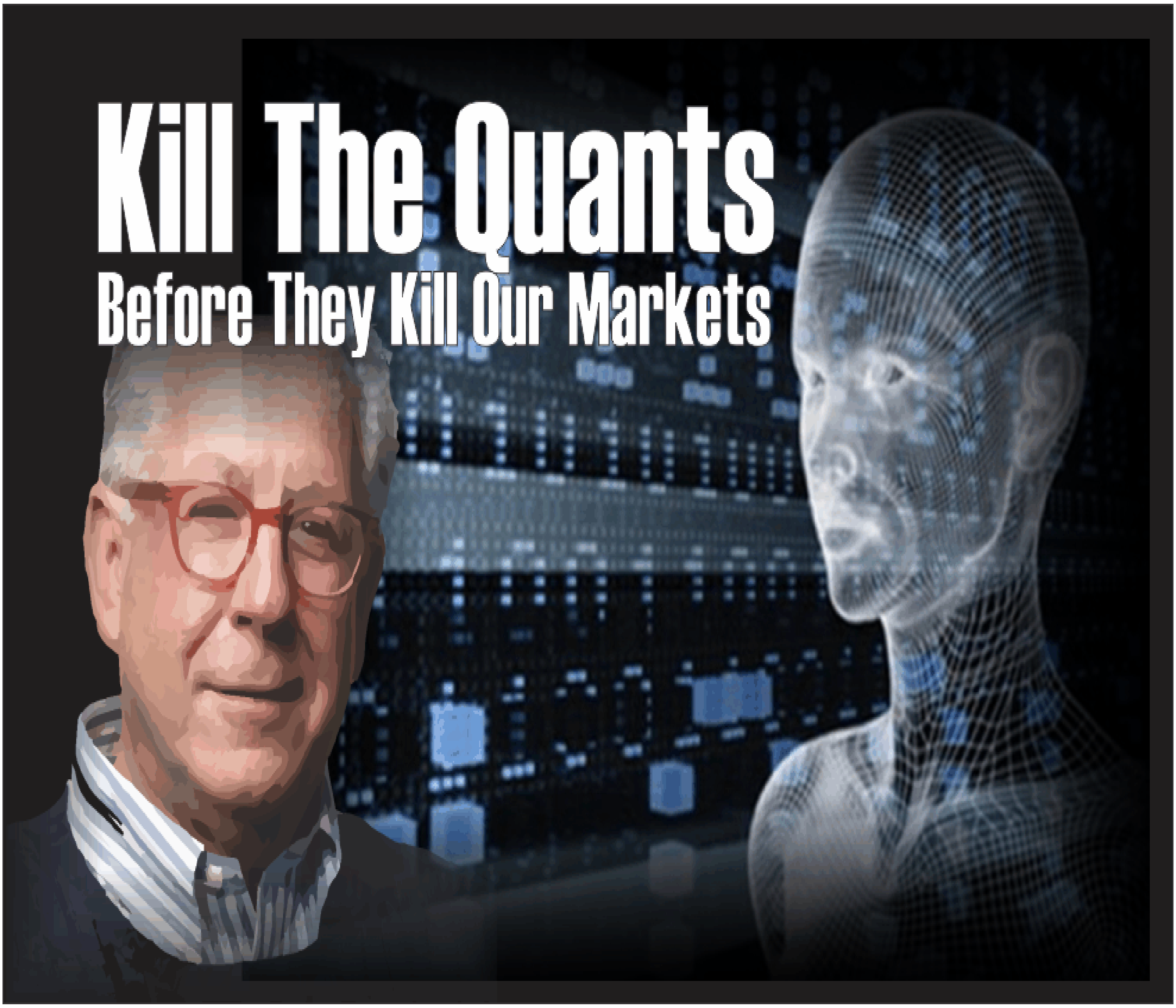

** Friday was likely the day the short volatility trade died * A massive regulatory overhaul is needed to counter the destabilizing influence of strategies and exchange traded products that have overwhelmed our markets*

For years I have warned about the explosion in popularity (and listings) of ETFs (which now outnumber the number of publicly traded companies) and ETNs - in an oft repeated column entitled..."*Kill The Quants Before They Kill Our Markets."* In pointing out the risks of the "new" versions of strategies purporting to be able to control risk (on the fly) -- mine was a voice in the wilderness, ignored by the majority of market participants who were enjoying the bullish fruits and impact of these newfangled strategies. Indeed it took a bit over six years for XIV (an inverse VIX product, its VIX spelled backwards!) to rise from $10 to $144 but only one day for the product's price to implode to $0. As blogger Quoth The Raven tweeted this morning: *"Six years of picking up pennies in front of a bulldozer wiped away in one session."* Nomura's Charles McElligott (who I have quoted extensively over the last year) was another voice: The "grey swan" we all have spoken about for years --**that being the absurd "tail wagging the dog" potential of VIX ETN**

market structure (inverse and leveraged products) AND the massive growth in "negative convexity" / "vol target" / "vol rebalancing" strategies to either generate extra income or "systematically allocate risk" (looks good in the prospectus, right?!) -- finally "broke" the volatility market, and has now bled-through to the "underlying" spot equities market...**as the short vol trade went "lights out."** The ETNs are the "patient zero" of this current market meltdown. **It is estimated that there was anywhere from ~$125mm to $200mm of vega / VIX futs to BUY on the close from the two main "short VIX" ETNs that rebalance daily (XIV and SVXY).** As S&P traded -50 handles AFTER the cash close from 4:00pm to 4:15pm into the market's anticipation of the massive rebalancing of volatility (buy to cover) on the close, XIV then saw a delayed and terrifying ~***-87 PERCENT move after the close, as some who owned XIV puts as crash protection sniffed this potential and speculated liquidation from the ETN, which is set per a rules-based system to buy back short vega after an 80% "crash trigger"(which again isn't a certainty because they use a blend of 1st and 2nd month).*** The asset pool nonetheless was seemingly / largely wiped-out and the note is guaranteed to "pay out" to their shareholders as set per their prospectus. **It is likely that this thing has indeed been "triggered" and will be forced to liquidate. SVXY doesn't have the firm 80% "trigger" but too is seeing its NAV "wiped out" and is trading ~-80% post-close as well. The issue NOW is the pile-on going-forward across assets, as the systematic "short vol" community's models are now completely toast, and they too will be forced to cover remaining "short vol" positions that didn't trade today-i.e. BE PREPARED FOR A MAJOR VIX FOLLOW-THROUGH TOMORROW.** *VaR-based models need to be reset across all asset-class strategies, forcing further de-risking over the coming days and potentially weeks, as heads of funds and heads of risk try to figure out how much their models are forcing them to "gross-down." Shorter-term vol target / vol allocation strategies (think CTAs) and longer-term models like risk-parity and too will reset and "rebalance" their risk (lower) as realized vols are re-priced. Structured products, annuities and other vehicles with built-in protection? Also purging exposure on the vol reset. Finally, it also shouldn't be lost on the popularity of "short VIX" trades in the retail community, and the "butterfly flapping its wings" relationship to the recent melt-down in the crypto-currency space.* - Fade to Black• Until Friday, when we experienced a "come to Jesus" moment for structured products and relational quant strategies (e.g. risk parity and short vol), few listened to our concerns of a possible *Short Volatility Armageddon* caused by a rapidly changing and dangerous market structure in which VIX products multiplied like weeds. I believe the precipitous market drop in the last week has little to do with the projected course of interest rates or, for that matter, fundamentals. It likely was a function of the distorted, dangerous world of new investment products and strategies. As discussed below (and above), the proliferation of short vol, volatility trending and risk parity strategies when combined with an explosion of leveraged ETFs and ETNs -- many of which were derivatives of derivatives and had no business existing except to please gamblers -- had altered the market structure in as extreme a manner as *Portfolio Insurance* did 30 1/2 years ago (which led to the October, 1987, crash). Back then, *Portfolio Insurance* proved to be a bridge too far that added a dynamic component that would attempt to increase the hedge as the market was **declining** but which (1) served to actually **increase** the downward volatility of the market and (2) whose very ability to be executed depended on market liquidity being available but which their strategy of selling **more** at lower prices (as the market declined) would quickly exhaust and then destroy that liquidity very, very quickly. The SEC was asleep then (in 1987) and the SEC is asleep today. The kennel of VIX related products (that have become the tail that wags the market's dog -- should be closed down, post haste. Market participants (and regulators) have little understanding of the technical nature of these products/strategies or the domino and ripple effect. Many of these ETF products and options should be suspended and outlawed and the issuers should be held to account. It's bigger than bitcoin -- and bitcoin is a dumb idea! Unfortunately I can not see with clarity how the genie of quant strategies, ETFs and ETNs are taken out of the (market) bubble -- particularly with the inertia of the regulatory authorities like the SEC. Last night I sat next to the New York Times' Jim Stewart at dinner -- with my iPhone between us, spewing out the news that the market disequilibrium had been upset like nothing I had seen in decades. Jim and I chatted while watching (laser focused) the overnight market disorder -- at its nadir, DJIA futures fall by -1200, S&P futures nearly -125 and Nasdaq futures collapsing by over -220 against fair market value. I expanded further on some of continued concerns regarding the market's structural problems in yesterday's opening missive; and in my last post on Monday evening, *"Revenge of the Machines":*

"Surprise #9: In 2018, the global volatility bubble bursts in a spectacular fashion, with stocks falling by 15% in one session."

-- Kass Diary, A Market That Continues to Underprice Risk I spent the better part of 2017 and all of 2018 warning about the possibility of another flash crash -- caused by a dangerous shift in the market structure which was led by leveraged actors who conducted short volatility and risk parity strategies -- who are agnostic to balance sheets, income statements and intrinsic value. (Read my 15 Surprises for 2018 and this morning's lengthy discussion in my opening missive.) That shift in structure coupled with the popularity of passive strategies (ETFs) continued to have a pronounced impact on the markets, pushing volatility to (a hat size) of record lows and stocks to record highs -- arguably, creating something of a "buyers panic" in January as late coming retail investors (suffering from "FOMO") poured a record $50 billion into the coffers of domestic equity funds. This buyers panic occurred in a backdrop of less liquidity and lower market volume -- further exacerbating the late 2017/January gains. That buying forced RSIs towards unprecedented levels as investor sentiment surveys made multi-decade bullish highs. As stocks climbed ever higher, skepticism and doubt were nearly abandoned and assessment of risk vs. reward took a back seat to bullishness. The constant shorting of volatility, I warned, could resemble having the role of portfolio insurance which caused a rapid drop in stock prices in October, 1987. I even called short vol having the potential label of Portfolio Insurance (Part Deux). The S&P Index (adjusted for the after hours S&P futures weakness of about another 30-40 handles) is now almost 285 handles below the level of only a few days ago. This has served, according to my calculus, to move the downside risk relative to upside reward from 4:1 (negative) to less than 2:1 (negative) -- using an expected trading range for the S&P Index in 2018 of between 2200 and 2800. I am of the belief that today's action was forced and, in a sense, a mechanically -- inspired decline (remember the S&P Index was actually higher at one point in this session). Oddly missing in the media discussion today has been the interest rate reaction -- a flight to safety that took the ten year US note down by nearly fifteen basis points (to 2.70%)! This move may be interpreted as confirmation that the market's precipitous drop today was structural and not necessarily rate related. That is not to say that we will necessarily have a "V" type reaction. I dont know ... and anyone who expresses certainty (as many have) should be avoided and ignored. We must wait and let the derisking of short vol and risk parity work itself out and run its course. The magnitude of the short-term market decline has likely contributed to margin calls and retail redemptions which will further complicate the timing of a recovery. I aggressively traded a lot of Spyders (SPY) today and I am currently paying $260.20 in after hours -- based on a view that this is a short term opportunity (but solely for a trade). And I covered a number of shorts (at what I believe to be favorable prices) -- particularly in financials -- during the quick whoosh lower in the late afternoon. I took a number of shorts off of my Best Ideas List as the risk/reward ratios have abruptly changed -- with many stocks down by 10% to 20% from a week ago. Values will likely be created in the days and weeks ahead. But in order to capitalize on those opportunities one has to be almost emotionless -- not an easy task in a downturn like we have experienced in the last few days. Let me end a hectic day with a column just written by JPMorgan's global quant, Marko Kolanovic entitled "Flash Crash, Flows and Investment Opportunities": "In last week's note, we noted that volatility, at the time, was not sufficient to trigger systematic strategy de-risking. On Friday, the market dropped ~2% on a day when bonds were down ~40bps. The move on Friday was helped by market makers' hedging of

option positions (as gamma positions turned from long to short midday). Friday's move, on its own, was significant as it pushed realized volatility higher, which is a signal for many volatility targeting strategies to de-risk. Anecdotally, broad knowledge about the risk of systematic selling kept many investors fearful and waiting on the sidelines (both in equity and volatility markets). Midday today, short-term momentum turned negative (1M S&P 500 price return), resulting in selling from trend-following strategies. Further outflows resulted from index option gamma hedging, covering of short volatility trades, and volatility targeting strategies. These technical flows, in the absence of fundamental buyers, resulted in a flash crash at ~3:10pm today. At one point, the Dow was down more than 6%, and later partially recovered. After-hours, the VIX reached 38 and futures more than doubled-it is not clear at this point how this will reflect on various short volatility products (e.g., some volatility ETPs traded down over 50% after hours). Today's large increase of market volatility will clearly contribute to further outflows from systematic strategies in the days ahead (volatility targeting, risk parity, CTAs, short volatility). The total amount of these outflows may add to ~$100bn, as things stand. However, we want to point out the massive divergence between strong market fundamentals and equity price action over the past few days. The large market decline over the past few days will likely draw fundamental investors and even trigger pension fund rebalances (those that rebalance on weight thresholds). We also want to highlight a strong probability of policy makers stepping in to calm the market. Rapid sell-offs, such as the one today, can also be followed by market bounce backs as liquidity gets exhausted by programmatic selling. With next year P/E on the S&P 500 now below 16, further positive impacts of tax reform and stabilization of bond yields (e.g., note the current record level of CFTC bond short positions), we think that the ongoing market sell-off ultimately presents a buying opportunity."