

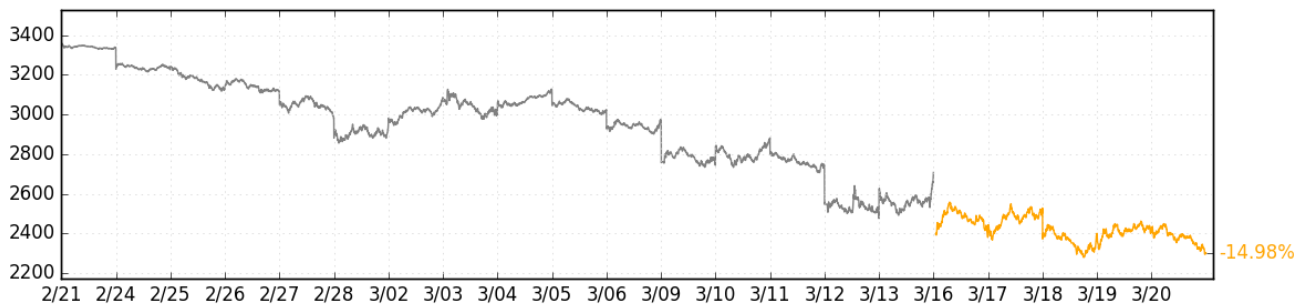
## S&P 500 Weekly Forecast 3/22

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Hey guys,

The S&P 500 is now down around 32% in the past month. The one-week return since our last Sunday note is **-14.98%**.



So, there's this eternal sense of insecurity for younger PMs and traders -- that they have never experienced "the big one," and so they're pretty much unqualified to say anything. Well, here you go. Now you're all veterans, if you weren't already. Congratulations.

Last weekend, we posited that there had been a significant amount of customer short puts above the market, and that these puts, by virtue of dealers' vanna (delta sensitivity to IV), were likely to cause a ton of volatility (which is why we had sent out that warning note on Thursday predicting 99% 1-day vol).

*[...] the upshot is that customer short puts (dealer long puts) struck above the market can cause insane upside squeezes when implied volatility falls. And when implied volatility is high, this effect can be huge. The effect is called vanna. And in this market, it's an important complement to gamma. Two sides of the same coin.*

So when VIX fell, SPX squeezed up as a result. That's what happened on Friday, 3/13. That's kinda intuitive, right? VIX down, SPX up. Except in this case, it was supercharged.

This *past* week (especially this past Friday, 3/20) was the exact opposite. Indeed, it threw everyone off it was so unusual: *VIX down a lot, SPX down a lot?* Crazy.

So, since we're still waiting for our "dealer directional open interest" numbers to generate (we'll have them next weekend), let's take a look, in broad terms, at what we mean by this week being "the opposite" of last week.

Here's a query from the trade-direction database. The results are the largest-volume SPX option series with the direction of that volume. This data is from this past week's trading, looking at all expirations going forward. The June SPX expiry got the most attention, followed closely by April. But, more importantly, notice

the combination of option *type* and trade *direction*.

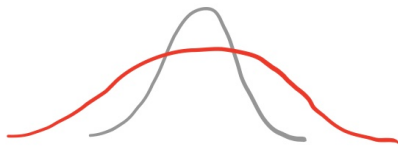
expiry	strike	type	direction	volume
2020-06-19	2400.0000	P	B	69492
2020-06-19	2400.0000	C	S	64082
2020-06-19	2500.0000	P	B	44284
2020-04-17	2400.0000	C	S	40005
2020-04-17	2500.0000	C	S	34318
2020-04-17	2400.0000	P	B	34155
2020-06-19	2300.0000	P	B	32372
2020-06-19	2500.0000	C	S	31128
2020-04-17	800.0000	P	B	31057
2020-04-17	1000.0000	P	B	30244
2020-04-17	700.0000	P	B	28911
2020-06-19	2000.0000	P	B	27563
2020-04-17	900.0000	P	B	25839
2020-04-17	2000.0000	P	S	25430
2020-04-17	2000.0000	P	B	25370
2020-04-17	1100.0000	P	S	25203
2020-04-17	2500.0000	P	B	23260
2020-05-15	2650.0000	C	S	22683
2020-04-17	700.0000	P	S	21328

Puts (P) are overwhelmingly bought (B). Calls (C) are overwhelmingly sold (S). The puts that were sold (marked in green, so as to represent a long delta trade), were all sold significantly OTM, at strikes from 2000 to 700.

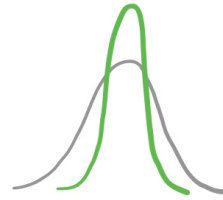
With all other things being equal, this leaves customer-bought (dealer short) puts as the most dominant force in the market (no surprise). And so let's consider for a moment what that means in terms of vanna, given that those puts exist in a high-IV market, and *are currently in-the-money* (ITM).

To start, here's a handy infographic of what happens to the implied distribution of returns when IVs change:

If IVs go up...

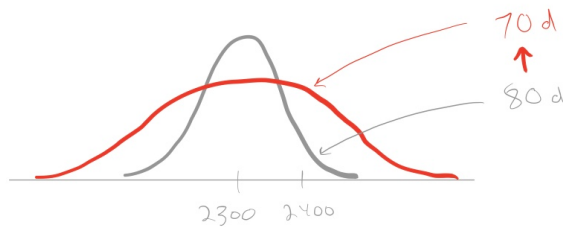


If IVs go down...

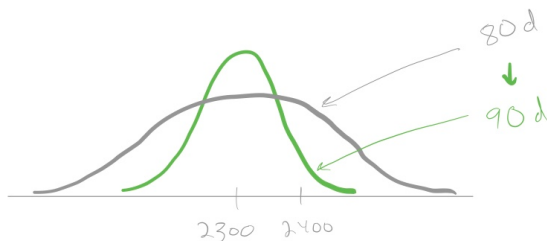


In words: Higher IVs mean there's a wider implied distribution of returns. Lower IVs mean there's a narrower implied distribution of returns.

Now consider that when the distribution of returns changes, the deltas (probability of moneyness) of options change too. Since we're thinking specifically about those puts, which are held *short* by SPX option dealers at strikes *above* the market, consider what dealers have to do when IVs change. First, if IVs go up; second, if IVs go down.



customer's long  
When dealer's short 80d put becomes a 70d put, dealer must **buy** 10 more "shares" of SPX.



customer's long  
When dealer's short 80d put becomes a 90d put, dealer must **sell** 10 more "shares" of SPX.

Yes. You read that right. When IVs go *down* in this environment, that causes dealers to *sell* SPX. And when IVs go *up*, that causes dealers to *buy* SPX.

So when you saw VIX go down a whole lot on Friday, and saw SPX tumble with it, consider that this is likely to be an effect of vanna, and of those options, and exactly *where* they're struck in relation to spot.

Now extrapolate. As it stands, if VIX rises, dealers will buy SPX; and if VIX falls, dealers will sell SPX. But if we move out of this range -- specifically to the upside -- that effect will diminish. So if you wanted to turn all of this vague, unstructured information into a trade (some of you will have this much discretion), then consider the beautiful simplicity of something like buying a 1-month ATM put. An ATM put will benefit if IVs increase, but will also benefit if the underlying moves down.

Alternately, if IVs open high tomorrow (we appear to be flirting with the E-minis' -5% locked-limit down again) and you want to bet that IVs can't get much higher, consider *selling* an ATM put. If you're wrong and IVs trek higher, at least that increase in vol will come with buying support from dealers (but then if IVs fall, you'll want to switch back to a *long* ATM put, because IVs falling will encourage dealers to sell!).

*Quick nerd note: When customer-bought put strikes are below spot, expansions in IV cause a feedback loop of IV expansion and dealer SPX selling. This is, of course, how this selloff began, and it's why when we used to sell ITM puts when GEX was high (so long ago!), we'd always spread it by buying an OTM put. Because high GEX is always a sort of "fake-stable." Indeed, in a weird way, what you see right now is more stable than a high-GEX market -- at least from a vol perspective. It just doesn't look like it, because this stability encourages the market to pseudo-gently go down rather than gently go up. A soft, fuzzy bearishness!*

Anyhow, by revealing these flaws inherent in an option market where the cart is pulling the horse, we hope to dig up more trades like this, and to do so with more precision in the coming months. Because by golly it's interesting out there.

Good luck!

The SqueezeMetrics Team

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