looking at, the percentage change, and the length of time, in this case, we're looking at 59 bars.

Now these three that I first illustrated are something that is what we already have, just with a slight modification. We've added a little more information to the horizontal and trend lines and channel from what we currently have. But of course, this being a new application, the new software, I want to show something new. So I'm going to go ahead and right click just to clear it, just to keep my chart nice and clean, move over to draw, and one of the first ones in this list is the average line, and I've had clients bring this up before, where

they're looking at a range of price movement, and wondering well, it's been maybe oscillating within a certain range, what's the average price? Well, this is doing the work for us.

I'll go ahead and click at this kind of beginning point where we notice price start to exhibit some noise here, maybe some sideways movement by left clicking, it begins my line, and notice as I'm dragging it, there's a little black line there. And it is moving up and down as it's consolidating all of the prices, in this case, the closing prices, within each and every day. Go ahead and left-click again, and what we've now done is input an average price, or in this case, an average index value, over this given length of time, and just like with the aforementioned drawing tools, we're going to get the timeframe, we're going to receive the number of bars within this range of price, and of course, we're going to be receiving that index value, as you can see it here, over on the right-hand side of 2250. So if you're ever wondering, well within a given period of time, what -- where is price averaged out? Well this tool can help do some of the math for you. And again, this is something you really didn't have in the current charting software.

So one more drawing tool I want to mention here again, because it is, I would say, more commonly asked, at least judging from my sample size, in speaking

with the clients, and that is some of the Fibonacci drawing tools. So if you are a possibly a subscriber to the idea that the Fibonacci sequence can be applied to technical analysis and price analysis on your charts, you're going to like that we've got a wide variety of Fibonacci drawing tools. We've got some of the familiar ones that you might have already seen on the current, for example, the Active Trader Pro chart, such as the Fibonacci retracement, the time zone, but we also have the projection, fan, and arc. I'm just going to stick with, again, the -- to try to reach the largest audience here, some of the more commonly requested ones, by clicking on Fibonacci retracement, very similar to the other drawing tools, I can left-click to start our line, right-click to end our line, and really anchor it on our chart. And what I think is nice about this new update to the Fibonacci retracement is that we not only have the retracement values, we also have the extensions. So we're getting the general 32, 61.8, within this initial range. But we're also getting 138.2, and negative 38.2. So we're getting both sides, both the extensions and the retracements.

Now I know for some of you, maybe you've never heard of Fibonacci, or you're not familiar with it. These values are input based on that Fibonacci sequence. Some folks know it as the Golden Ratio. But again, I'm going to need to stop it at there, even though I could start going for another, right, hour on Fibonacci alone, we definitely have a lot to show everyone today. And this

is, I would say, kind of the theme about today's webinar, we're kind of going to just give you a little bit of a taste of what we have to offer illustrates some of the changes in some of the new indicators and drawing tools, and then from there I think we can leave you to explore some of these indicators and find what could be helpful and relevant for your trading.

But Jon, I'd say it's about time to get into some of the indicators. I think this is what many of you are here for, what indicators do we have here, I've been waiting for a specific indicator, do you have it? Well let's go ahead and take a, kind of a little dive into what we have in our new charting software.

**Jonathan Lord:** Yup, absolutely, do appreciate that. Yeah, the drawing tool is just embarrassment of riches, so many things we have available to us, it's going to take a little bit of work to run through them all, to get experience with them, and you know, to your point, we run an hour-long session just specifically on these Fibonacci retracements, right? We're not spending an hour today on each of these indicators, right? And that's, again, they're -- we're not going to be able to master them in the short introductions, we're going to just try to give you the lay of the land to get an idea of what it is, how we can use that, how we can add it to our charts, and then again, from there we need to, again, choose and dive in further, right? And that's part of what we do here on the



desk, right? We try to instruct, and educate, and we're happy to, that there are, continue to be people who want to learn more and more about these ideas and concepts.

So let's dive into another area of the indicators, uh, this would be another whole tab here, right, I've changed over to QQQ in this instance. I'm going to do a couple little things here though first. I want to, of course, set up what we're going to be talking about, in terms of trend. So a trend, if you're not familiar, trend is your friend. (laughs) There's all these great aphorisms that come into technical analysis, the idea is that we do know, markets do trend. They trend on different levels, they trend on different timeframes, we're going to come back to that here shortly with another indicator about how those timeframes might interact. But what we're trying to do, as we see a lot of noise here on this chart, on QQQ, right? The bottom line in terms of trend is, well, we're starting in the bottom left, we're ending on the top right, that must mean that just by pure mathematics, that the uptrend, it is uptrending, things are moving higher. And you have higher highs that are attempting to, again, continue. Now we're going to be attempting to also, in terms of trend, find out when, the aphorism goes that when it bends, so when does the trend bend, and when will it end? Lots of, sound like Dr. Seuss. But this is what

we're going to be attempting to do here with these trend indicators, right? A lot of those drawing tools as well will come in.

So I want to just, of course, talk to you about you do want to at least know where the moving averages are, right? So all of that activity that's happening on that chart, all that chaos that's happening, I'm going to scroll down just to kind of show you how many indicators we do have. Remember, I just, I'm always amazed at the creativity, of course, with some of the naming on these, creativity with how many things are able to be used just with what's on a chart, right, which is price, volume, and time, essentially, when that did occur. But moving averages, you'll see here, if you didn't see your moving average on the list, it's because it's kind of been an interesting spot, they hit moving average, and now you get to adjust, you can choose your period, you can choose your field, which would be if it's, you're basing that off of a certain number here, in terms -- most people will utilize the close as the most important number, where did we end the day at? We do have additional long list of types here of indicators of moving averages, so this is where you would try to find your list. Of course the EMAs, or exponential moving averages, that's simple moving averages. These we have weighted ones, we got the Wells Wilder, the founder of the RSI, or relative strength index, his calculation will be here as well.

So again, nice little ability to do that, and add some offsets, we'll get back to offsets here shortly, too, when we talk about another indicator that follows trend. But just wanted to add this on as just a quick view, of course we see the moving average shows up here, and our inputs, the 50, we have that on the close, and it is a simple moving average. We can see that we now have, again, that same concept, bottom left, top right, you see it's an uptrending, we do see periods where it may have curled over a little bit, but we're seeing that trend has continued from, to move higher on this one-year chart, as we zoom out, we can again, see additional levels of this, right, over time. Try to find hey, when did trend, again, turn downward? Well it's a little tough to find on this one, right? But I just wanted to at least show this basic indicator of understanding how price moves, right? And the, how they will react will be based off of how much that input, is a 50-day moving average, will be more sensitive than a 200-day moving average, versus further and further out, as we move along.

So do want to add that onto that concept. I'm going to go back to the displays again, yeah, I'm kind of switching it up on you here, right? We were talking about indicators, but we're going to go to displays, because I did want to show this, this is the Heikin-Ashi, or Heikin-Ashi, chart. It's a chart type under the

display. And you can see here, again, a lot of it kind of looks in that same method, I'm going to zoom in a little bit, so we get a very clear picture.

Because it should look a little different, right? That noise that we were seeing earlier starts to erode, right? We start to see a little bit more clear and present here, the trending of price. And so that's what this thing is doing, it's basically taking, and Heikin essentially means average, and then have the Ashi side of that, which is pace, right? So they, the great naming, the way that they do these, right?

So incredible way of showing, and smoothing out, and showing hey look, when we are seeing bars in this method, right, look at how you zoom in, and that's just a nice little zoom in, or roll of my mouse that I'm able to just get a quick, easier picture, instead of having to use a zoom button and drag, I'm able to just dive right in. But we can see here how, number one, of course, price again does continue to trend, we see our 50-day moving average still here as it's being respected. Well what happened is, we see all this breakout, and we saw these big green bars show up. And so, I'm not going to get into the calculation, that would take about 10 minutes on its own just in terms of how it works, but that average part of it is going back and looking at the prior bar, utilizing highs and lows, going in and then trying to smooth that out, so that we get trend. So what we really want to see here is big green bars for, of

course, on the long side of this, right? We want to see these big green bars moving, we want to avoid any bottom tails. So if you're familiar with, or wick, as we would also call it. Familiar with these candlestick charts, green means that it was a, had moved higher up on the, up above that. So we have to have movement in price. These, what's called a doji candle, or essentially an uncertainty candle, right? We are looking at it from this perspective, we have a upper and lower wick here on this bar, it's going to be kind of hard to see here, I'm going to try to find, continue to zoom that in so we can get a picture of it. It shows a little bit of uncertainty, a little bit of digestion, but we can see that they continue to have large, green bars moving, and moving, and moving, and then eventually we do get a little bit of a smaller bar, we then see another, what's called a Doji, or spinning top, this one. And then we can start to see that again. We're starting to move a little bit down, we see a big red bar occur, is that the start of a new trend? Is this, was this a full pullback? Well, and we can see here, and the benefit of hindsight, again, we're going to be trying to utilize this, we can see that trend did resume for some time, but again, another Doji candle, large upper wick here that we're starting to see, which meant again, some weakness occurred.

So we can utilize this, again, what we're trying to do is these tradeoffs with terms of trend, right? We're trying to trade off being accurate, which again, if

we're too accurate, if we wait too long, we miss a lot of the trend, we miss a lot of the price movement. With that speed, that give and take, that tradeoff that we're going to get with price.

And so again, we can utilize this, we can utilize something like a Heikin-Ashi to help us to become better traders by taking out all of that noise, and allowing us to then see much more clearly upward and downward trending prices.

Now again, we often also will talk about trading with the trend, it can be enticing to try to capitalize on all of these sort of what we call saw teeth, right? Pullbacks, countertrend moves, it can definitely be enticing to do that, again, it's all up to the trader, certainly money is there to be made on all of these trades if you're being tactical, in terms of how you trade, just understand the risks and rewards that are available to you here to make sure that you understand how price will move.

So I want to go back a little bit here, I'm going to show another indicator.

Again, we could spend a whole hour on these type of charts. But excited to show this one, just because it's kind of funny, it pulls up immediately when you go in, I'm going to go back to my normal candlestick here. Tre, who introduced us here, he is from Florida, in the Jacksonville area, so he's probably well familiar with the namesake here, the alligator-type moving

average. You're going to see some interesting things that come up, we got the jaw, the teeth, and the lips, right? So we talked about the reactivity of moving averages, what these are doing is, it's -- and giving a great visualization, if there are any teachers there in middle school, elementary school teachers, you're probably used to using these type of things to understand price, or understand how to give a concept. So we're going to show you a couple ways to do this, I'm actually going to use a different chart here as well, just because I want to get a really good example of what these alligators do.

But you can see the periods here, these are smooth moving averages, so again that tradeoff, we're going to wait, it's going to wait a little bit longer, it's going to smooth it a little bit more, in order to confirm that we have a new trend, and then we're going to have as well some offset to kind of move that forward to also get us another nice picture of that. But want to go ahead and apply and actually, I'm going to go back up, I want to use an interesting, a different example here with Amazon, just because we had -- Amazon kind of had two different types of charts here recently. So let me go back here, I'm going to go in, I'm going to undo that volume, I'm going to go back and add it again, my apologies here. Alligator, there we go. And we're going to hit apply, I want to

look at this on a weekly, you know, two years, so -- because I've got two different types of things going on here with Amazon, right?

So if we're using that alligator imagery, and we talked about these types of moving average, how they interact, confusion in terms of price versus everything clarity, in terms of stacking of these moving averages, so we have the example of an alligator that is sleeping here, right? He's quiet, he's dormant, he's waiting, we have the -- again, great visualization, this upward stacking, right, the shortest term moving average was the first to move, the middle term moving average took a little bit longer, and then the longer term moving average, again, kind of trends and drags along with it, right? It just kind of trends, takes a little bit longer for these higher prices to react here.

So this is an interesting indicator in terms of seeing trend, when that opens up, when that mouth opens for feeding, and then if we've entered into a nice -- again, out of that feeding zone, we've been a little bit quiet here, right? We can see that moving averages don't exactly confirm that hey, we're starting to trend here, we see little moments where things start to get moving out, but what this indicator does, and what Bill Williams, who created this many years ago, and his technical indicators, what he's trying to do is that same concept as the Heikin-Ashi. Where do we start to trend, can we capitalize on it, and can



we find out when trend starts to turn over? So you can use this as well for certain things like when we might see that shorter term moving average cross over, like in a moving average system, different moving averages, is everything confirming, or do we have confusion in terms of the moving averages over time? So that's all we're really looking for, right? Again, a great name, alligator, it's right there, you go to indicators, it's on that top of the list, and so I hope some of you guys might have been piqued by that as well, and definitely again, interesting little thing that we can utilize, and we can do this with other things, but definitely a fascinating way to visualize trend, and visualize these lack of trend as well there.

So do have, again, some other things we wanted to look at, because we want to pair this, right, if we're at the restaurant, we want to pair our trend indicator with something, a nice white wine, maybe, or something to that effect, so we're going to bring in the momentum indicators on top of these separate trend indicators to help us to find out maybe when we might see things start to fade off in terms of momentum, or start to heat up as well. So James, you're going to be the one walking us through some of these other indicators here.

**James Savage:** Absolutely. So another pillar of technical analysis, everyone, is momentum. All right? So we, we spent some time looking at price, looking at

some of the drawing tools that we can help analyze and digest what the price action is telling us. Jon was just showing us some of the different trend indicators that we have. Now I'm just going to spend some time just going over, I think, two momentum indicators. And yes, don't worry, we still have some of the indicators that you are very likely familiar with. For example, RSI probably one of the most commonly requested momentum indicator, yes, it is still there. Another commonly requested indicator, the moving average convergent divergence, yes we still have that, among a variety of new momentum indicators. I wanted to show really two indicators, and I think they might be a good mix of what you might be a little familiar with, and what might be something completely new to you.

So there is one that's referred to as the price momentum oscillator. And this might have a few similarities to the MACD in the creation of it. You're going to see a primary momentum line, or the price momentum oscillator line. And an additional signal line. Again, you might recall that the MACD has a signal line, and very similarly, it does have a signal line that's based on an exponential moving average. And again, the calculations aren't really, I'd say, what's important to take away from the webinar today, it's more just the illustration of some of these new indicators that we have.

I'm going to go ahead and apply it to my chart. It is going to add it as an understudy, slightly different than what Jon was showing up, with an overlay indicator. And we are looking at a security I bet many of you are familiar with, AAPL, Apple. And just like the MACD, you'll notice that there are some similarities, there is a primary line, which is the, our black line, and our signal line, which is our red line. Now, momentum indicators are typically going to be leading indicators, which means that the data it is providing is corresponding with some future price action. Now, that doesn't necessarily mean it's predicting the future, none of these indicators can predict the future, they will not be able to tell us what will or won't happen. But we can view some of these indicators, especially momentum indicators, almost like giving us some, some warning signs.

Now this indicator helps us measure the direction of trend, and the acceleration of price. We can see that when price is moving downward, we can see this back in March of last year, as well as in September of last year, price was moving downward, and our momentum indicator was moving downward. But there are also occurrences where you might see price start to level out, and if we actually look as we go back to October, we see a horizontal type of action, yet price is moving in a downward movement. And, and we can see this because the acceleration, we can see that when this indicator

starts to flatten, that is when price is starting to, we can say, lose some of that momentum, or some of that, that steam behind it. So just like our MACD indicator, and just like many momentum indicators, we might want to keep an eye out for divergences between what price is doing, and the direction and strength of the momentum.

So we, what do I mean by divergences? Well, possibly we can zoom in a little bit earlier, try to capture a little more current price action, and take a look. Back in this period of time, we can see price moving up slightly. We see over this period of time, there are higher highs in the period before it. But what was our black line doing? Our momentum line doing? It was moving in a downward direction. So, a divergence is when we're exhibiting, again, the difference in direction between price and momentum. And this isn't necessarily a buy or sell signal, but it can be a warning sign, maybe a bullish signal, or a bearish signal is the terms that I prefer to use, that could keep you on edge possibly for an adjustment to your risk or maybe adjusting your exit plan on an underlying security.

Now I wanted to stop at this point, because there is another indicator that I really want to cover, because I think it's very different from what we usually cover. Now, many indicators, they are what we call fractal, they can be used in

a variety of timeframes. They can be used on an intraday basis for you day traders out there, they can even be used on a longer term, say daily or even weekly frequency. Now another indicator that was designed specifically for major market indices, it was introduced in the 1960s, so it's a fairly old indicator, and again, designed for identifying long-term opportunities on major indices. And that is the Coppock curve. I'm going to go ahead and type it in, as opposed to scrolling through the list there. I'm going to keep the default parameters. Of course, we can adjust them, and I'm going to expand this and make it a little bit larger.

What we're looking at on our chart is now the S&P 500, SPX, and we actually have it on a max frequency, so we're going back oh, roughly 25, 26 years, and we have our frequency on a monthly. Now this indicator is meant to be looked over periods of years, maybe even decades, which I think is a very different type of indicator than what the majority of folks use indicators for. So this could be used for some of you investors out there that just want to have an idea what maybe this mathematical calculation is telling us. And it's a very simple indicator. When we're above zero, this is viewed as a, kind of a holding signal, or a signal where you can, for a long-term investor, right, stay the course. When we are below the zero point, this could be viewed as a bearish signal. Possibly make an adjustment to your allocation.

And what do we notice over the past, again, 25, 26 years here? How many times has it crossed the zero line? Only a few times, right? We can see back in about 2001, we crossed the zero, so this again could be viewed as a bearish signal. And then according to the indicator, again a subscriber to this calculation, an investor could have either got back into a position, or maybe added to their allocation for say, stocks or the S&P 500. They could have done that at a point in around 2003, and we saw that again kind of during that great financial crisis period back in 2008, gave us our bearish signal. And it wasn't even until the beginning of 2010, say late 2009 that it gave us our signal to get back into the market.

Now in those kind of cherrypicked examples here, you could have found that hey, these could have been valid bullish and bearish signals. But of course, this is not predicting the future, it is not infallible, it can give us signals that might not make sense. Let's take a look at the 2006 period. You can sometimes see this type of whipsaw action that oscillators can certainly produce, where we were exiting or crossing a line, only to quickly cross it in the other direction. So here we can see back in 2006, it gave a bearish signal, and shortly after, gave a bullish signal to a long-term investor.

For the most part, as you've noticed, the direction of this line isn't necessarily important, it was originally intended to be observing the zero line crossing, and then from there, making your adjustments as you see fit. So again, kind of a unique indicator, we usually don't show these types of indicators that I think are primarily geared towards longer term investors, hence why I thought this might be an interesting one to show.

Now even though I've only showed two momentum indicators today, there are quite a few more, some of the ones that you're familiar with, as well as a few more newer ones. However, Jon, in these kind of final few minutes, I think we can't delay it any more, probably if you read the main description, some of these volume indicators have been some of the most heavily requested indicators in my years assisting clients at Fidelity, so absolutely I think we need to show some of these new volume indicators that I think a lot of you are going to be excited about, because I know, speaking with many clients, it has been very heavily requested.

**Jonathan Lord:** Absolutely, we definitely want to be showing these things. And again, volume sometimes gets put to the wayside, right? It is a big part of trades, I do love that you showed this Coppock curve, because again, just this 30-year chart, this incredibly long-term chart, and we're going to tap into

something here that is going to be incredibly short-term, in terms of showing it, and then we'll dive into some other things, as well, with the volume in play here. But let's go back to my screen here. I'm going to talk about a couple of things. I've actually changed over to Zoom here, wanted to start with. But one of our most requested indicators, of course, was the volume weighted average price, pronounced as VWAP, as I understand it. (laughs) Definitely something though that we need to first look at is, okay, understanding volume, right? Volume is important to the chart, obviously price is what pays us at the end of the day, right? We can't trade specifically on volume, but it tells us a lot about simplifying demand zones, we're going to show you some other ways to visualize that, as well.

But again, this is Zoom from a one-year chart. And we normally will see volume, of course, under price here, so we get an idea of well, this is a big volume day, right? And we can see the candle, obviously, reflects that here. We showed the volume chart earlier under bar charts as well, the candlestick chart, excuse me.

So let's take a look at another way to do this. We do need to be on a very short-term, at least under daily frequency, right? I'm going to actually just use a one-minute, just so we get the full amount of data here as we're pulling



through. So we can see here Zoom today, what we are going to look for, of course, is, under indicators, you can scroll down to the VWAP. I tend to use this more as almost like a Bollinger band, right? So you have this average price that's coming through that is weighted by volume, so there's a key way, I'll get into some of that calculation here, but we can often use this from a standard deviation standpoint, or just show hey look, kind of like a Bollinger band maybe, where we have a kind of a -- rings around it, right? So we have this band that has, is showing ranges. So I'm going to show this just to start out. We're going to talk about a couple things specifically with just VWAP itself.

Number one, it is utilizing dollar volume based on the dollar shares, it is only for that day. This specific version of it, right? So it is only showing you as of that day, as volume comes in, and we know that volume tends to have this U-shape. A lot of volume in the morning, a lot of volume in the evening here as we move into the close. So what this is doing is it's saying hey, we're weighting towards where was the volume trading, and this helps us to understand, again, the trend of price, helps us to understand where stakeholders, in terms of that day, are viewing or putting their, their average, or their pricing here, right? This comes back to a lot of indicators will utilize this, a lot of traders, money market makers, use this as sort of a threshold or idea of overbought or oversold areas, how are there -- when they're putting in

their trades, if they have a million shares they need to put through on Zoom today, they will use this as sort of their baseline, are they getting close to that average price? Are they paying too much, are they buying it for too much, selling it for too little, that type of idea here.

So we could see that that accumulates throughout the day, and you'll often then see, again, some of these movements, it's getting more and more data throughout the day, and you can see that it's actually, it is respecting this sort of deviation here, right? If we zoom out a little bit, we can go to further ones, we can, of course, move our chart this way. Did want to again show this as well, there is ability to change that scaling just by clicking and dragging here.

So we do want to at least respect that here. Let's go back maybe to a little bit further out, to a five-day. And again, you can kind of get that feeling for, sometimes this acts as a magnet versus price, sometimes you can see that again, people are -- traders are being more aggressive when attempting to sell, it's riding this lower band the same way. We get then other days where we can get a feel for where price is, again, trending towards sideways action all day long, this thing could not get away from the volume weighting average price, that was yesterday.

So again, usually used for a day trade perspective. That was great symmetry there, we went from 30 years down to looking at these charts for (laughs) one day, right? So, an interesting, to say the least, right, a lot of requests for -- a lot of interest in terms of, if you are trading that day, or you're choosing, or you're looking for entries and exits, again, a lot of people will use this, you can just see how this works, right, how that, you get that immediate, you know, volatility at the beginning of the day, because again, you don't have a whole lot of shares. But as you move through the day, you start to get that feeling for here is where the volume and where that money is and stakeholders are putting their money towards on that day.

So utilizing Zoom here, again, just an interesting aspect, wanted to -- well we're going to go out a little further though, I'm going to show you another aspect of volume weighting average price. That same concept, right, we mentioned earlier that we got dollar volume, right? So there's dollar volume versus the share volume, and our understanding of that calculation will help us to understand where the stakeholders, or where supply and demand zones may be. And that's what we're going to use with this other tool, which is the anchored VWAP. We're taking that same concept, right? So a trade that happens, if we have 10 shares that go off at one price, and 10,000 at another

price, where do you think usually the actual supply and demand zones may actually start to come through?

It's going to be an interesting, again, area that we're going to want to keep an eye on, and so we have a way to do that. I'm actually going to use, again, Zoom, because of, I really like the way that this chart, of course, has basically a tale of two areas, right? We had really, prior to 2020, it's moved higher, this really parabolic move up to the, the high here, all the way up to the five hundreds, and then we've had this sort of slower bleeding off of price over time. And I want to show some of these zones, kind of how this would work in terms of the anchored VWAP, in this case.

So I know we've got a little bit of time left here, do want to show just a -- again, showing how we can anchor this, what we're doing is, we're taking off the selector here, and we're just going to show it as a volume weighted average price, based on that two-year chart. So we're starting it from two years, it's going to default to whatever the length of the chart is that you have there. So it's starting at the beginning of that chart, it's starting at this level, we can see a lot of volume here on this lower end of the spectrum, right, until we get to some, again, spikes higher, really starts moving higher here, we can see that reflected, right?

What ends up happening is, well, it's gotten pretty far away from that, that volume weighted average price here. It's gotten pretty far away from where those initial traders were. The average trader is really happy with themselves at this point, correct? So as it moves that way, and we can actually view that by, again, two and three standard deviations, in the same way we just did with, when we tracked this price with Bollinger bands, how far away have we gotten? Well we've gotten past that two standard deviation move. Just an interesting way to, again, measure price from a fixed point.

You might also see this used for IPOs, again, IPOs might not have 200 days of trading, right? So we want to be, how would you utilize that understanding of a moving average? Well you could use a volume-weighted average price in order to start it, or anchor it at that IPO date. Maybe we want to anchor it to, again, a peak, or a big gap in price. You can often see that and utilize that, and find these other ways that will happen, where it will come down from a top level, right?

So again, we can utilize this to understand what the average investor is doing, as we see what ends up happening with Zoom, again, we have the benefit of hindsight now, but that created a key level here, right? We can certainly see

that, I'm going to zoom it a little bit more, and drag this again to the right. And we're going to get another picture of this, it's still anchored to that original date, we can see here, of two years ago. We can see again, the same way that moving averages often do, they create these support and resistance zones, and it really does respect, we get this gap down right to that zone, we get the breakdown, and we get what's a common thing that we would often see is this retest on that value before price, again, decides well, now we have the -- everybody, or excuse me, not everybody, but the average trader from that original 2020 move now would be showing, based on volume, based on the actual dollars traded, would be underwater at this point. We also oftentimes will see that use for maybe a year to date type transaction, you could peg to, or anchor it to that year to date. Again, seeing what those traders are feeling, in terms of hey, has this thing been moved, or are most of the traders above or below that price?

An additional way we could view this, an additional way to view volume as well, I did want to hit before, I know we're running up close to time, and we don't, we hit a lot of indicators here, so again, really appreciate you guys sticking with me here, but one more that we do actually, we do offer on Active Trader Pro, but I wanted to show it, it's a different area now, that's a different part of this thing, it's going to be called the volume profile, and again, the

same concepts here. Volume in a different way, we've got volume below, we've got volume above. It's going to show us these things that are called shelves, essentially that's how I refer to them, I've heard them referred to as, it shows us areas where again, stakeholders within an area of price, and remember, there are people trading this, right? Traders that are looking at this, and that are in this zone, we can see a clear shelf here, and we can, what ends up happening is that these areas often act as support and resistance, in the same way we draw anything here, right? Or draw any type of support and resistance on the chart, we get this reinforced by, yes, there's volume here. And maybe if some of these net buyers in this range might be just happy to get out at a break even as the price comes up in that same way, we can see that a lot of supply may be above, or a lot of demand may be below a certain price, may create some of those shelves, may support or resist that stock price. We also see areas of, where there's very low volume that could be pockets, or areas that can get filled very quickly.

So again, a nice little thing here as we zoom, you can see how, look at this, as it moves across the zoom, of course, as we move back and forth, we see that data, again, flowing incredibly well, incredibly quick, just love the functionality, love the speed of this process with regards to the tool. I do want to at least, again, kick it over to you James, maybe one more time, see if there's any last

thoughts you had here, again, excited about these indicators, excited to see them, the clients that we've been talking to forever actually getting a chance to utilize these, some of these new indicators for themselves.

**James Savage:** Yeah, there was one final indicator that I really wanted to quickly show today. Again, it's based on really what many clients have asked over the years. And this is in that volatility pillar. Now, one indicator that is, again, new, that I think many of you might be a little familiar with, especially if you have been maybe comparing stocks against other stocks, or a major indice, is this idea of beta. So beta is a measure of an individual stock compared to another underlying, more commonly used, the index, or an ETF, it's meant to really give us an idea how volatile some stock is, based on the market. And what we're looking at right now, you can see in the background here is a chart of Microsoft, another stock I'm sure many of you have heard about. And we're going to just apply the default comparison symbol, which is SPY, which is an ETF that's designed to track the S&P 500, it's oftentimes viewed as a proxy for the overall market.

So by going ahead and clicking apply, it will add another understudy, I'm going to go ahead and expand this to make it a little easier to see. We're getting an idea of the change in volatility of Microsoft, related to the S&P 500.



Again, through the proxy of our ETF, SPY. Now for any of you that aren't too familiar with this, there's a key point, and that is this one level. With a beta of one, it's telling us that, in this case, Microsoft has a strong correlation to the S&P 500. If it's less than one, it means it's less volatile than the overall market. If it is greater than one, it means it is more volatile than the overall market. And if we see a number such as a 1.3, for example, this is generally accepted to mean that it's about 30 percent greater. So we could say about 30 percent more volatile than the underlying index that you're comparing it to.

And this shows us how that beta has changed in time over the past one year, between in this case Microsoft and our comparison symbol, which is SPY, the ETF based on, or designed to track the S&P 500. So kind of a neat tool for those folks that like to measure volatility, and maybe want to compare it against either another indice, or another ETF.

Now in this final one minute, I quickly took a look at some of the comments here, many of you asked well, how do we get back here again? What's the refresher? This is great, I can see the chart, I see all the indicators, but how do we access this? So it might have been what I like to say hiding in plain site. If you go ahead and research a stock, you can just do this up at the very top, AAPL, for example, we're looking at Apple, if you're looking at a page similar

to this, take note at the top right, you're going to see "use new research," it's a slider. By clicking on this, it will then update your browser to the new stock research page. From here, it's simply as easy as scrolling down, and finding your Chart Plus. By clicking on Chart Plus, voila, just like that, it brings us back to the new chart that we've been examining today.

## END OF AUDIO FILE

Technical analysis focuses on market action; specifically, volume and price. Technical analysis is only one approach to analyzing stocks. When considering which stocks to buy or sell, you should use the approach that you're most comfortable with. As with all your investments, you must make your own determination as to whether an investment in any particular security or securities is right for you based on your investment objectives, risk tolerance, and financial situation. Past performance is no guarantee of future results.

Indexes are unmanaged. It is not possible to invest directly in an index.

Any screenshots, charts, or company trading symbols mentioned are provided for illustrative purposes only and should not be considered an offer to sell, a solicitation of an offer to buy, or a recommendation for the security.

Chart IQ, Chart Plus, and Fidelity Investments are independent entities and are not legally affiliated.

Fidelity Brokerage Services LLC, member NYSE, SIPC, 900 Salem Street, Smithfield, RI 02917.

© 2021 FMR LLC. All rights reserved.

1011188.1.0