The Mirror Crack'd

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In *Antifragility Revisited*, our February *Quant Corner* note, we introduced a mathematical concept linking asset returns and asset volatilities to measure the fragile, robust, or antifragile natures of various asset classes. All equity indices are fragile assets. When shaken, they lose value. And the measure of their agitation—the VIX, in the case of the S&P500—reflects the image of equity returns, as would a mirror.

No surprise then that financial risk algorithms send sell orders in equity markets when the VIX spikes. This is what happened during the February 2018 mini-crash: a short squeeze on an illiquid market (the VIX), generating amplified sell orders on the underlying asset market (the S&P500). A crime scene with a limited number of protagonists, a few apparent victims and… a hidden one!

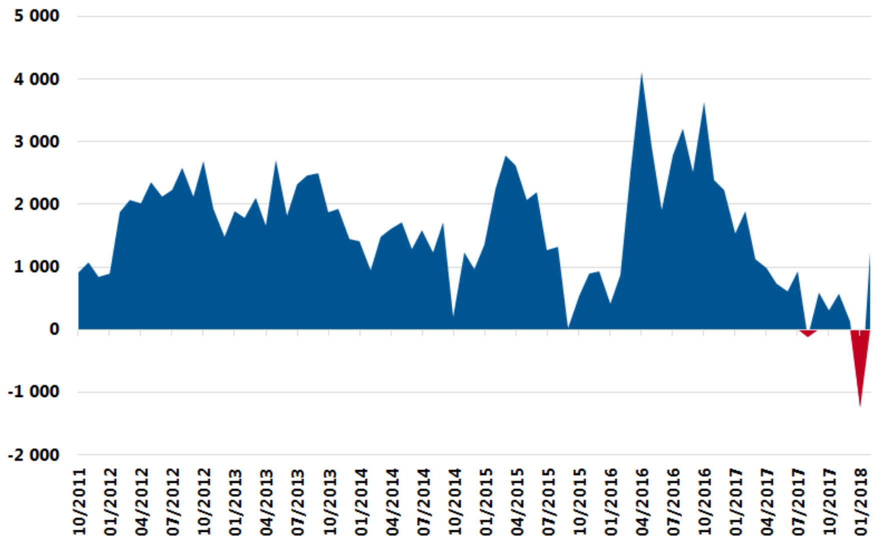
In this new Quant Corner episode, Miss Marple consults TrackMacro, the Gavekal A.I. macroeconomic algorithm, to revamp the original edition of The Mirror Crack'd.

Protagonists

The first protagonist is the ETF/ETN market. For the first time in history, the net market position turned deeply short in January, as evidenced in the following graph.

Short ETF positions are hedged on the VIX by ETF issuers, so the global delta position on S&P volatility isn't affected. The so-called "gamma position", however, turns negative. If the VIX spikes, then the nominal value of short ETFs collapses, and ETF managers must rush to buy back VIX contracts for hedging purposes. By doing so, they create a destabilizing positive feed-back loop.

Graph 1. Top 10 VIX ETF/ETN Equivalent VIX Exposure in Million USD



Source: Bloomberg, Gavekal Intelligence Software

The second protagonists are the computerized risk management systems automatically adjusting equity exposures to risk exposures. They diffuse and amplify the VIX shock to world equity markets.

The third usual suspects are the antifragile asset markets, benefitting from flights-to-quality (Japanese Yen, Swiss Franc, Gold, Treasury Bonds, etc.). They were simply absent in this case, which shows that the equity sell-off had nothing to do with an asset reallocation phenomenon.

Last but not least among protagonists: the macro factors. TrackMacro concludes that they were absent as well.

Apparent victims

The two largest short VIX ETFs, issued by Credit Suisse (XIV) and ProShares (SVXY), lost circa 95% during the VIX spike, and will never gain back their value.

Equity holders on the S&P, for instance, lost circa 10% before recovering half of the loss. They apparently only suffered from inconsequential collateral damages.

However, this is not TrackMacro's view.

The hidden victim

On the 28th of February 2018, TrackMacro switched 29 countries out of 40 to an equity risk-off mode. The technical VIX shock had diffused to macro factors in three weeks' time.

For TrackMacro, **the hidden victim is the widespread euphoria on world trade**, which followed a $1.5 trillion USD tax overhaul package signed into law in the USA at the end of November 2017.

TrackMacro's anticipation of world trade is based on the world trade trend in volume (Bloomberg ticker: MWT VWT) published with a two months' lag, and on a statistical envelope of market prices correlated to world trade. The envelope plays the role of a signal estimator in the missing two months, but with an uncertainty. This explains why TrackMacro concludes on probable risk states, not on effective figures.

This method proved very efficient in the back-tests and was fully successful live in 2015, 2016 and 2017 as well. In 2017, for instance, world trade grew on average by +7.3% annually in the seven months anticipated "positive" by TrackMacro and by +2.0% in the five months anticipated as "neutral". The combination of long-dated macro variables and short-dated correlated market variables enriches the system's ability to estimate behavioral factors, i.e. the 'animal spirit'.

The February VIX shock killed the animal spirit in the world trade macro rule. TrackMacro was left with six other rules to make an opinion on each country. A situation which brought the system back to late November 2017, before the "Trump effect" on US tax cuts, when it first expressed doubts on the sustainability of equity rallies. And the conclusion is similar:

(1) Acceleration of inflation is deteriorating the inflation/growth mix in many countries, a prime equity investment signal coined "The Four Quadrants" by Charles Gave in the 70's

(2) World liquidity in USD continues to shrink in real terms

(3) Commodity price pressures weigh unfavorably on commodity users

The later rule is a zero-sum game for the world but differentiates losers and winners in the process.

Resilient countries

Three groups of countries show macro resilience to the new market environment and remain in an equity 'risk on' mode, according to TrackMacro:

(1) Commodity exporters, apart from Canada and Mexico

(2) In Europe, Italy and Portugal, that haven't yet completed their acceleration phase in the cycle

(3) In Asia, India, Taiwan and Indonesia, that manage to grow and contain inflation with a stabilized currency

Epilogue

TrackMacro is unable to conclude whether the unprecedented February shock on the VIX was a technical market accident or an orchestrated short squeeze. Just as in Marina's death in Agatha Christie's novel, the question remains: is it suicide or murder?

TrackMacro, however, has a distinct view on the current state of equity risks, built on interconnected multi-factors, exactly the type of intricacy Miss Marple loves to challenge.

And its conclusion is crystal clear: 'Risk off' in many countries—the mirror crack'd!