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Global distribution of earthquake probabilities

Current Views

Flat

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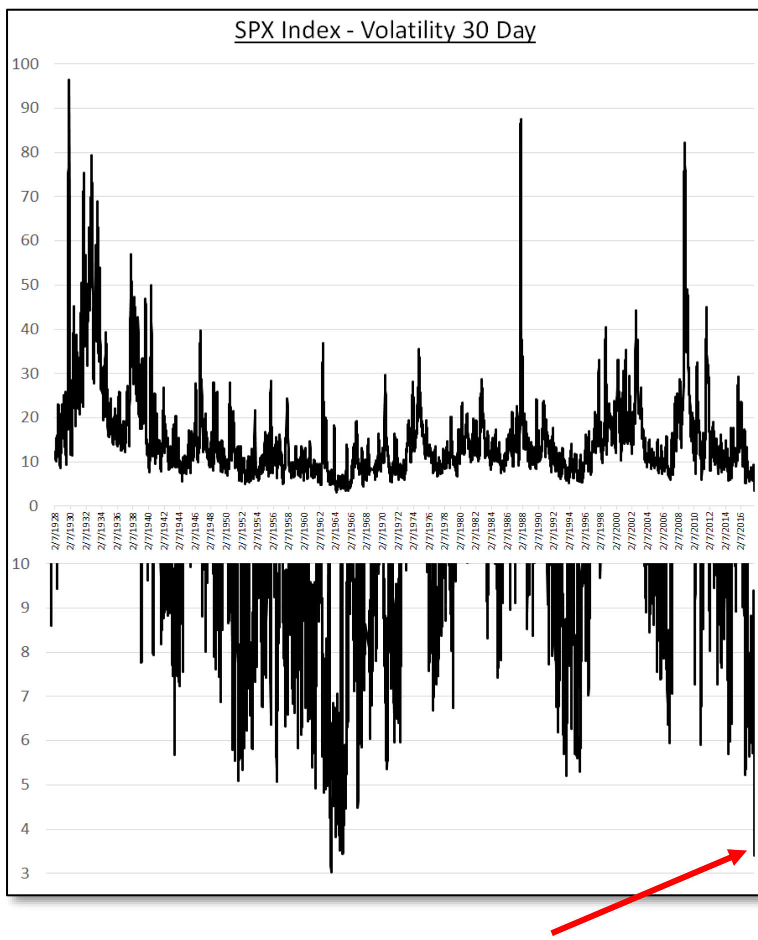
The Short Vol Bubble

I am back from Chicago, where I attended a conference on liquidity, volatility, microstructure, derivatives, financial math and other topics. In attendance were some notable academics, including John Hull (who wrote my university Finance textbook) and Peter Carr plus 100 or so other participants from The Fed, CFTC, banks, HFT firms, and other buy side and sell siders. Many discussions were outside my normal wheelhouse of macro trading and behavioral finance so the conference was interesting and educational while still highly relevant. Here are my takeaways:

1. Low volatility is on everyone's mind and it is hurting HFT as much as traditional Wall Street buy and sell side. More than one participant called the current market state "The Short Vol Bubble". Here is a chart of 30-day realized vol in the SPX. The top is the full chart and the bottom shows only readings below 10. You can see we are now way lower than 1995 or 2006 and nearing the all-time lows set in 1964. The same chart of TY looks similar while FX and commodity realized vols are low but not all-time low.



This is realized vol. Chart by AM/FX. Data from Bloomberg

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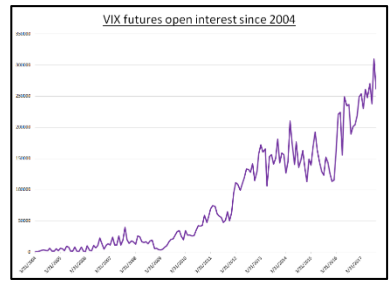
The low vol discussion fell into three buckets:

1. **Causes of low vol**
    a. Central bank intervention / forward guidance
    b. Low economic volatility
    c. Vol selling for yield. Volatility used to be viewed primarily as a hedging tool. Now it is viewed primarily as a yield-producing tool. There is a growing cohort of market participants (many in retail) whose only strategy is to sell vol. Some conference attendees felt there are echoes of the "commodities as an asset class" debacle of 2008 in the current popularity of "volatility as an asset class".



    d. Low risk-free rate
2. **Risks from low vol:** Clearly a world where many more participants generate returns by selling vol is more dangerous than one where participants primarily buy volatility from market makers in order to hedge. The overall short vol position is very hard to measure but may pose a meaningful systemic risk.
3. **Possible catalysts for a vol reversal:**
    a. Inflation
    b. Recession
    c. The end of global QE

2. Low vol is hurting everyone, not just mainstream Wall Street. There was a noticeable malaise in the HFT community as performance has been poor and this has led to shutdowns and consolidation (examples: Teza, Sun Trading, Timber Hill, KCG, RGM). Profits in HFT have been crippled by flat volumes, low volatility and the unwinnable speed and latency wars. The HFT arms race has greatly increased the cost of trading while only delivering temporary benefits to the fastest participants. A faster technology and faster competitors always lurk around the corner so **all gains from increased speed are ephemeral**.

3. Fragmented and illusory liquidity is a problem in every market. Markets are increasingly splintered as there are more ECNs than ever in equities and FX. **Much of the visible liquidity is a house of mirrors where every price is just a reflection of every other price** and movement in any one price triggers movements in all the others. This creates markets that are superficially liquid most of the time but also extremely fragile. Market depth is not persistent or firm. This is a concept I discuss in my Fatter Tails piece and seems to be a market feature (not a bug) going forward.

    There were several panels on liquidity and microstructure and one stand out presentation was Yuhua Yu's study of flash crashes. Her conclusion is that these massive, rare and unpredictable liquidity black holes are an inevitable and endogenous feature of algo-dominated markets; much like earthquakes are a feature of certain geographies. Market making algorithms with intraday exposure limits along with volume-targeting strategies (VWAPs, etc.) will occasionally combine with noise traders, momentum / burst detection algorithms and large orders in a self-amplifying way to create non-linear price moves that would be less likely in non-electronic markets.

    One panelist made the observation that while electronic trading may raise the probability of occasional flash crashes, the liquidity and efficiency benefits of electronic trading far

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outweigh the costs. He said the volume of negative press on electronic trading is unwarranted and pointed to this interesting Wharton paper from 2014: Algorithm Aversion: People Erroneously Avoid Algorithms After Seeing Them Err. Another participant argued that better-designed algorithms will eventually reduce or eliminate flash crashes. He made an analogy about badly-written algos with this Russian proverb: "If you teach a fool to pray he'll break his forehead." I thought it was funny but nobody else really laughed (!). His point is that the industry's been keen to adopt algos without first thinking through their proper use.

4. There was an interesting discussion of adverse selection in one of the HFT talks. The basic idea was that if a system generates many signals but is only able to trade on some of them, are these trades likely to be victims of adverse selection? In other words, if you can put the trade on, does it mean that smarter or faster systems have already passed on the trade, and that's the only reason you are able to execute?

   This adverse selection idea resonated with me because I think it applies to the current state of lead/lag trading. I have been thinking about this a lot because I believe that lead/lag (or cross-market correlation) trading has become much less profitable in recent years. This is because everyone has access to the same information (real-time feeds, correlation data, etc.) and follows all markets, not just their own. There are hundreds of overlays flying around on the internet and by email every single day and this was certainly not the case 10 or 15 years ago. Meanwhile, many, many algorithms execute cross-market correlation trades in real time.

   Let's say bonds pop seven ticks and USDJPY still has not moved. Short USDJPY looks like a potentially good short-term trade, right? But the adverse selection argument kind of suggests that if USDJPY hasn't already moved (i.e., you are able to do the trade still) maybe it is not a good trade since all the algos are already short having sold faster than you. Maybe the good trades are the ones where an algo hits USDJPY instantaneously in reaction to the bond move and then buys back lower right away? Adverse selection suggests the more players are doing these trades, the less desirable the remaining ones are likely to be for the slower, humanoid participants.

   I have not given up on lead/lag as a trading style but I believe the style is much less useful and profitable now compared to say, 2006, when humans did more than 50% of all FX trades and many of those humans did not even have live feeds for gold, oil or S&Ps!

   This concept of adverse selection also applies to e-trading and voice trading businesses as we always need to worry that if clients have many streams and prices, the risk is that they trade on our price only when it is extremely skewed, or wrong. The best remedy for this, in my mind, is to give customers more than just a price. Clients who believe you add value will be more willing to trade on your fair market (not choice, inverted or wrong) price.

5. There was a lot of discussion on regime switching models. I think this has a useful read through to discretionary / human trading. Good traders should always be asking: "What regime are we in?", "How will I know we are switching regimes?" and "What trades are appropriate for this regime?" This can refer to volatility regimes but also to regimes of correlation between asset classes, overall volumes, jump risk, vol of vol and dispersion between currencies.

   For example, in the current low-vol regime, I find breakout strategies are totally useless. But in 2008 (Cross/JPY during the GFC), 2012 (USDJPY during Abenomics) and 2014 (EURUSD as ECB started QE) they were highly profitable. A second example of how I look at the current low-vol trading regime is that I find buying directional short-dated vol through events works well but owning gamma or longer-dated options does not. Etc.

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6. Adapt or die. The skills and techniques of the profitable human trader vary over time just like the best HFT strategy today is likely to be harvested and become crowded over time. Good systems (human or electronic) are adaptive and good at regime switching. When I first sat down on the spot desk in 1995, my boss (honest fellow that he was) said to me: "You're in the right place at the wrong time, kid. This is all going to be gone in 10 years."

    Boss waves hands at massive and frenetic 35-person spot desk…

    In a way, he was right. Automation has massively downsized the FX trading business. Economic data is untradable as algos suck up all the resting orders before humans can react. Transparency has crushed bid/offer spreads. But in a way he was wrong. The remaining FX trading jobs are much more interesting and intellectually rewarding than the jobs of old. E-trading jobs are plentiful. Careers in FX trading remain highly desirable.

    Another example: In 1999, I was trading my own money at a day trading firm. Things got surreal for about 18 months as the money rolled in fast and furious. The opportunity set was incredible. Then, in March 2001, decimalization and the tech bear market triggered a massive regime shift and I was too unthinking to adapt. I was gone by 2002.

    We all need to be relentlessly thoughtful about what it means to survive and prosper in the current regime and we need to remain on high alert for the arrival of the next regime, whatever that might be.

Finally, I took profit on the GBP short from Wednesday. The Bank of England look to be copying the Bank of Canada playbook: Remove the insurance, then wait. The goal was to make 250 pips and GBP dropped 238 so target achieved.

Thanks for reading and have a highly liquid weekend.

Good Luck ↕ Be Nimble

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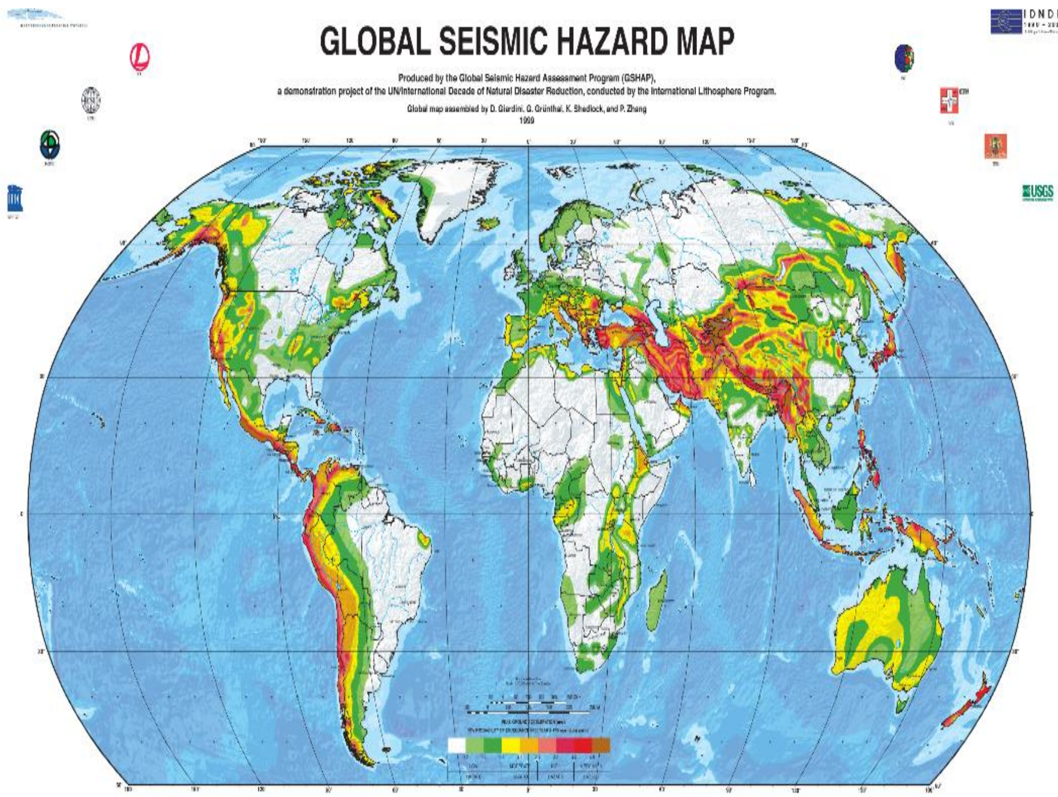

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