

## S&P 500 Weekly Forecast 10/18

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

Quick, messy note.

Recently, we've been measuring how many SPX puts are being bought and sold every day. We've been calling it "net put delta." The data has been interesting, and we left off last weekend like this:

What this all adds up to is that these day-to-day changes in net SPX put flows, measured in deltas, seem to tell us about incremental shifts in investor put positioning. When puts are being bought, that's good for stability. When puts aren't being bought, that's bad for stability. When you actually think about how quickly investors' put positions decay, it makes sense that you'd need to see a constant demand for puts in order to maintain a "safe" hedge ratio for the market. When that demand slows, as it has recently, it portends an increase in volatility relative to implieds, and the opportunity for some serious left skew events, which investors are unprepared for.

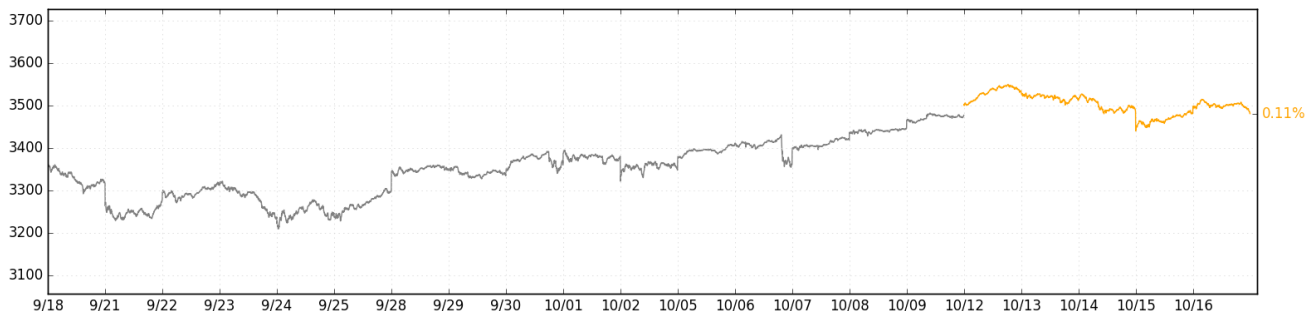
But just this afternoon, we began to wonder if this is the wrong way to think about it.

Warning: Half-baked thoughts ahead.

1. Prior
2. Posterior
3. Half-baked

### Prior

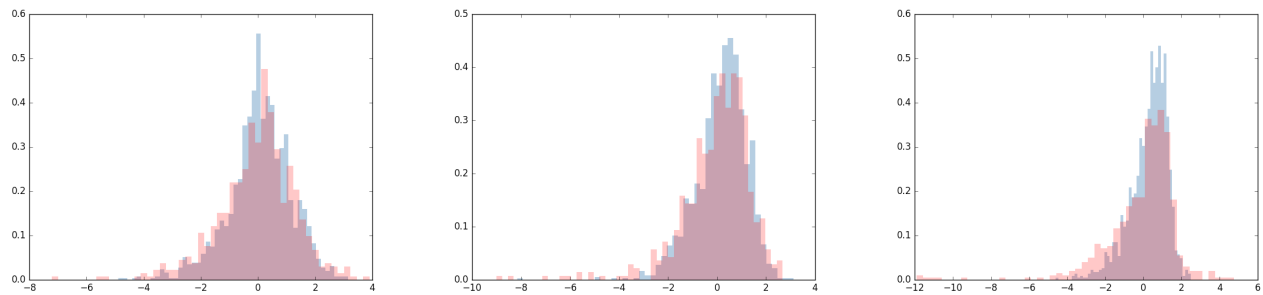
This past week ended up flat (SPX up **0.11%**). Usually, that's music to our ears, but in a turn of tragic irony, we weren't short a weekly iron fly like we usually are.



Do we regret it? Not at all. From what we can tell, this week had a lot of stuff brewing under the surface, and it wasn't worth trying to short vol in any capacity. If you recall, we also laid off the iron fly the week before, and it would have ended up being a total loss.

Granted, our 3400-strike SPX puts didn't perform either, but that's a very small loss, and given what we were

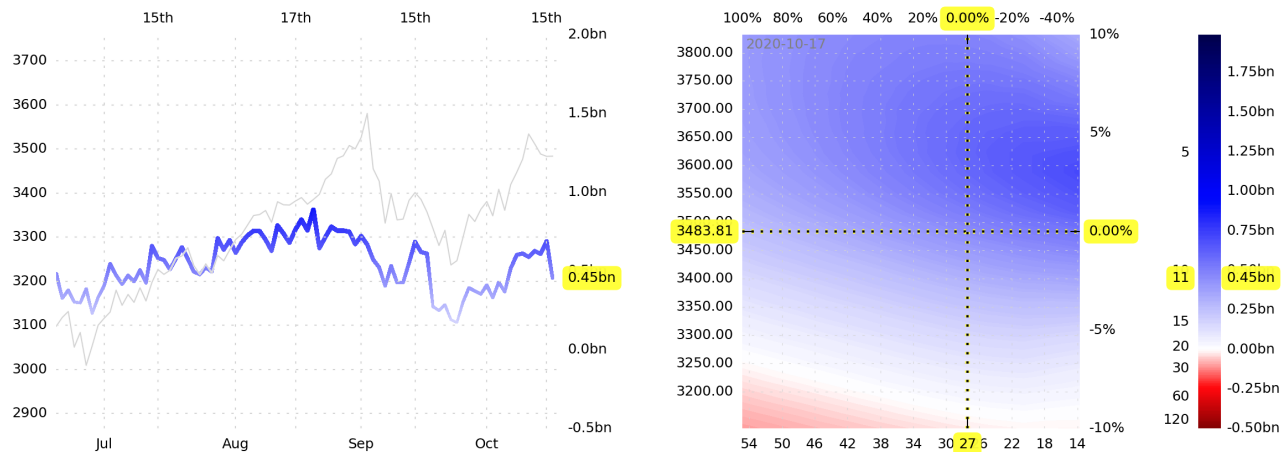
seeing in net put delta, a worthwhile bet. That's because last weekend, we saw a net put delta of **-2.73**, which is associated with quite a bit of subsequent excess volatility. Indeed, on the 1-day, 1-week, and 1-month timeframes (below, respectively), the probability density associated with that near-zero put delta (red) is always wider than average (blue) -- and on the [rightmost] 1-month timeframe, you'll notice a huge left skew, with 2- and 4-sigma losses quite possible.



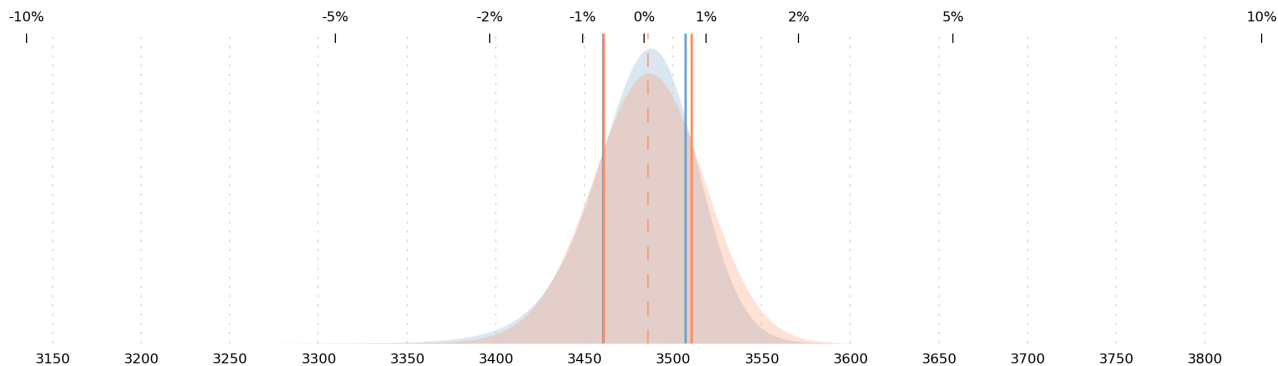
That's why we just bought some weekly puts and twiddled our thumbs. It was, in our mind, worth taking the long shot on one of those left tail events.

**Posterior**

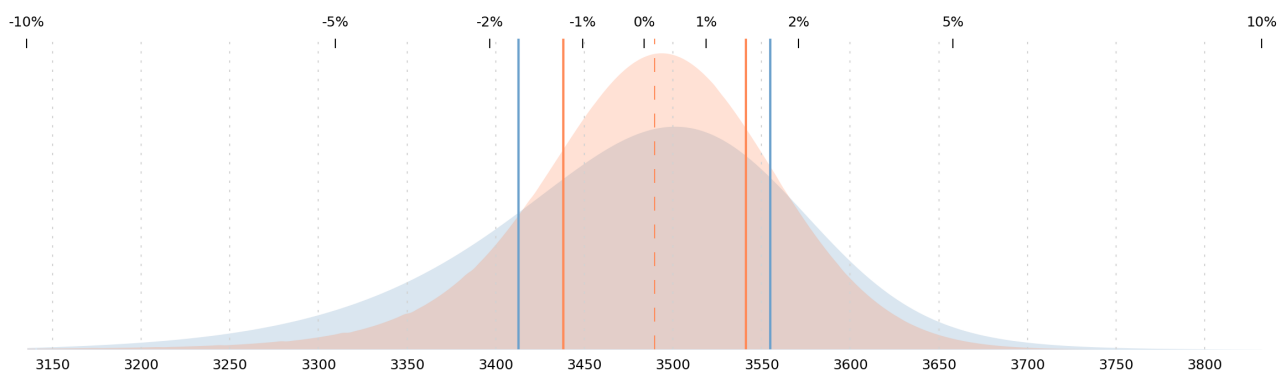
This coming week looks really similar. With Friday's OpEx, some options came off the table, which shakes loose the grip of SPX gamma ever so slightly, bringing GEX+ down to \$450mm per point.



The attending slight increase in expected volatility brings the 1-day gamma-implied vol (GIV) forecast in line with the market's 1-day forecast. This is usually a sign that short vol isn't going to be a great bet. Note how similar the GEX+ (orange) and market IV (blue) implied densities are.



Meanwhile, the 1-week densities (below) only offer a slight edge to the option seller, probably owing entirely to the mean-reversion risk premium (which is the only reason last week's iron fly made money).



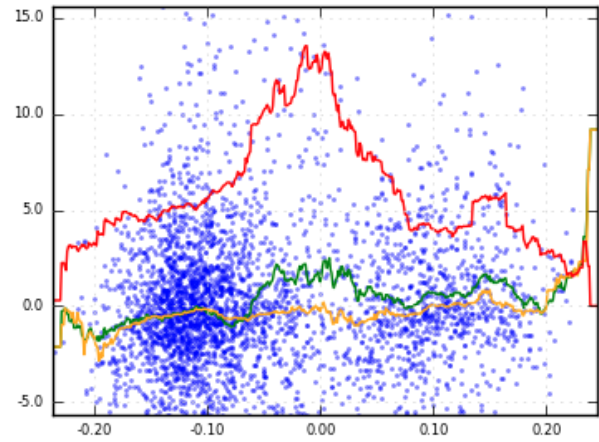
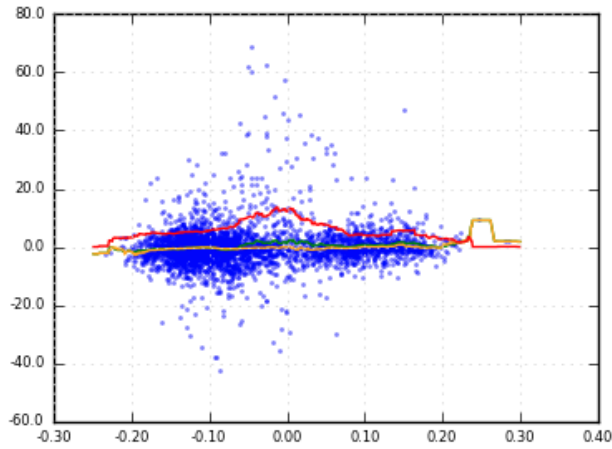
Once again, this isn't quite enticing enough for us to want to sell vol this week. Especially in light of the last few net put delta numbers. Want to guess what Friday's number was?

### Half-baked

Friday's SPX net put delta was **-3.22**. That's close to zero. A lot of this week's prints have been pretty close to zero.

Now we want you to take a look at this number through a slightly different lens from what we've been using for the past two weeks.

Below is a plot of daily net put delta (x) by *point change in spot VIX* after one month (y). The rightmost plot is simply zoomed in for detail. Green is mean, orange is median, and red is standard deviation. Data is every day from 2005 to present.



Note how well-behaved this data appears. As net put delta converges upon zero, the 1-month standard deviation of spot VIX goes (symmetrically) from 5 points to 12.5 points, more than doubling. Meanwhile, when net put delta is at the extremes (-20 or +20), the volatility of VIX is tiny.

We generated this plot a few hours ago, so we don't have any profound -- or intelligible, even -- thoughts about what it means. To that end, we'd be interested in hearing from you, dear reader. Certainly, this correlates to the impact that we saw the data have on SPX, but it appears that the impact on VIX is a cleaner representation.

In any case, with this data in mind, we're going to be acquiring some long vol this week (1-month SPX puts? 1-month VIX calls?), and we'll probably be holding that for as long as net put delta hangs around zero.

Enjoy the week!

The SqueezeMetrics Team

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