

S&P 500 Weekly Forecast 4/11

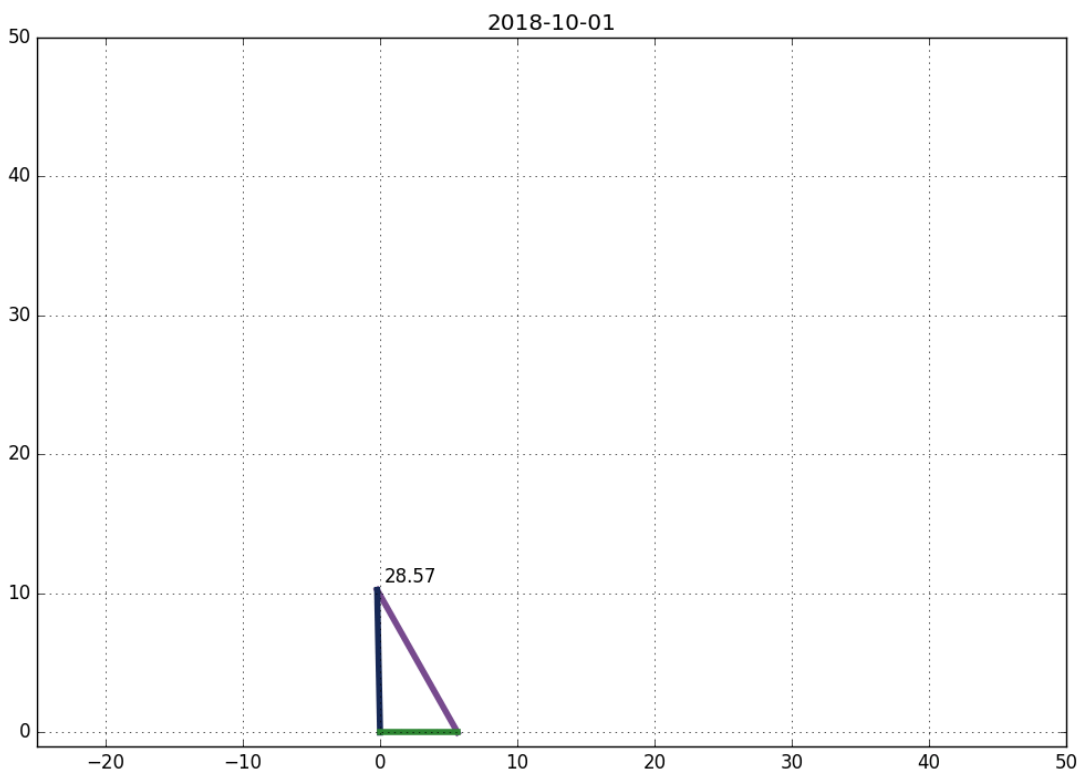
From: SqueezeMetrics <info@sqzme.co>
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Hey everyone,

Without too much context, just take a look at [this](#).

How would you describe the behavior of that triangle? How does it change over time? When it's smaller, what does it tend to look like? When it's bigger, what does it do? Try watching it a few times to get a feel for it.

We found this segment particularly evocative:



To us, it looks like the green (bottom) line is always "trying" to slide off to the right, and that the purple (right) line is some sort of rope that an invisible arm is pulling on -- in some sort of endless struggle to keep the green line from slipping off the map. And when the invisible arm gets a *really* good grip, you can see the purple rope getting yanked to the left, keeping the green line in check and pulling it closer. When the invisible arm gets tired, though, the green line makes a break for it. Kind of a like a dog on a leash.

Another, less-whimsical way of looking at it is that when the triangle is "left-leaning," its size is stable. It either

stays the same size or slowly gets smaller. But when the triangle is centered or "right-leaning," it tends to expand.

But we kind of like the dog-on-a-leash metaphor. And if we run with that:

- Past implied volatility (PIV) is the leash.
- Implied volatility (IV) is the dog-walker.
- Realized volatility (RV) is the dog.

And that means that the *angle of the leash to the ground* is what we want to know, because that's what describes whether, and how hard, the dog-walker is pulling on the dog.

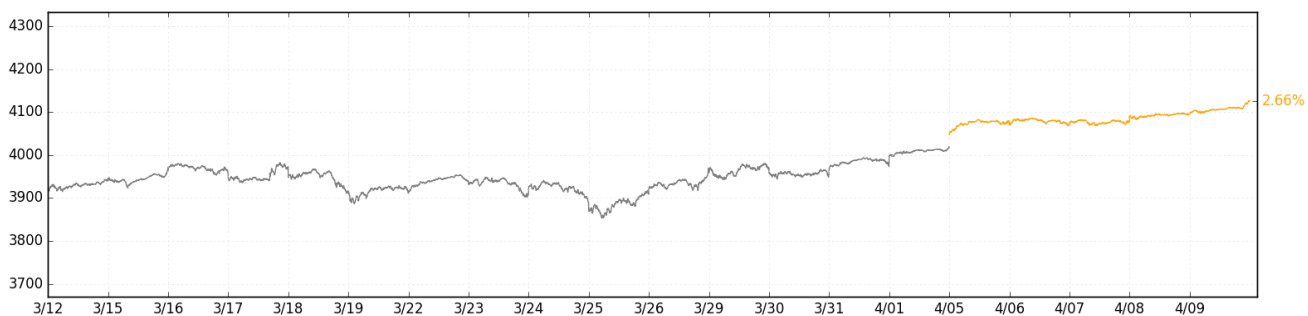
But that angle isn't the "Angle C" that we've been yapping about for the past couple weeks. Angle C is the number that you see on that animation -- the angle at the *top* of the triangle.

The angle that we're interested in here would be "Angle B."

1. T - 5
2. T + 5
3. Another angle

T - 5

All we did this week was hold some long OTM calls, buy more long OTM calls, and try to scalp some gamma intraday. Both Monday and Friday were very kind to our calls (Monday-expiring calls struck at 4050 ended in the money, Friday-expiring calls struck at 4100 did as well).



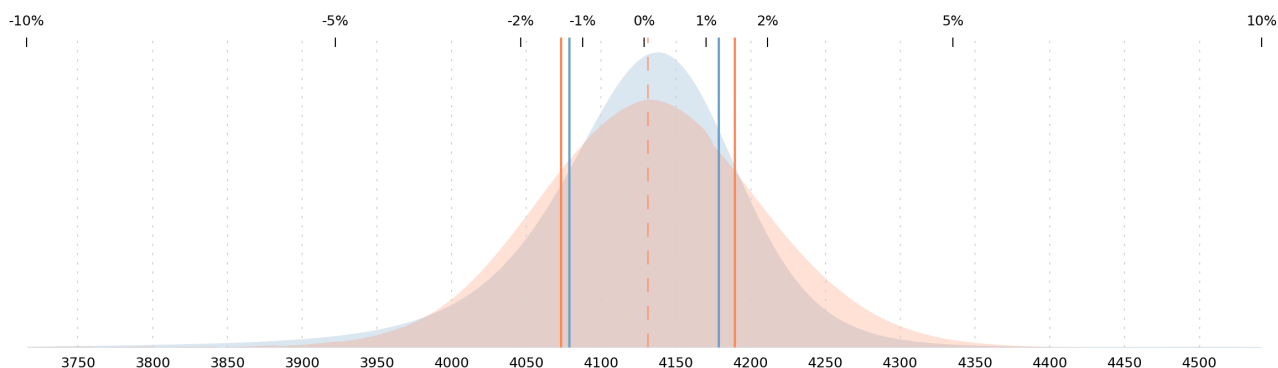
Other than that, our attempts at scalping our long gamma didn't work out so great. But we're not going to complain -- the week was kind to call-buyers.

We mentioned on Friday morning that we'd be considering buying even more OTM calls (SPX 4175), since GEX+ continued to suggest that buying the weekly right tail would be a positive expected value. And that's exactly what we did (luckily, in the morning). Our only position (small, of course) is in OTM calls....

T + 5

...and we're still happy about that.

Here's the 5-day probability density comparison between GEX+ and market IVs.



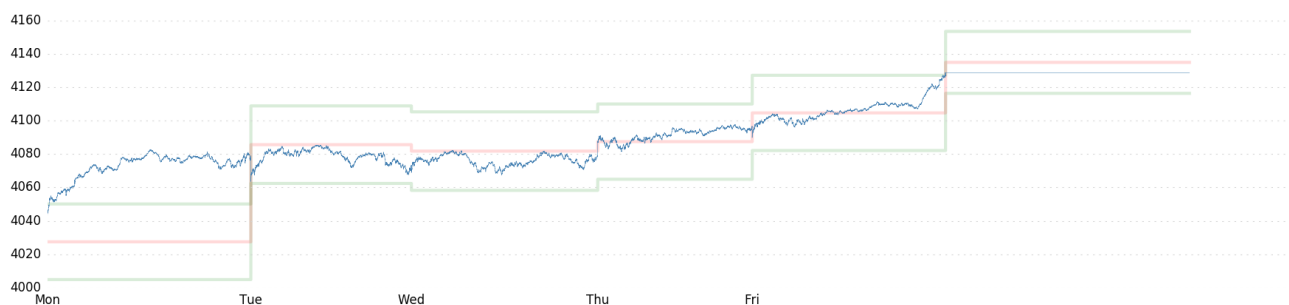
Note that the right shoulder of the distribution (+2% to +4%) is the most target-rich environment. Despite it being a low-probability bet, it continues to be a positive expected value.

And that's in sharp contrast to any other trades out there. With VGR at -2.44, customer volatility positioning is getting very stretched (there's a lot of vanna out there), and a rise in volatility is due. With NPD at -3.84, we have a moment's pause after seeing a week of strong put-buying. While it may very well be an anomaly, if we see a couple more days of -3 NPD, we'll definitely consider grabbing some downside gamma.

Bear in mind that this is Gamma Week. There's a monthly OpEx on Friday. For the past couple months, this has meant that an increase in volatility is likely on Wednesday or Thursday as folks frontrun the post-OpEx vol expansion. So we're going to try to frontrun the frontrunners, if the opportunity presents itself.

We will, no doubt, talk about that on Tuesday and Wednesday morning.

Until then, we have SPX 4175 calls, and we'll be trading with the SuMo bands -- same game as last week.



Monday bands:

4114.22	4136.09	4157.97
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Another angle

Recap:

The theory of "Angle C" was that, in the relationship between 1-month realized volatility and implied volatility -- imagined as a triangle -- there would be particular points of strength and weakness. If RV was too low or too high, something would have to change. Hopefully something predictable. As it turned out, some magic happened when Angle C was around 50 to 60 degrees, with SPX experiencing meaningfully positive next-day returns around 50, and negative next-day returns around 60.

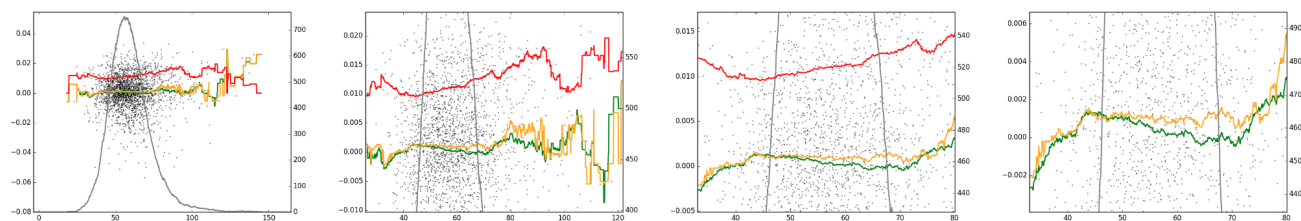
Tantalizing, but what does it mean? We weren't sure, and so we went off on a few tangents (hah, pun?).

After a brief foray into the daily covariance between VIX futures and SPX (which exhibited similar behavior to Angle C), and then looking at an *intraday* "vol triangle" (which collapses, conceptually, into our SuMo bands), we're back to looking at our beautiful Platonic form of vol-triangle and pondering its meaning.

And that it kind of looks like a guy walking a dog.

So here's the idea: If the relationship between our three vol variables is something like a guy walking a dog, then the relationship that we'd expect to see in the data would be that when he's pulling harder on the leash (i.e., when Angle B is smaller), this would be stabilizing to the market (reining in vol). It would correspond to lower SPX variance, better returns, and probably little to no left-tail (hah, pun?) risk.

Are we right? Of course we are!



Well, sort of. As Angle B moves below 40 degrees, there's a *sudden* need for SPX to fall the next day -- but, er, other than that, there's a clear tendency for a smaller Angle B (45-50 degrees on the x-axis) to result in positive, stable next-day SPX returns. And again, around 60-70 degrees, a danger arises, where mean (green) returns diverge from median (orange), indicating the presence of a long left tail risk. And then if the angle widens enough (80-90 degrees), volatile SPX upside commences.

As usual, the data is normalized to an imaginary market where VIX is always 20, in order to avoid conflating good-looking SPX returns with a typical high-vol risk premium -- so that 0.002 gain on the y-axis is a next-day gain of 0.02% when VIX is 20 (0.01% when VIX is 10).

As far as forecasting 1-day returns goes, this is pretty great, so once again, we're thinking that this triangle has more to tell us about the way things work. We have a few more tests in mind already, so hopefully we'll be able to deliver the goods soon.

Enjoy Gamma Week!

The SqueezeMetrics Team
