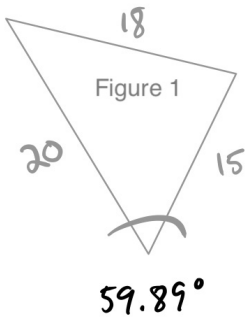
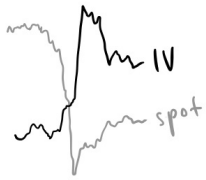
S&P 500 Weekly Forecast 4/4

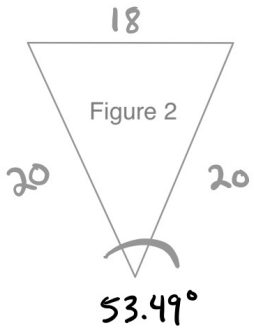
From: SqueezeMetrics <info@sqzme.co>
To: SqueezeMetrics <info@sqzme.co>
Subject: S&P 500 Weekly Forecast 4/4
Date: Sunday, April 04, 2021 8:59 PM
Size: 2.0 MB

Hey everyone,

For the past couple weeks, we've been poking at the idea of "Angle C." To start with, we measured 1-month past IVs (PIV), current 1-month IVs (IV), and 1-month realized volatility (RV), and we compared them all at once by pretending to represent the numbers as the sides of a triangle. "Angle C" was the angle opposite ("observing") realized volatility. Angle C would get bigger and smaller as RV got bigger and smaller, relative to past and present IVs.



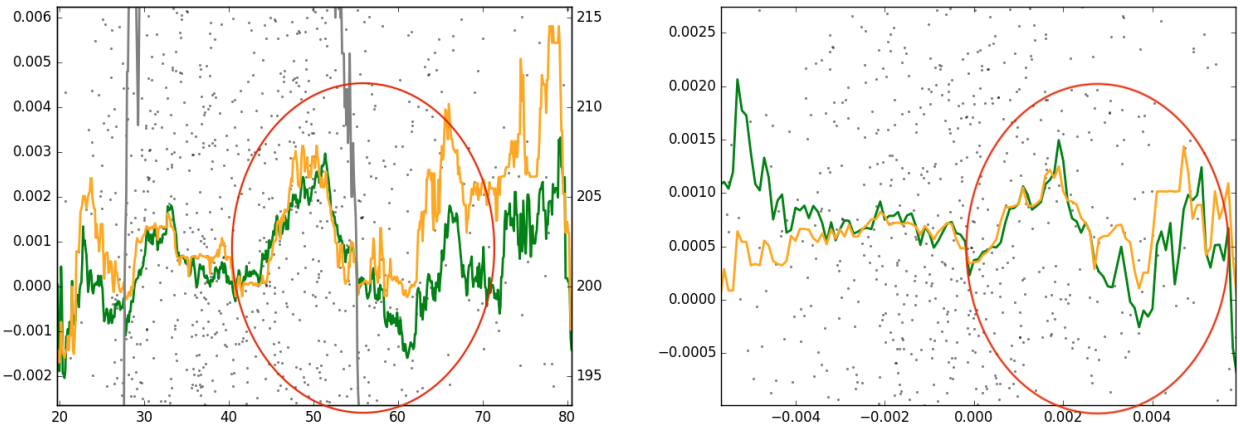




As if by some dark magic, we found that when Angle C is ~60 degrees (implying a perfectly equilateral triangle), S&P 500 returns suffer the next day. We *thought* we'd find something like this, so *actually* finding it was a reason to continue.

In the following week, we tried to get more practical by looking for the same type of signal, but on a shorter timeframe, and in a tradable vol instrument. So, using UVXY (constant-maturity VIX futures), we performed a similar test, where the combined PnL of S&P 500 (RV) and vega-weighted UVXY (IV and PIV) was analyzed on a rolling 1-week (rather than 1-month) timeframe, looking for a similar signal.

The reason we wanted to look at VIX futures was because we made the assertion that VIX futures tie S&P 500 RV and IV together in a unique way, due to the institutional use of VIX futures and options (options on *implied* volatility) to manage the *realized* volatility of an S&P 500 portfolio. Thus, we would expect that -- to some extent --the fundamental idea of "Angle C" should be visible in the relationship between UVXY and the index.



The chart on the left is from two weeks ago (Angle C). The chart on the right is from last weekend (UVXY). Both are tracking 1-day subsequent SPX change. Higher mean (green) and median (orange) on the y-axis means SPX gains. Interestingly, where the data is most abundant and to the right of the central tendency of each dataset, they have very similar features. And that's despite these looking at different timeframes, despite them using entirely different units, despite them being two very different data sources (and UVXY being "impure"), and despite our making no attempt at tidying the charts.

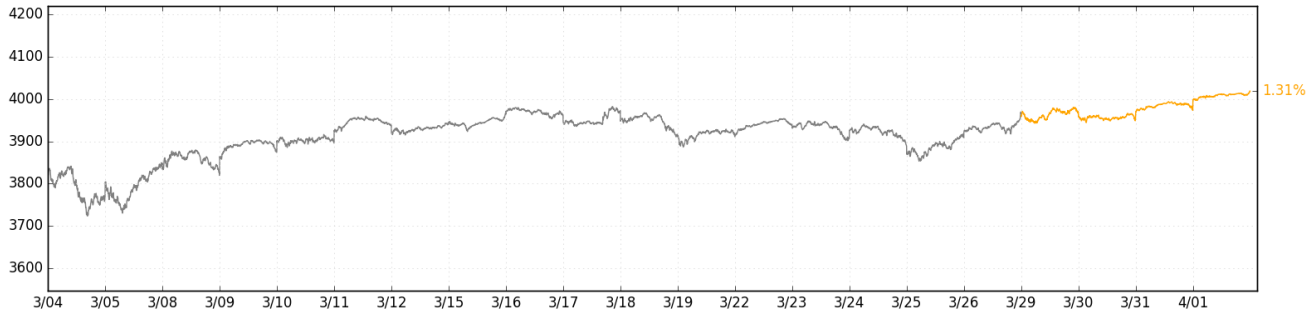
This was enough to satisfy our hunch, and to keep digging.

This time, though, we wanted to really zoom in, taking it down to an intraday timeframe, and see what we could find.

But first...

1. The holiday week
2. The week after
3. Under the microscope

The holiday week



Another great weak for Short VIX and Chill.

Only interesting thing worth noting is the lack of intraday volatility. If you recall the Tuesday morning note, the reason is (ironically) that near-term IVs went up:

> Monday's brief dip, brought on by fleeting fears of margin call contagion, brought near-term IVs back up

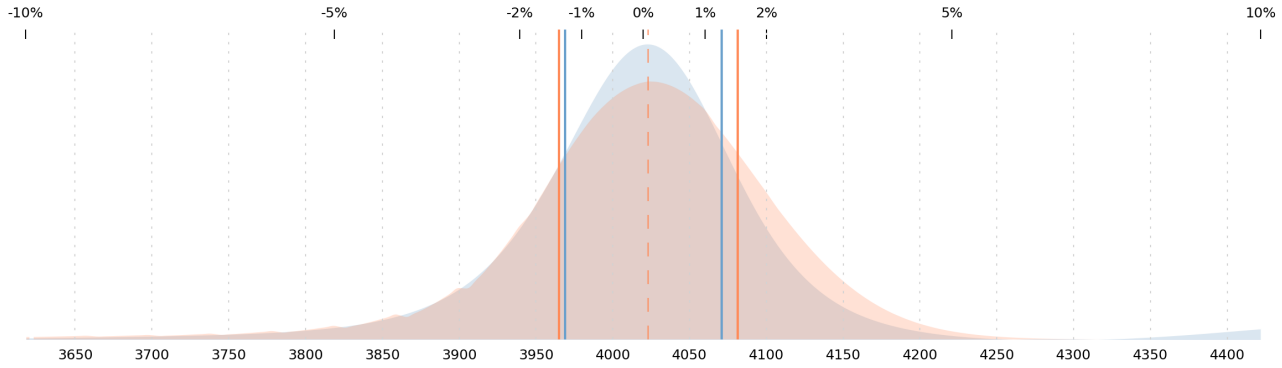
> a tad. According to the Probability Page, this brought market-implied probabilities back in line with what GEX+ was predicting, 'cause there's no longer an edge in being long near-term options.
>
> This actually adds some stability to SPX, and so we'd expect some slightly calmer intraday action than we've been seeing recently.

Our wee SPX 4050 call punt didn't work out, sadly. But, since there wasn't a Friday expiration, we actually bought for Monday. So... maybe there's still hope?

In any case, we'll be buying some more, because...

The week after

You'll note that the 1-week probability density comparison looks an awful lot like the last two weeks.



And yes, that means that very little has changed. It's still a compelling proposition to buy a tiny position in those low-probability OTM calls, and it's still un-appealing to do just about anything else except short some VIX futures.

Except... with the vanna-gamma ratio (VGR) at -3.36, it's going to be a lot harder for VIX to fall from here (last print 17.33). This compels us to rein in our short VIX position from a "normal" to a "small" size. But we'd be very happy to bring that position back to full strength on any quick spikes in vol, because net put delta (NPD) last printed -7.77, which suggests that the protective put-buying in SPX continues, and that really nasty vol spikes are, thus, very unlikely.

"Short vol of vol" has been the trade for several months now, with short VIX futures as the star trade. It's gone wonderfully. But with VIX now printing some numbers solidly below 20, we'll have to keep our eyes open for shifts in that dynamic. Is complacency about to slowly set in? Will the put-buyers start experiencing fatigue? We'll see. But for now, we're happy to keep selling those futures.

Buying Friday 4100 calls.

SuMo bands for Monday:

4004.76	4027.42	4050.08

Under the microscope

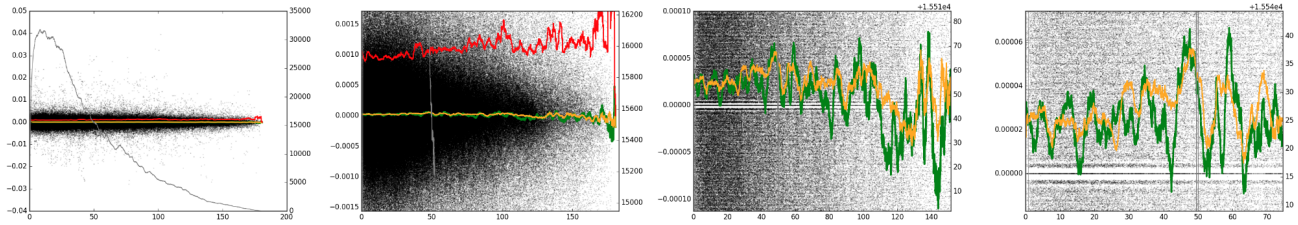
Today, we're going to keep it simple: We want to look at intraday SPX returns against an intraday measure of Angle C. This doesn't seem too promising, and we'll explain why (but we definitely have to try it anyway).

[If you don't want to be wildly disappointed, just stop reading now.]

Our thesis about why "60 degrees" matters to the market is predicated on *customer* behavior, not dealer behavior. E.g., if a customer buys some volatility (e.g., VIX calls) as a bet on an increase in vol, he thinks vol is too cheap, and he probably thinks it's too cheap because IVs are low. If, over the course of several days, RVs "catch up" to IVs, or if IVs rise, that position should either gain value or lose its luster -- and that should happen around when Angle C is 60 degrees.

But this dynamic isn't playing out on a 15-minute timeframe. Intraday, the folks who are at work buying and selling volatility are mostly arbitrageurs, balancing vol books and hedging their delta and vega. To these folks, the difference between the last month of IVs and 1-month RV isn't really something that... matters. Their hedging is on a much shorter timeframe, and to the extent that it's all delta-neutral, it really shouldn't do much to SPX.

So we *were* a tad surprised to see that, on intraday data from 2016 to present, there's a bullish hump in median (orange) returns that begins around where Angle C is 30 degrees (maybe more like 29), and extends to 50. And that the returns between 0 and 30 are clearly lower (zooming in on the data, from left to right).



Interesting... could there be something here?

[There's not, though. We already told you that.]

Worth mentioning now is the methodology of this particular "Angle C." It's using yesterday's closing 1-month ATM IV (computed from our intraday data) as prior IV (PIV), today's real-time 1-month ATM IV as current IV (IV), and yesterday's SPX close to the current spot price (expressed in volatility) as realized vol (RV). It then tests over 15-minute windows intraday.

Also worth mentioning is that an Angle C of 29 degrees (where returns start picking up) would be perfectly analogous to a situation where yesterday's closing IV was, say, 20 vol, and where today's realized vol is 10 (0.50 standard deviations of implied). And that an Angle C of 0–29 would be analogous to 0.00 to 0.50 standard deviations. What's more, that fleeting bullish hump at around 58 degrees? That would be analogous to a situation where the day's realized vol is *nearly* what was implied (just short of 1.00 standard deviations).

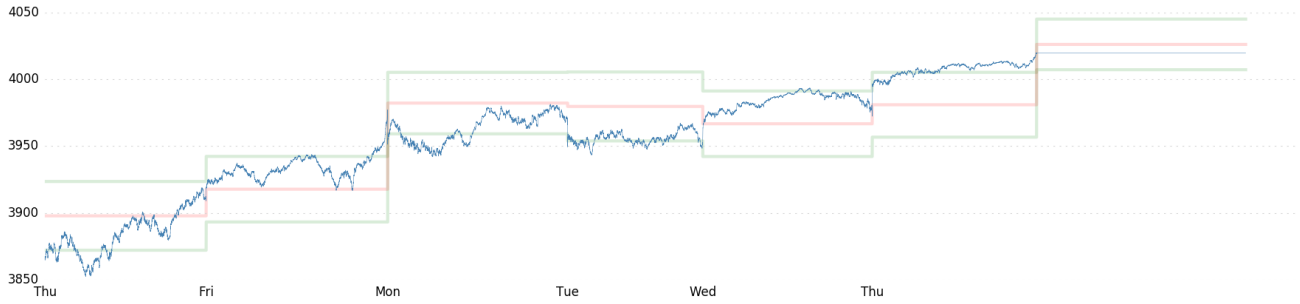
Does that seem familiar? 0.50 and 1.00 standard deviations from yesterday's close being short-term bullish for SPX, on a 15-minute timeframe? And the stuff closer to 0.00 being lackluster? Yeah. This is very familiar.

What we're seeing right now is just a noisy version of SuMo bands.

[If you look closely at the plot, you'll even see some especially bad mean (green) returns around 15 degrees. The bearish SuMo "Mid" band is a 0.25 standard deviation move, which would imply a... 14.36-degree Angle C. Probably the same guy!]

So, we zoomed in on Angle C and all we saw was SuMo.

That's pretty interesting, actually....



Let's zoom back *out* next weekend.

Enjoy the week!

The SqueezeMetrics Team
