S&P 500 Weekly Forecast 7/12

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Subject: S&P 500 Weekly Forecast 7/12
Date: Sunday, July 12, 2020 8:59 PM
Size: 555 KB

Hey guys,

Months of discussion, pointed questions, and most recently, a bit of proofreading, helped get "The Implied Order Book" out there. Thank you all for that. We now have one document that we can refer to that -- we think -- gets to the heart of the issues we're trying to tackle here. And that means we have some solid concepts to build on.

As you know, we already have GIV and market IV skew comparisons, ideas about "crash risk," and other stuff like that. But there's more to do. In order of "most requested," we have (1) "put more stuff on the GEX+ spreadsheet," e.g., GIV, crash risk, and VIX, to make time-series analysis easier and discover signals; and (2) "build the probability page," which will place GEX-implied market moves in the context of probability densities on the index.

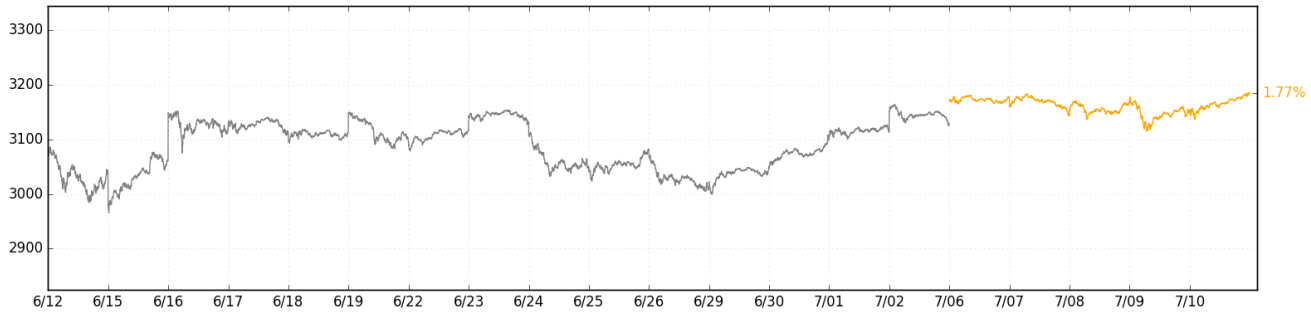
We've also been hearing an undercurrent of, "It would be cool to see GEX+ for single stocks." Yeah, we know. And that's gonna happen, but it's going to be difficult to get it right, and *expensive* (it will probably be two orders of magnitude more expensive than any of our prior undertakings). So if you can convince your friends to pay for it, get them to sign up for Premium! (After many months of us telling you *not* to invite your friends, the subscription has finally reopened.)

And though we don't really want to talk too much about single stocks, since we're not *ready* for that conversation, a lot of you folks seem to have had a light-bulb moment with respect to vanna in Tesla (TSLA) after reading the VEX paper. Since this is too fun not to talk about, let's talk about it.

But first...

1. T - 5
2. T + 5
3. It's broken!

T - 5
This past week (+1.77%) was really boring, but in the context of the last two weeks, it was actually kinda interesting in a way.



It was interesting because the week prior (the holiday week, beginning 6/29) had an average daily move of 0.99%, and this past week had an average daily move of 1.01% -- nearly identical. But the holiday week returned 4.03%, where this past week only returned 1.77% -- quite different.

During the holiday week, you'll also note that VIX fell from around 35 to 28 and, e.g., VXX got smooshed; whereas during this past week, VIX stuff remained completely unchanged. In contrast, our weekly iron fly lost money during the holiday week, and made a tidy sum this past week. Quite different.

The difference between these two weeks is the difference between *term* risk premium and *variance* risk premium -- something that we think is worth revisiting on occasion. See, VIX futures are a form of trading IV against IV, whereas a weekly iron fly spread is trading IV against RV (realized vol). Neither is "right," or "wrong," and during the last two weeks, we've been holding a short VXX position *as well as* selling those flies.

Long-time readers will note that we're usually not big fans of using VIX products (because trading IV against IV is inherently mushier, whereas trading IV against RV will actually pay if you're right and not if you're wrong). But to the extent that a short VIX trade is largely a "short vol-of-vol" trade, and a "short vol-of-vol" trade is largely a "short crash risk" trade, we thought now was a good time to do that, since the one thing we've been saying every day since April is that there's *no crash risk*.

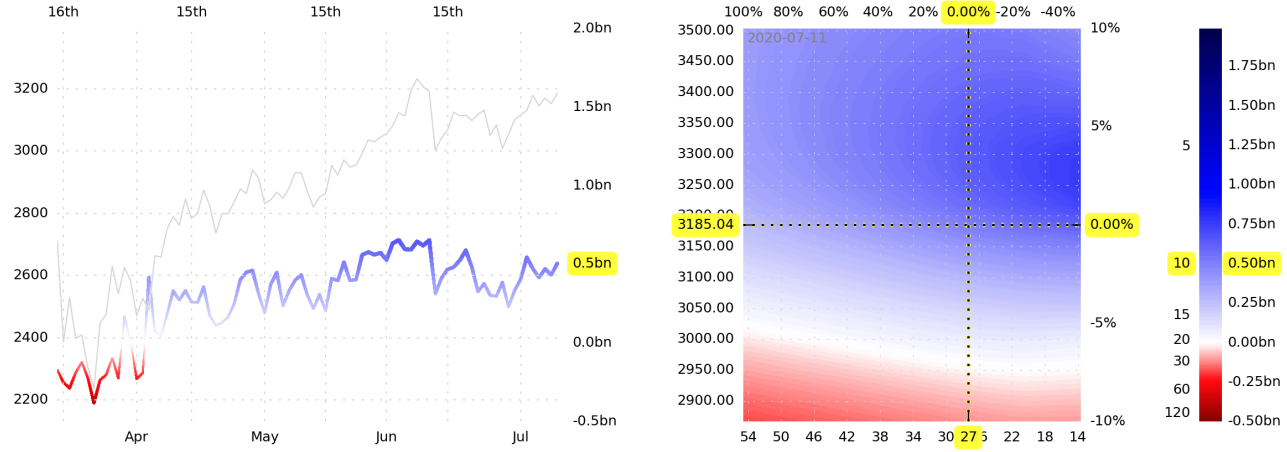
And although we noted that this trade became a bit less "meaty" last weekend, this was the general idea.

> But if you're tied to more liquid instruments, why not short VIX with a bit of short SPX? There's a lot of meat on that, too.

So hopefully one of the last two weeks turned out in your favor -- in any case, you should have come out ahead overall, regardless of whether your money was on capturing the *term* or *variance* risk premium (or if you're just long SPX, which is, obviously, rather correlated to both of these!).

T + 5

Looking forward to next week, you're seeing more of the same. GEX+ is now at half a billion dollars of liquidity provided per point move in SPX. That corresponds with 0.52% average daily moves, or 10 vol, although with VIX still around 27, sentiment will probably continue to butt into the picture, and we expect fear-induced liquidity-taking to drive average moves up from 0.52%.

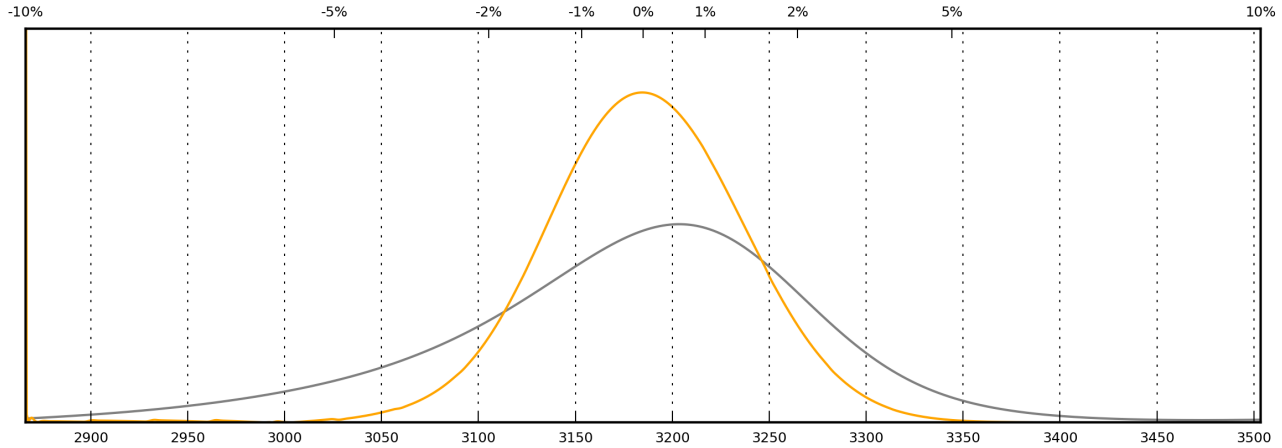


Our stupid average-of-VIX-and-GIV heuristic has done stunningly well recently, predicting 1.00% average daily moves for the last two weeks... and getting 1.00% average daily moves, so let's keep rolling with that. 27 *VIX* + 10 *GIV* = 37. Half of 37 is 18.5. 18.5 vol converted to average daily move is 0.93%. So, we're expecting *slightly* less daily movement this week.

Usually, our S&P 500 discussions can be effectively translated into Nasdaq 100 discussions. Usually they move in tandem. At the moment, though, there's a notable disconnect. There's a disconnect because people have been buying call options on Big Tech stocks, and those calls' delta-hedges have been making the underlying stocks do stupid things. It would thus be rational to think that NDX will be choppy in the near future. As you know, short dealer gamma cuts both ways, and corrective action on Big Tech *should* arrive soon (timestamp for future humiliation).

What's important to understand, though, is that any scary-looking daily charts on NDX have no bearing whatsoever on the S&P 500's crash risk. Option-derived book-depth is still good, and GEX+ still only hits its zero down around SPX 2950. So don't get worked up over a Nasdaq scare if it happens. It's just gamma taking revenge.

The 1-week probability densities are below. Gray is the market's expectation, orange is ours.



Same playbook as last week: SPX iron flies and short VXX / VIX futures, each modestly sized, no frills. Otherwise, for a bit of fun, keep an eye on some of these tech darlings to see if the gamma comes home to roost!

It's broken!

Speaking of Nasdaq's performance, let's circle back that best-loved bubble stock: *Tesla*. So, after we sent out that paper last Sunday, a bevy of readers wondered, "Is VEX a big factor in what's going on in TSLA?" And the answer is yeah, it's the missing piece that raises the *probability* of bought OTM calls turning into a parabolic rally.

So, historically, with the benefit of GEX, we'd have already said that the impact of buying OTM calls is potentially very bullish. The process goes something like this.

1. You buy a 10-delta call and a dealer has to buy 10 shares to hedge. Price goes up a bit (bullish).
2. Price goes up a bit more (for any reason) and the dealer has to re-hedge to a higher delta, which means buying more shares (bullish).
3. When the OTM calls become ATM, their gamma is maximized, and the underlying will "slingshot" through the heaviest long call strikes, in a gamma-bonanza.

But that "price goes up a bit more" thing in part 2 is a bit vague and conditional, right? If enough people buy calls, the initial dealer hedge *could* keep pushing price up, but 10 deltas isn't a lot, so it'd have to be a whole ton of volume. When you think about this series of events, you'd probably say that there's a pretty *small* probability of those OTM calls becoming ATM, though, even if you acknowledge that it'd get pretty crazy if they do (they're 10-delta calls, after all).

When you add *vanna* exposure (VEX) into the mix, though, a new dynamic appears: If the implied volatility (IV) of those OTM calls rises because of demand, their delta goes up, compelling a bullish re-hedge. And so, even if the underlying remains *unchanged*, incremental demand for OTM calls push IVs up, raising the delta of *all* of those calls, and then compelling dealers to buy more shares to hedge *existing* OTM bought calls. Thus, even from a standstill, the underlying can start moving up, and it will move up as a function of how much long call open interest is out there. This is entirely without the help of gamma.

See, vanna impacts deltas most when options are *not* at-the-money (OTM/ITM). When options move to become *at*-the-money (ATM), vanna effects are basically replaced by gamma. Now imagine how this all works in the case of a long call squeeze: 10-delta calls get bought over time, and as inventory builds, IVs start going up. When IVs go up, the whole inventory delta rises, and requires a big ol' re-hedge. The re-hedge pushes the underlying up, since there's *that much* open interest in the calls, and the calls move toward moneyness. Suddenly, the vanna effect is weakened as formerly OTM calls become closer to ATM, but there's no room to pause, because here, *gamma* takes over. Incremental buying now significantly moves the deltas of hundreds of thousands of contracts, forcing large re-hedges, and perpetuating another (even more intense) leg of the squeeze.

Without going into much detail, this seems to be what happened in TSLA on Friday (+10.78%). The stock simply does not have enough natural liquidity to accommodate the *enormous* liquidity demand that option market-makers now have owing to a massive short gamma position in the form of short ATM calls. Their liquidity-taking need far exceeds what's on offer, and delta-hedges plow through the order book.

This is a *massive* failure of a market. The "implied order book" not only contains more "stop" orders than it does "limit" orders, but also, there is simply no source of liquidity to ever accommodate the size of those option-originated stops. If the stock manages to reach a level of substantially negative GEX+ (just like with the S&P 500), liquidity-taking behavior causes a crash. Except in this case, the negative GEX+ is to the upside, and the stock is crashing *up*.

Orderly markets require -- at a minimum -- that there are *not* massive black holes of liquidity, nor instruments that, by their nature, create massive black holes of liquidity. So, this really needs to be fixed. But in the meantime, let's watch and learn.

Enjoy the week!

The SqueezeMetrics Team
