S&P 500 Weekly Forecast 3/7

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Hey guys,

We've had a lot of complicated, long-winded notes recently. Let's try to ease up a bit this time. Less in-the-weeds, more ten-thousand-foot-view.

Our in-the-weeds support-momentum (SuMo) bands worked *really* well this week. So yeah, we think they're useful, but you knew that already.

They're now on the Master Spreadsheet, and will be updating every morning along with all the other stuff. There's a full history of the bands back to 2004 on the sheet, too. Please do test and ponder them.

Interestingly, we found that the impact of the bands from 2004 to 2016 is just as strong as 2016 to 2021. This has strange implications. Chief among them: If the signal worked in 2004, how could it be about "gamma." There wasn't *nearly* as much dealer gamma in 2004 as there is now. So is this phenomenon more fundamental than "dollar gamma?"

It *must* be. Hmm...

But let's put a pin in SuMo for now and move on to something different that we've been meaning to talk about. Or at least something that, at first blush, *seems* different: *The volatility cone*.
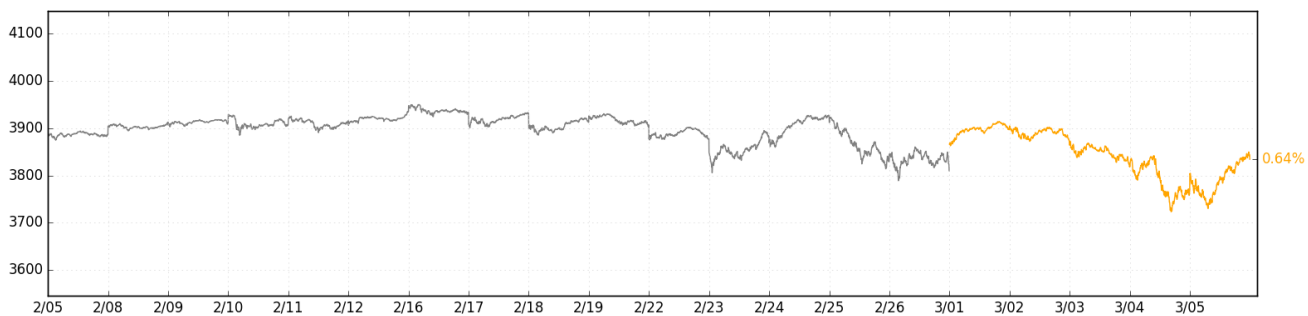
But first...

1. Five days without DIX makes one weak
2. Limbo
3. I scream "cones!"

Five days without DIX makes one weak
We'd been short March VIX from the week prior into this past week. It was the only position we were interested in taking. Having been short the contract at 28.00, we felt we had a lot of wiggle-room for profit.

That assumption was tested as the week progressed.

It was a four-day bearish rollover with a gamma-stick-save at the end, bringing the index back to approximately flat on the week. If you have the intestinal fortitude to collect the "mean-reversion risk premium" implicit in SPX option pricing, then you may have sold an iron fly for this week.

> We often regret saying this lately, but it looks like it ought to be a good week to sell iron flies, too. But to be clear, we're just going to be super basic and sell VIX. Maybe pick up a Starbucks coffee, too.

And if you did, more power to you (we did not).

We mentioned that we got *extra* short March VIX on Thursday, perceiving a very nice risk-reward, as well as a good probability of a Friday rally. It worked out nicely, and we were back to a normal-sized short VIX position at the close on Friday. To boot, if you were trading on those SuMo bands (as we were), you should have done well. The bands were very helpful throughout the week.

But the week ended on a not-so-bullish note. After four days of low DIX prints (~40%), *another* ~40% print rolled in on Friday, confirming that the rally was a matter of volatility, rather than of organic demand for shares. Welcome to limbo.

Limbo
The Probability Page tells us, again, that near-term options are overpriced, based on actual probabilities. Here are the 1-week densities:
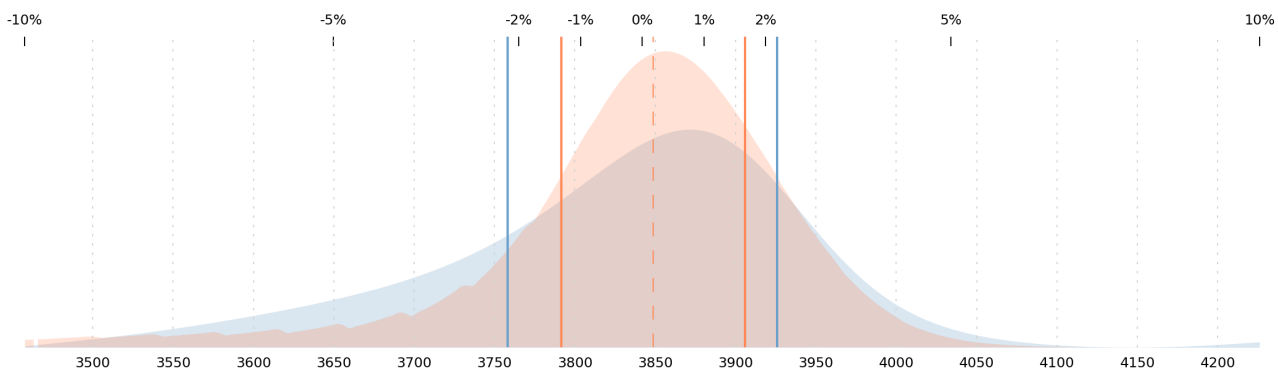
The vanna-gamma ratio (VGR) is still fairly negative, which predicts VIX falling. Bullish. This agrees with the densities above (which are coming from GEX+).

Counterpoint: DIX at 40% predicts flat-to-down index returns, and that the 1-month move in SPX will exceed that implied by VIX. Not-so-bullish. Also, net put delta (NPD) from Friday was -3.94. This suggests that not as many puts were bought as usual on Friday -- which marginally increases vol-of-vol. If this continues, it will

become difficult to be short VIX without a hedge, since the probability of a big spike in VIX increases.

So we're getting mixed signals. A guess? Choppy market, flat to down.

Iron intestines can keep selling their 1-week iron flies. We're still short March VIX.

I scream "cones!"
Realized volatility has a relationship with implied volatility (oh really?). When 30-day RV is 50%, 30-day IV probably won't be 10%. When 30-day RV is 10%, IV probably won't be 50%. A lot of ink has been spilled about this. A lot of sophisticated models try to draw the connection between RV and IV.

One much-less-sophisticated, much more old-school (say hello to the '90s) model of drawing their connection is the volatility cone. Here's one from Peter Hoadley:
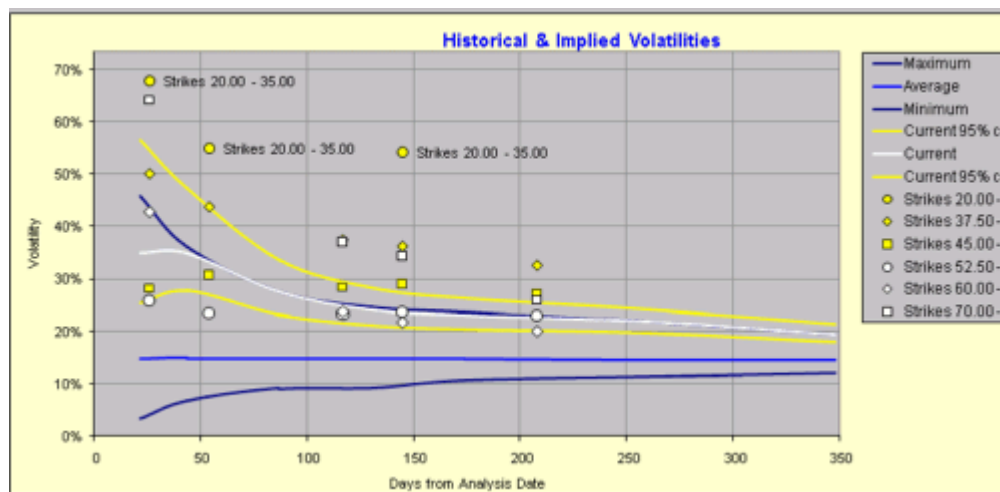
The idea is to visually overlay historical volatility on top of implied volatility. It gives context to recent volatility and option prices, and would give you a sense of whether options are cheap or expensive, relative to recent moves. Pretty simple, right?

Well... it's really important to understand that there is no *necessary* relationship between RV and IV. Sure, volatility is mean- (or mode-) reverting, and has "regimes," and sure IVs can contain gamma risk premium, term risk premium, event risk premium... yadda-yadda. But there's no *necessary* tie between RV and IV at any moment, and that's a huge part of why people use crazy things like autoregressive conditional heteroskedasticity models to draw them together -- because it's all very tenuous.

So if we were to declare that, in the case of the S&P 500, there is a mechanism that *actually* draws RV and IV together in a big way, you'd find that interesting. That mechanism is VIX futures.

You may think you have a sense of where this is going. It's been said many times before: When realized volatility falls, volatility products allow people to bet against future volatility, so they do, and they bring IVs back "in line." You may have heard this about variance swaps, VIX futures, or volatility trading, broadly. But that's not what we're going here.

Rather, what we find interesting about VIX futures is that they are ostensibly a product that is designed to facilitate the market for VIX options. I.e., "options on volatility." This was Cboe's plan all along -- to be able to list options on vol. From a market-history standpoint, VIX futures are just the contrived delta-hedging instrument for VIX options. So, who cares about being able to trade options on implied volatility? Like, how is that a useful portfolio tool for anyone but a vol trader?

It's not. At least *not until you assert that there is a strong relationship between RV and IV.*

Because if you *can* assert that there is a strong relationship between the RV and IV of the S&P 500, then you can tell a portfolio manager that VIX options ("options on implied volatility") are functionally the same as options on *realized* volatility. And options on *realized* volatility are a *magical* portfolio hedging tool!

Think of it this way: You're long S&P 500 past your comfort zone, because you have to be (TINA!). If SPX moves too much, you hit risk limits. You want a way to guarantee that every move is automatically hedged, so you don't move outside of those volatility bounds. What you need here is an option on realized volatility. E.g., a long call on vol struck at 20%, such that any move in realized volatility above 20% is hedged. You're willing to pay a lot for this, since it allows you to keep a lot of equity exposure that would be uncomfortable otherwise.

But when you ask your broker for a call option on realized volatility, you find out it doesn't exist. It's too hard to replicate the payoff of the option that you need, so nobody will quote it. But something very similar exists in VIX options! Here, you can buy a 20-strike VIX call, and if 1-month IV rises above that level, you get a hedge payout. The only problem is that IV doesn't *have* to track RV -- but when you buy that VIX call, you're *kind of counting on it.*

VIX options are used this way. Call it an "off-label" use if you like, but it's really the whole point of the product. This draws a very unique relationship between SPX RV and SPX IV that you won't find anywhere else in markets. And it's the broad implications of this odd relationship that we want to think about over the next few weeks.

To kick that off, we'll be drawing volatility cones like it's 1999. Next week, bring a pencil.

Enjoy the week!

The SqueezeMetrics Team