From 'Low Volatility' ETFs to the VIX, on Friday September 9th Market Risk Was Pretty Much Business as Usual.

Market moves in US equities on Friday generated headlines. If they came as a shock to you, your risk system needs help.
From the worst loss since June in the S&P 500, to the volatility of 'Low Volatility' ETFs, to the surge in the VIX, there was nothing remarkable given the daily risk levels we observed before Labour Day.

The S&P 500 had its worst day since June, but...

The loss of 2.45% in the S&P 500, the biggest daily drop since June, was not even close to breaching the 99% VaR level. At the end of August that was 3.2%. So every 100 days, on average, we should expect to see the Index drop by at least 3.2%.

A loss at least as great as Friday's is much more commonplace. It should be expected one day in 58 according to our tail fit a week ago. And, in fact, the last one was 54 trading days ago. In other words a case of 'dog bites man', rather than the newsworthy 'man bites dog'.

Low Volatility doesn't always mean low risk

Volatility is only a primitive indicator of risk. As Cascon and Shadwick showed[1], units of standard deviation don't measure the same thing when returns come from different distributions.

So even knowing that one asset has higher volatility than another doesn't necessarily tell you anything about their *relative* downside risk exposure. Unless some assumption is made about the distribution of returns, there is no way to turn volatility into a probability of loss. And the standard, unacknowledged, assumption that returns are normally distributed, is hopelessly at odds with reality.

The Bloomberg article "Low Volatility Stocks Got Volatile as U.S. Stock Market Sold Off" [2] cited losses exceeding those in the S&P 500 index Friday. Portfolios intended to have low volatility did indeed have a rougher ride than the Index. PowerShares S&P 500 Low Volatility portfolio (down 2.95%) and the iShares Edge MSCI Min Vol USA ETF (down 2.69%) are formed from 'low volatility' US equities.

Both are less risky than the S&P 500 Index as measured by their 99% VaR and Expected Shortfall (ES) levels. But a breach of the 99% VaR level happens on average every 100 days. With VaRs of 2.3% the Friday losses in the Low Volatility portfolios were nothing shocking. They were moderate VaR breaches and far from breaching their ES estimates.

'Low Volatility' comes with Different Volatilities

Bloomberg also cited outsize losses in three stocks which are held by both the PowerShares and iShares low volatility portfolios. Reynolds American Inc. (down 5.4%) had its worst day since 2014 while American Tower Corp. (down over 5.2%) fell the most since 2013.

While the volatility of these stocks may be low by the criteria of PowerShares and iShares, both have 99% VaR levels above those of the S&P 500 itself. Their Friday losses were VaR breaches, but well within their ES levels.

The third stock cited by Bloomberg, Sysco Corp. is, in fact, a much lower risk exemplar of Low Volatility. Its loss of 5.3% was the only mild surprise of the three. But at current risk levels even this loss should have been observed once every 345 days.

Finally, the Fear Index took Fright

Friday's market scares managed to wake up the VIX which rose almost 40% on the day. But as of the Friday close before Labour Day, the ES for short VIX was 38.3% so Friday's jump was, just barely, another ES breach.

So, for all the resultant sound and fury, nothing very exciting happened on Friday September 9, 2016, at least for those with good risk assessment.

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[1] *The CS Character and Limitations of the Sharpe Ratio,* A. Cascon and W.F. Shadwick, Journal of Investment Consulting, Volume 8 Number 1, Summer 2006.

[2] D. Burger, http://www.bloomberg.com/news/articles/2016-09-11/low-volatility-funds-got-volatile-as-u-s-stock-market-sold-off

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