S&P 500 Weekly Forecast 9/19

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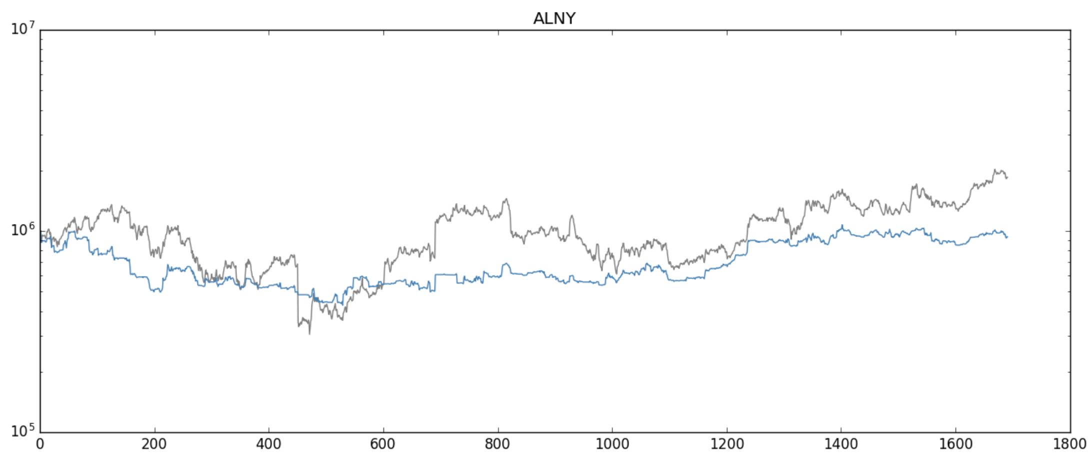
Hey guys,

Last weekend, we did a backtest of some PIVT data. It didn't look very good.

We featured ticker ALNY, since it was the first one that we noticed—while scanning alphabetically through the PIVT plots—that had an *undeniable* affinity for losses in one quadrant of the plot (top-right), and gains in the others. "This one should be an easy PIVT winner!" we thought.

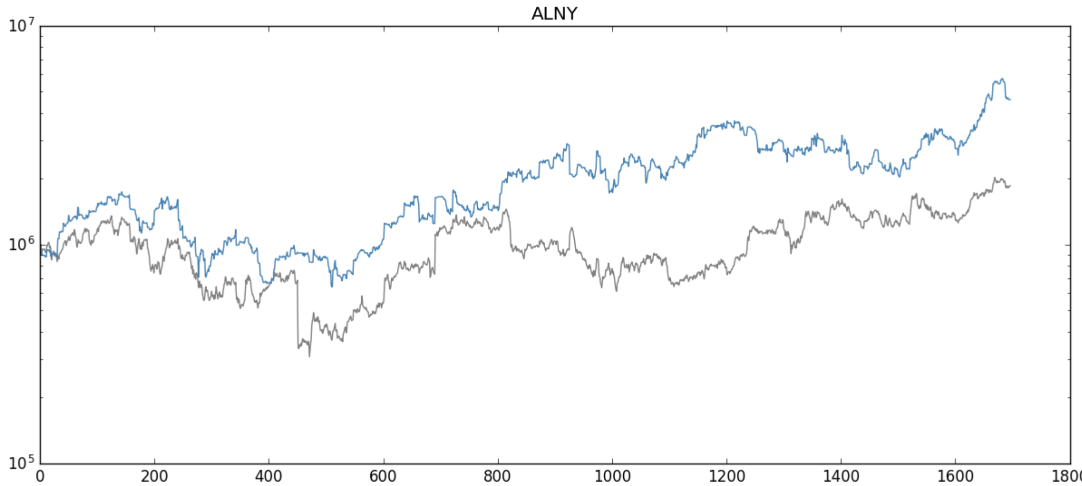


Blue line was our long-short PnL, gray was buy-and-hold. *Ouch.*

And it wasn't the only stock that looked bad. *Every* backtest looked bad. This was pretty darn demoralizing, and it bothered us all week. As much as we tried to justify it, there was no justification: No amount of fussing with "correlation normalization" was going to make up for that horrible performance across the board. Perhaps we'd been wrong about PIVT...

sigh

And then we realized that there was a negative sign in the code where there shouldn't have been. So we re-ran the tests...

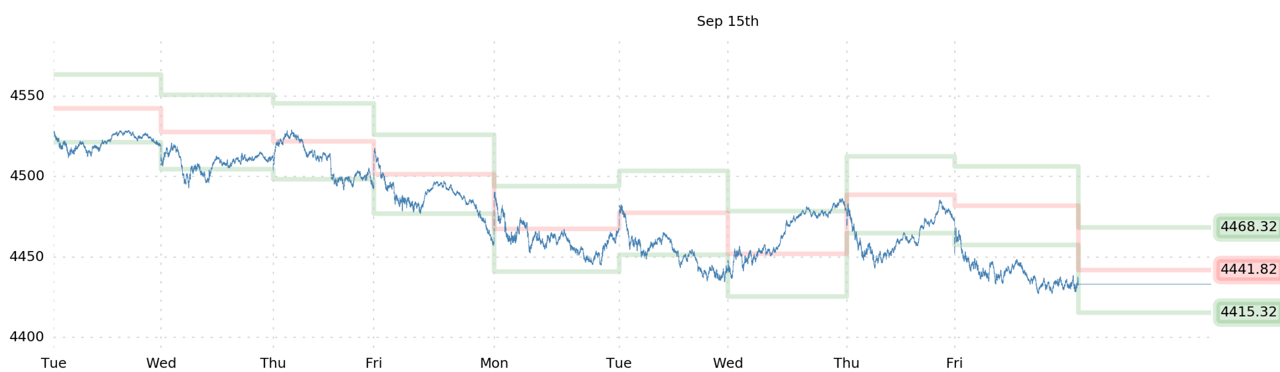


...and they don't look so bad anymore. How's *that* for a research update? So yes, there's still a lot of potential here, and it matches our intuition. And that's a very good thing. More about all that in a minute.

But now let's talk about the S&P.

1. The suspense!
2. It's killing me!
3. The meta-question

The suspense!
There's really something to be said for being a long-only investor, isn't there? We carried significant short delta nearly all week, and even did really well with our long vega timing, and we ended up having a great week (a great *two* weeks, actually!) -- and we *still* wonder if it was worth all the stress.



As you know, the key to the last two weeks has been NPD and VGR (by the way, it's been exactly one year since we introduced NPD!), and we've been watching them very closely for signs of supportive put-buying, which is the one thing that would change our mind on staying short. Well, there wasn't much put-buying.

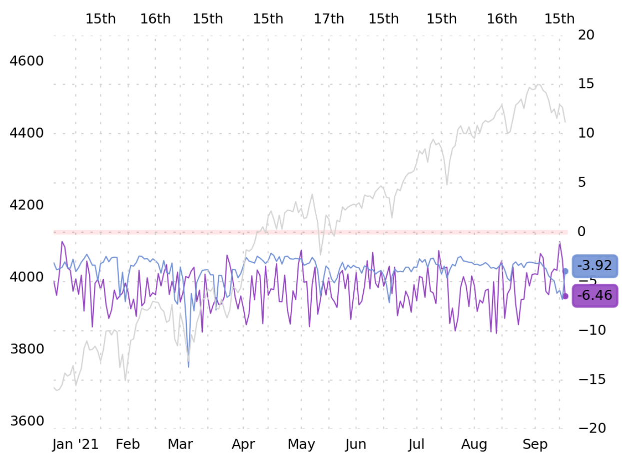
We also mentioned during the week that, not only was Friday going to be a large OpEx and GEX+ was likely to halve (and it did), but also that VGR was probably going to shoot back toward zero as a bunch of *customer* gamma expired as well -- further weakening customer positioning.

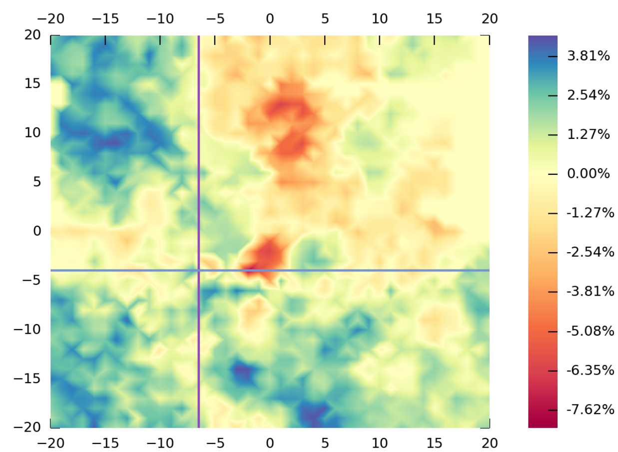
So we stayed short delta, long vega into the weekend...

It's killing me!
And while we don't regret that decision at all, it was a *bit tough* to see a 47.5% DIX print show up after the close. Certainly, we can (and always do) say that one day of DIX in isolation isn't the strongest signal, and it's true that Fridays and large OpEx days significantly inflate DIX—but it still looks like it's perhaps a "44%" on a seasonally-adjusted basis, and that still suggests there was *some* real dip-buying going on. Even though nobody's been buying SPX put protection.

As expected, VGR indeed shot back up toward zero as customer gamma disappeared, making customer positioning more brittle.

And then NPD printed a fairly uninteresting -6.5, leaving us in a somewhat precarious part of the NPD/VGR heatmap, as before. As we've been saying for the past week, we'd like to see something closer to -10 NPD before we feel like customer positioning is "safe" again.





Taken together with a GEX+ suddenly at $310mm (and two weeks of vega "underperforming" the slow decline in spot), the one thing we feel really ought to happen is an increase in realized volatility -- a quick, big win for gamma. This could be either up or down, but we'd guess that both possibilities are a tad underpriced.

So while our plan at the moment is to keep riding the downside (and to finally capture some vega PnL), we'll also try to grab some long gamma first thing in the morning (long 1-week ATM call, delta-hedged), unless something so dramatic happens that we're compelled to just get rid of our OTM puts for a profit—at which point, presumably, near-term vols will be too high to bother.

Fun week ahead!

The meta-question
The gripping narrative that you were treated to at the beginning of this note is quite illustrative of where we're at right now. We're trudging through data, trading what we've got, and trying all sorts of different things to fit the puzzle pieces together and speed up the code—and messing things up along the way. Our own process is very duct-tape-and-bailing-wire, and still largely discretionary—but all things considered, it's going

pretty well.

There's one thing, though, that's been bugging us persistently: We've tried *so hard* to reduce a multidimensional problem (delta, gamma, vega, vanna, zomma, OI, spot PnL, vol PnL, etc., etc.) so that it can fit neatly on a two-dimensional map—and now we wonder how much information we've lost along the way. Are we limiting ourselves here? Are we declaring the Earth is flat, because the thought of living on a sphere is so objectionable?

From other forays into option/vol data, we know that the IV-RV spread is meaningful to returns; we know that absolute implied volatility level is meaningful to returns; we know that gamma and vanna OI, considered separately, are very useful and meaningful to returns; and we know that all of these things have tenuous, dynamic, and non-linear relationships with each other. And yet, we've either conceptually flattened or completely ignored *all* of these things by mapping out PIVT in two dimensions.

This is the meta-question:
Should we stop *reducing* the problem, and instead *increase* the number of dimensions we're willing to consider at once? Should we *accept* the multi-dimensionality of the data instead of trying to make it easier to read and perceive on a piece of paper?

Nerd Note: *Our approach is, and always has been, to attempt to understand the* *reason* *that a given bit of market data acts the way it does. It's the "rational" approach, the "deductive" approach. We've always been suspicious of the "Jim Simons" approach, of throwing a bunch of data into a math-box and trusting what comes out. And while we're not saying, here, that it's time to shun Rationality and pay homage evermore to the gods of Machine Learning—there is, undeniably, a practical limitation to human perception in a complex system. And you would* *not* *argue that what we're dealing with is not a complex system. So are we hamstrung by trying to describe such a system in three or four dimensions, just so our feeble little eyeballs can suss it out? Because for the first time ever, we're beginning to feel like our little eyeballs and little brains are failing us.*

No doubt, this approach comes with its own problems -- but we're beginning to wonder if it's time to explore "multi-dimensionality." *Lots and lots* of data axes on the same "plot."

This week, before we go any further, we're going to be thinking exclusively about this meta-question (and we'd love to hear from anyone who's tackled this same question in the past).

While, hopefully, making lots of money.

Enjoy the week!

The SqueezeMetrics Team