

S&P 500 Weekly Forecast 4/26

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Subject: S&P 500 Weekly Forecast 4/26
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Hey everyone,

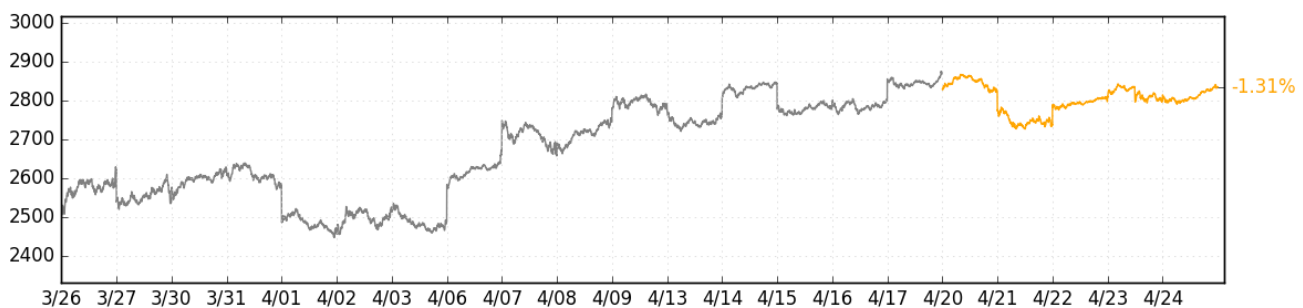
For a couple weeks now, we've been talking about "break risk" or "crash risk" -- the risk that liquidity dries up and the market ceases to function properly. Last weekend, we attributed this risk mostly to put-selling, since put-selling causes a huge, contingent liquidity-taking need while at the same time pushing implied volatilities (the price of liquidity) down. The mismatch between the *price* of liquidity and the *reality* of its scarcity then results in an inevitable break -- once the index reaches a specific level.

Naturally, we want to know that specific level ahead of time. Fortunately, GEX+ gives us the key to figure it out.

Program:

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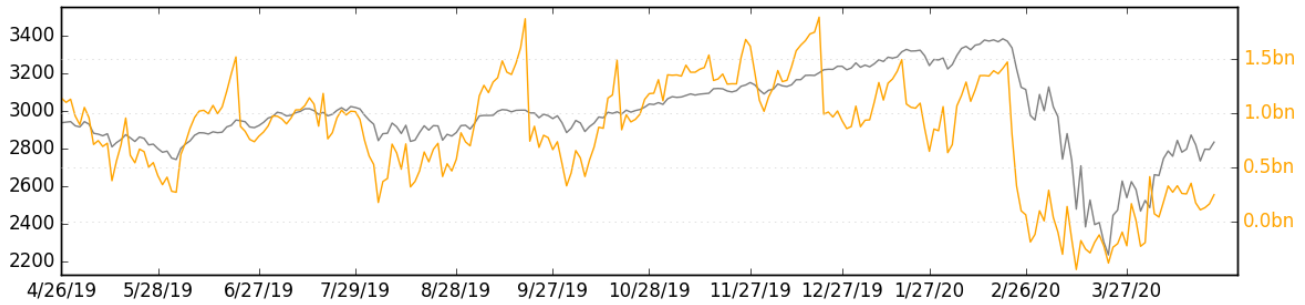
The last week



Not much to say. We thought it'd be a lot like the week prior, and it was. Overnight gaps; tight intradays. Overall, mean-reverting tendencies -- at least enough to justify another iron fly position:

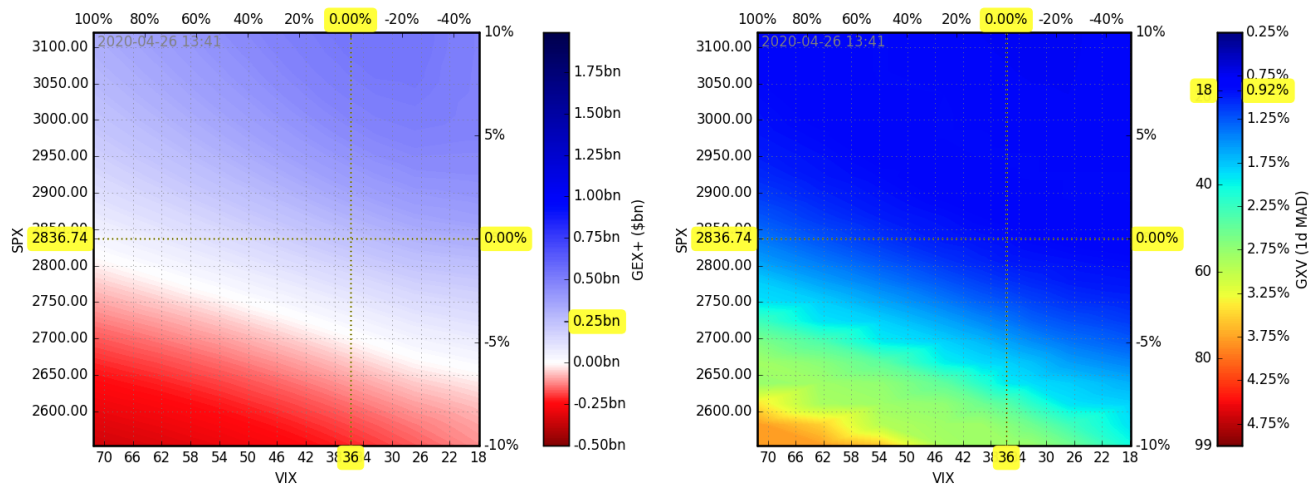
Meanwhile, VIX is implying 1.90% average daily moves. Like last week, if huge overnight gaps continue to occur, close-to-close volatility will certainly move a bit closer to VIX's estimate -- but we expect to see relatively muted intraday movement and a modest mean-reverting tendency regardless. Because that's just the dealer gamma/vanna situation right now. And that means we still like our iron fly spreads.

The coming week



GEX+ is \$249mm. That works out to an average daily move of 0.92%. VIX at 36, meanwhile, implies average daily moves of 1.81%. This leaves us in a very similar situation to last week, where volatility appears substantially overpriced, and short realized volatility on a weekly timeframe seems like a fine idea.

Also similarly to the last couple weeks -- the option market is pricing in greater illiquidity than we are currently experiencing or are likely to experience. This buffer makes everything safer from the perspective of break risk. You've already seen the heatmap on the left, which tells us where option dealers have to become liquidity takers (red). On the right is a more granular view of what that means for volatility.



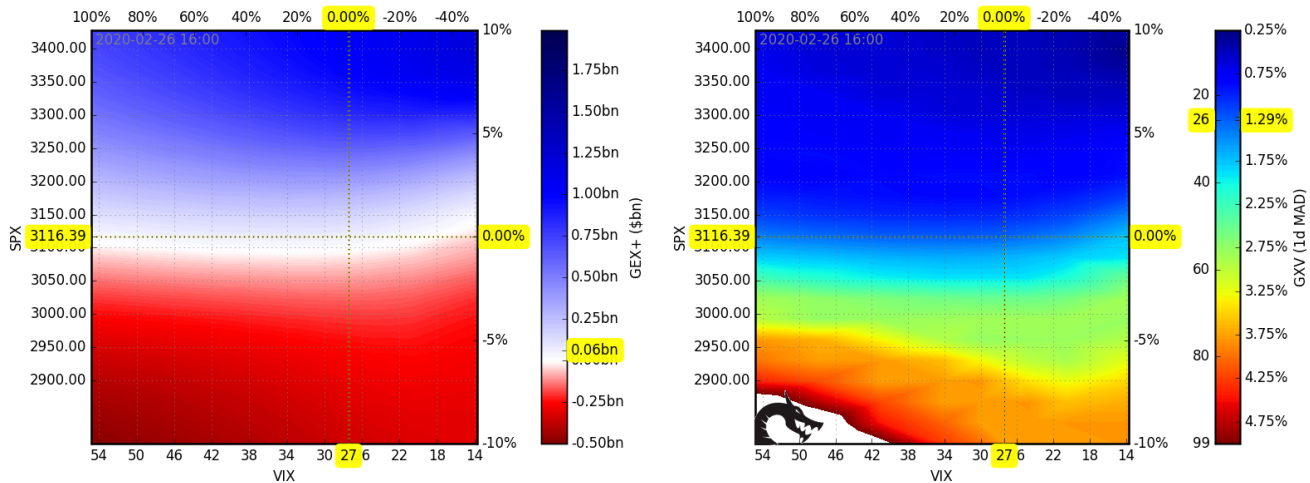
By way of introduction, let's go through what the GXV heatmap on the right tells us. With current option positioning, SPX at 2836.74, and VIX at 36, we anticipate a mean absolute deviation (MAD) of 0.92% per day on the S&P 500. This translates to a day-to-day volatility of 18 -- half of what VIX is saying (you knew this already).

But then if SPX were to fall below 2700 (-5%) and VIX were to rise to 56 (+50%), we'd just start getting into the green part of the map, which would imply around 2.00% average daily volatility -- equivalent to a VIX of 40. Another way of looking at it is that we'd need the index to fall something like 7% for the *current* level of VIX to be correctly reflecting the present liquidity situation. Take it a step further -- if SPX fell 10% and VIX rose into the low 70s (+100%), that light orange color would give you a volatility of about 70 (implying that VIX would be fairly priced).

The implication is that you want to be short volatility right here, but gradually *less* short volatility as the market falls. You want to be betting that the liquidity situation is actually better than the prices say. In trade terms, this is a bull ATM put spread (or an iron fly). This is also long equities pegged to the 1-day MAD, gently paring risk on the way down. And if you're a bear already, this is taking away your expectation of convex downside and betting on a gentler decline, because you're almost certainly overpaying for puts right now. (Consider selling ITM calls!)

Crash-test dragons

Now let's look at those same heatmaps, but from exactly two months ago, on February 26th -- before the second leg down. There are some notable differences.



We had to add a dragon, because the GXV heatmap ended. The fact that it ends means that there is no historical precedent to attempt to describe what would happen if the index falls 10% and VIX doubles. The implication is that VIX at 50 would directly *cause* real volatility to be 100 (due primarily to vanna exposure). That's... um... problematic. Volatility would, by *necessity*, cause more volatility.

What's also problematic is the distance between the green zone and dragon-red. If the index fell to 2950 and VIX rose to just 34, you'd be on the cusp of orange. Orange means ~70 vol. But wait, it's worse. If SPX simply fell 2%, that would put the GXV solidly in the green. That means 50 vol. VIX was 27 at the time. Take a minute to stare at these charts.

No matter how you cut it, the market was on the precipice of something dangerous, where volatility was going to be insanely, ridiculously underpriced due to the effect of customer-sold puts. Not only would option dealers suddenly flip to taking liquidity, but they would need to be taking huge amounts of liquidity, and quickly. And then there are the folks we mentioned last weekend who would suddenly be deep underwater on their short put positions and forced to liquidate.

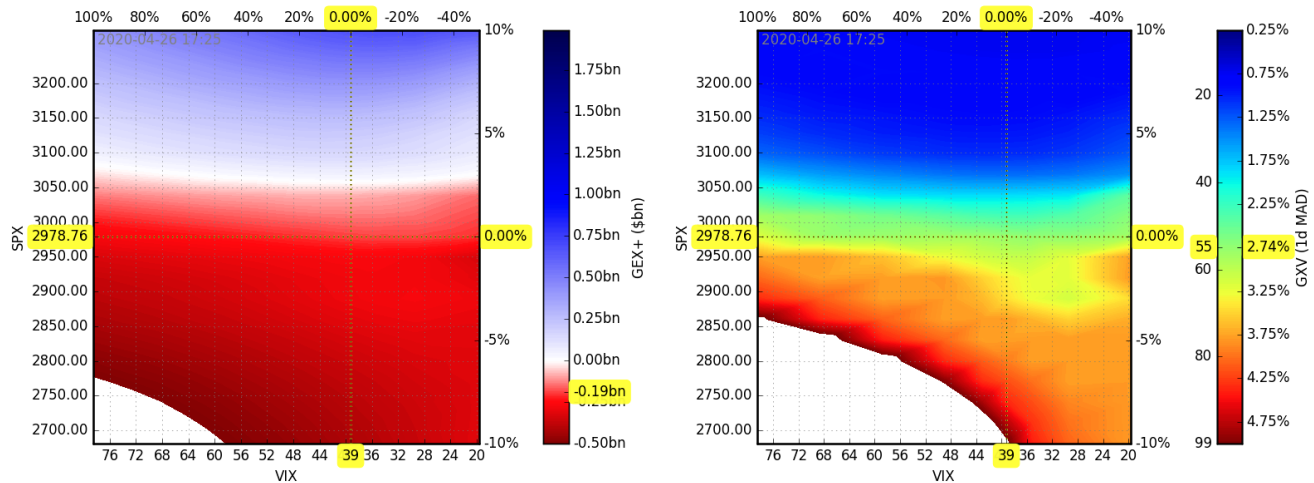
To us, what's disconcerting about this whole thing is that our point volatility estimate would never be able to capture this on its own, because our point volatility estimate looks at the immediate effects of option positioning *right now*, and *not* the conditional effects (in the event of some counterfactual). And after digging through this data for a few weeks now, we're becoming a bit more convinced that those counterfactuals are where the dragons tend to sleep (some of you are probably like, "yeah, duh.")

Nerd note: Some of you super smart people asked if customer long puts struck below spot can also contribute to negative VEX, and thus volatility. Yup, they do. So why do we focus on customer short puts instead? Because they're way worse. When a customer's long put becomes ITM, it contributes to positive VEX, and thus stability. So the crash kinda loses steam as soon as you pass below those strikes. When a customer's short put becomes ITM, though, everything just keeps getting worse. It doesn't help that the tendency is for the crash to begin at a lower IV level, too, because everyone was selling those puts and pushing IVs down. And that means that the break tends to be much harder. Make sense? Customer long puts are a recipe for dip-buying. Customer short puts cause crashes.

Anyway, this makes us think we need to start defining crash risk in terms of a sort of "crumple zone." The idea of a crumple zone is simple: A car crumples when it crashes so *you* end up crumpling less. A long crumple zone gives the car more time to decelerate. A short crumple zone doesn't. That evil dragon-map up there has a really really short crumple zone, because if spot falls just 2%, the market is already way offside in terms of volatility. There will be no opportunity for deceleration.

Now go back up to today's GXV plot (the one without the dragon). That's a *really* long crumple zone by comparison (the market will *never* be offside in volatility terms), and that means there's no crash risk here -- just normal volatility.

By the way, the index fell almost 5% the day after evil dragon heatmap, and let's just say that didn't make anything better. Even our point volatility estimate was disagreeing with VIX at that point.



And for whatever reason, the Universe doesn't want us to attach another heatmap to this message, so to see the map of the Friday before the Lehman bankruptcy, [click here](#). Crazy, huh?

Ok, so we think we've gotten at something really important with these liquidity/volatility maps, which means you'll be seeing these every morning -- first in the daily email, then in a daily PDF. Then, eventually, intraday. But first we need to figure out the most useful ways to slice and dice this data for the sake of day-to-day decision-making. So if you, dear reader, have any inspiration on that point, let us know.

Lot more work to do, but it's nice to start seeing this stuff do what it's supposed to do.

Premium subscription will remain closed until this is more fleshed out. Thanks for being along for the ride.

The SqueezeMetrics Team

