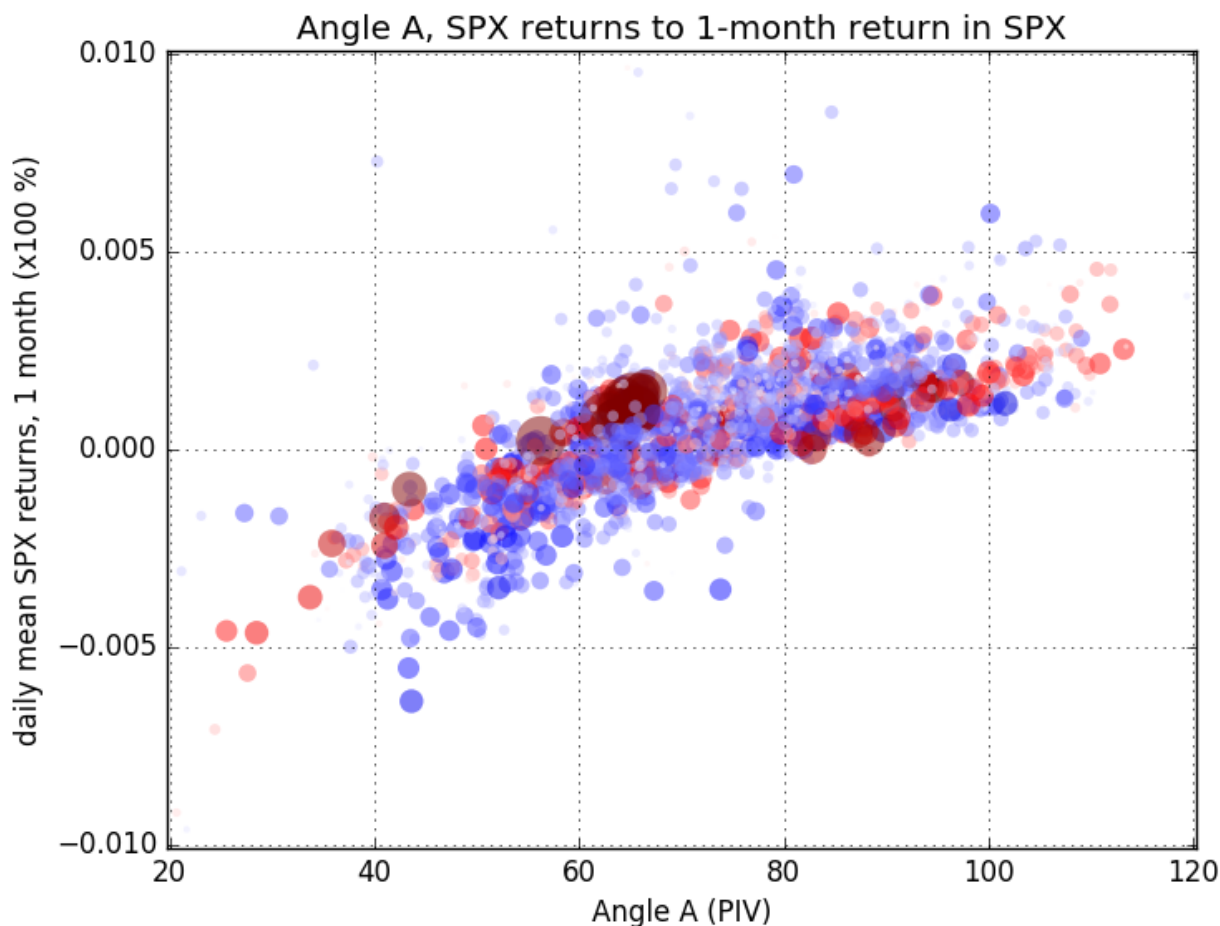


S&P 500 Weekly Forecast 5/2

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Subject: S&P 500 Weekly Forecast 5/2
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Hey everyone,

Last weekend, we left off with this chart.



We found this really compelling. Why? Well, red dots are data points where SPX had a loss over the next month. The bigger and redder, the more significant the loss (risk-adjusted). If we can find a pattern (any pattern!) to where the big red dots show up, then we may have a system for avoiding the gnarliest S&P 500 drawdowns and leveraging the rest -- which is what everyone everywhere wants, because SPX is the ultra-liquid, no-limit table of global markets, and predictably collecting a few extra basis points on top of market beta is a big deal or something.

So the fact that all the big red dots, little light blue dots, and big dark blue dots seem to be clustered in particular places on these two axes is pretty cool already. Especially because our "secret sauce" here (Angle

A) is actually a very simple creature (an angle of a triangle made from common, cheap data). So we're optimistic that, on this simple three-dimensional plot ($x = \text{Angle A}$; $y = \text{1-month SPX returns}$; $z = \text{1-month future SPX returns}$), we're showing something important. And that's thanks to Angle A, which is looking at "volatility" from a new, um, *angle*.

Hold on to your protractors.

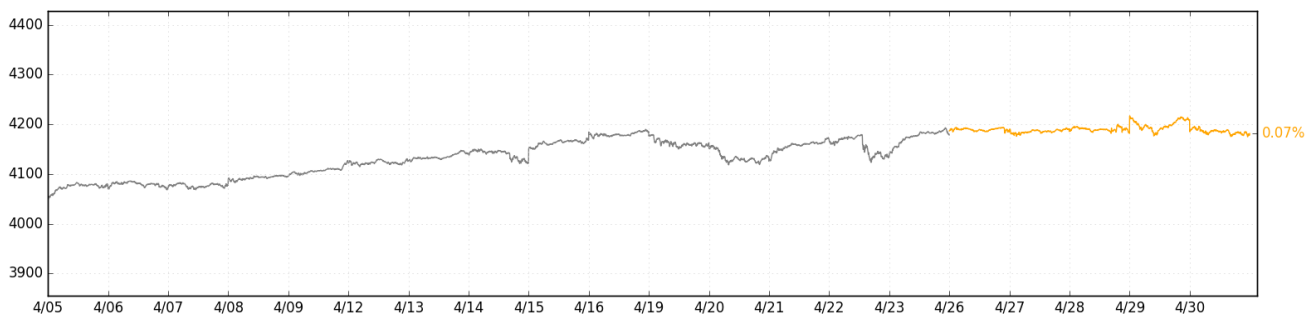
Now -- to see if we can make this even better -- let's add *one more dimension* to that plot.

But first...

1. Sell
2. In May
3. And Go... Add an Axis to the Chart

Sell

Selling, in all its forms, has worked for the past couple weeks. Selling the S&P 500 has worked: Usually it's a losing bet, but it's been flat (which is a win, basically). Selling VIX futures has done the same thing -- flat. Selling an SPX straddle, meanwhile, has performed admirably: The index hasn't moved an inch. The short straddle has cleaned up.



Although people generally don't express things this way, we find it interesting: What if you'd "sold" everything, all at once? Sold straddles (gamma), Sold VIX (vega), Sold SPX (delta). This would have actually worked very nicely over the past two weeks, as the short gamma contributed to PnL and the short vega and delta -- well -- didn't interfere. Everyone (including us) uses the phrase "short vol" as a catch-all term for any number of concepts and strategies, but when it gets down to it, it feels like this -- selling all of these things at once -- is a pretty useful way to express "short vol."

One reason to express things this way is that our "vol triangle" naturally expresses things this way, and we want to get accustomed to that "language" -- but another reason to express things this way is to demonstrate that, for the last two weeks, *we've been long gamma*. Which is the worst trade you could have possibly been in. What happened in the market is *exactly* the opposite of what we were betting on. "Short vol" won.

And yet we haven't lost more than a few dollars.

And so this seems like a nice time to remind ourselves that tactical long gamma is, for all its frustrations (iffy win-rate), a wonderful thing -- because even when it isn't contributing to PnL, it's a fixed-risk bet, and can be wielded with great precision (in a way that, e.g., "short vol" cannot).

So we're going to be nice to ourselves and say that, despite buying losing OTM calls for the last couple weeks, we're pretty pleased. Because when you're *dead wrong* but still didn't go broke, that means it's all sunshine and rainbows from here.

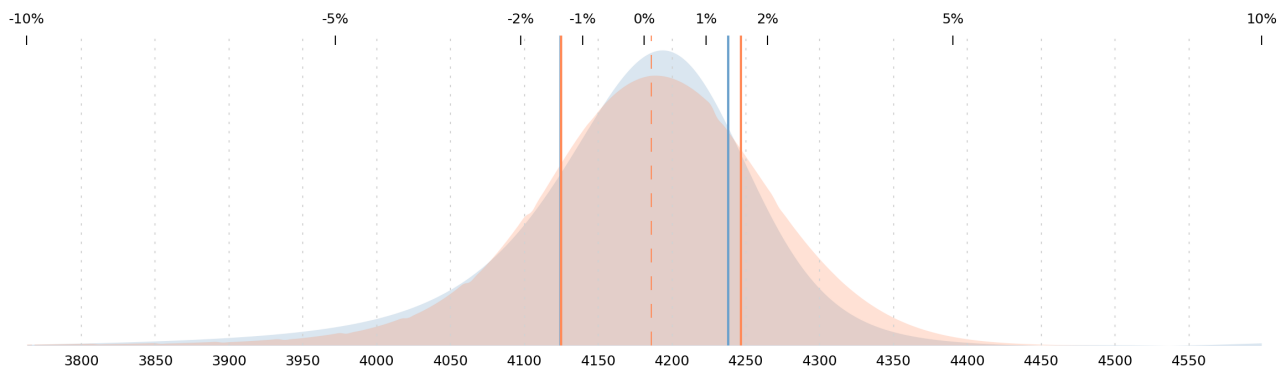
And speaking of sunshine and rainbows...

In May

"Sell in May and go away."

We're told that this old maxim on market seasonality has some merit. That's for someone else to ponder -- what we're more worried about is that it's May already, and for most of April, we were making the same bet that didn't play out. And yet, the 1-week GEX+ probability density has the *same relationship with market IVs right now as it did before*. Nothing has changed.

And so, out of an abundance of obstinacy, we continue to make the same bet. On Friday, we said we'd consider buying another teenie 4300-strike call position, and that's exactly what we did. And the data continues to recommend doing nothing else.



You can see that the orange density (GEX+) rises above the blue density (market IVs) in only one meaningful place, and that's around the 4300 SPX area -- implying that the market is underpricing the probability of a ~3% weekly gain. Same old, same old.

But there has been one *almost*-interesting development: NPD printed -3.18 on Friday, which suggests that not many puts were bought. In isolation, this number isn't too exciting, but if we get another one on Monday, etc., that could suggest that there's finally some "insurance fatigue" in the market -- which may finally open up some truly spiky volatility.

For now, though, more relevant is the VGR, which is still a very shallow negative (-2.71) and continues to tell us that VIX ought to have a hard time falling (and it's been telling us this since around 4/1, when VIX finally poked below 18). VIX is 18.61 right now.

Optimistic that things will shake up a bit this week.

Monday SuMo:

4164.48	4189.52	4214.55
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And Go... Add an Axis to the Chart

Recall that on the "Angle A" plot above, we were taking into account three "dimensions:"

1. Angle A (a representation of "vol")
2. Past 1-month SPX returns
3. Future 1-month SPX returns

And the clustering of future returns was very interesting. From last weekend:

[...] our interpretation of this is that "SPX is too high relative to high vol," or "long SPX has won too much relative to short vol." Second, you'll note a cluster of red where Angle A is high (80–120 deg, where 'vol' is low) but SPX is itself relatively low. In the same vein, this would be where "vol is too low relative to low SPX," or "long vol hasn't won enough relative to short SPX."

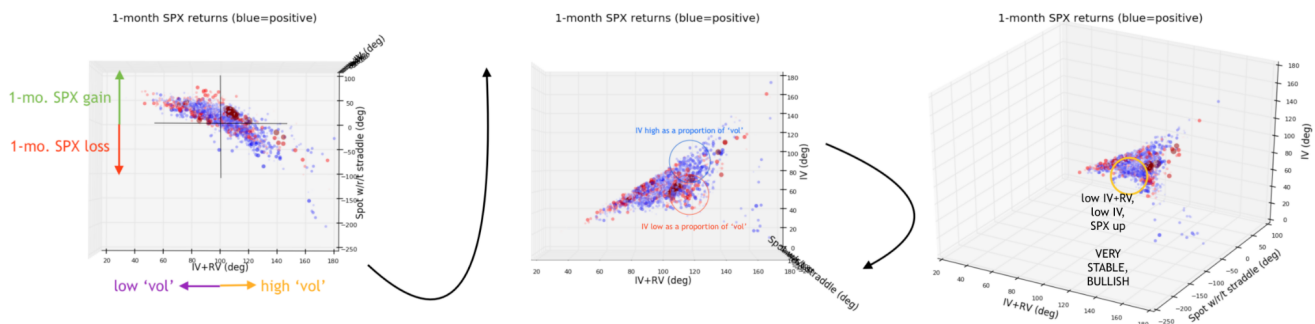
This all matches our original intuition about the vol triangle as a "tension model," so that's cool. But there's something else we want to get out of the triangle, too. We want to know whether the triangle can tell us if there's a difference between how the market reacts to relatively high RV versus relatively high IV.

(When we look at "Angle A," we're looking at the relationship of past implied volatility [PIV] to both RV and IV, so this gives us a window into how high "vol" is relative to its past self [and this is what's cool about our model here], but it doesn't allow us to segment our analysis into "high RV" versus "high IV" -- and we definitely want to be able to do that.)

So we have to add yet another dimension. We need a four-dimensional plot, to add IV ("Angle B") into the picture and look at how *everything all together* impacts SPX returns. So take a peek at this:

<https://squeezemetrics.com/download/4d.mp4>

In these three physical axes, plus one color axis, we get to see a lot of stuff at once, and we'd summarize it like this:



1.

In the first panel is the mirror image of last weekend's "Angle A" plot, merely expressed at "IV + RV" instead of "PIV." You can intuitively see the relationship between "spot" and "vol" here.

2.

In the second panel, we get to examine the relationship between *all of the angles* and SPX returns (which is why the scatterplot looks like a triangle) -- and one interesting thing shows up: When the combined current RV and IV are high relative to past IV (suggesting a recent uptick in vol), there is a HUGE difference between IV being higher and IV being lower. When IV is *higher* than RV, that's very stabilizing. When they're about the same/lower, that's destabilizing (look at the circled areas). *This is only true when IV+RV is sufficiently high, though (100+ on the x-axis).*

That last bit is fascinating, because it means that our age-old intuition that high IVs are per se "stabilizing" may only be true when current IV is significantly higher *than past IV* (usually people say that when IV is higher *than RV*, that's what's stabilizing -- and that's half-true, but this dimension adds a whole new, important distinction to that).

3.

In the third panel, we try to look at every dimension at the same time, and note that there really is a magical "sweet spot" for stable returns, where SPX has gained a bit, and where, specifically, $PIV > IV > RV$. Any one of these dimensions change and the whole picture changes very quickly. It's a delicate balance.

As you might expect it to be.

So let's start generating some historical data for this, and charting out a time-series. We want you to take a look at this data for yourself before we start taking the next steps. The triangle has more secrets, we are certain.

Enjoy the week!

The SqueezeMetrics Team
