Omega Analysis Notes

Accidents Waiting to Happen - The U.S. Equity Market.

13 January 2020

As the 'melt-up' in U.S. equities continues, the S&P 500 Index, the Nasdaq 100 Index and the Russell 2000 Index are all flashing warnings of the potential for severe drawdowns.

Three very different gauges of U.S. equities, the S&P 500, Nasdaq 100 and Russell 2000 Indices have all been rising rapidly since the Fed-fuelled melt-up began last October. That's not all they have in common. First, during 2018's year-end collapse, they all suffered their worst 20-day losses in several years. And now, as they continue to rise, their 20-day returns distributions are all indicating an uncomfortably high probability of exceeding those losses. If that happens the expected drawdowns would be at a level last seen in October 2008.

Measuring Multi-day Drawdown Risk

Omega Metrics® Multi-day Value at Risk (VaR) and Expected Shortfall (ES) are based on historic multi-day returns, not calculated by naive extensions of daily risk estimates.

The assumption which justifies the 'square root of time' rule for example is that returns are independent identically distributed random variables. But this contradicts the existence of mean reversion, autocorrelation and many other well-known features of actual as opposed to idealised financial time series.

Estimates of VaR and ES at multi-day scales which are based on this assumption cannot present a realistic picture of the risk of drawdowns. By contrast, our VaR and ES estimates, have proved accurate over the past 30 years for the S&P 500, Nasdaq 100 and Russell 2000 Indices.

The success of our tail models means that we can rely on them to calculate the frequency of drawdowns in excess of a given level and the average loss conditional on such a breach[1].

How likely is a repeat of December 2018?

After many years in markets tranquillised by ultra-accommodative monetary policy, the U.S. equity losses at the end of 2018 came as a shock to investors.

In their worst 20-day periods, the S&P 500 was down 12.3%, the Nasdaq 100 13%—both the worst since the summer of 2011 and the Russell 2000 Index dropped by 14.9%—its worst 20-day drawdown since January 2016.

Using our tail model to estimate the current frequency of exceeding these losses we find that these are events we should expect to see once in every 8 months in the S&P 500 and Russell 2000 Indices and once every 6 months in the Nasdaq 100.

But it's not just the frequency that's worrying. The average 20-day losses conditional on such breaches are over 20% in each case— the worst drawdowns since October 2008.

The Inexorable Rise Continues — for Now

The U.S. equity markets continue the melt-up fuelled by the Fed last October. This can't go on forever and a recent survey of CFOs at large U.S. companies showed that 77% of them think the market is overvalued.[2]

Our asset price bubble indicators were triggered in 2013 and now predict losses well in excess of 50% when the eventual correction takes place. But our trend analysis indicates that there may still be some time to wait for that to occur.

In the meantime, the fat tails of multi-day returns distributions mean that the danger of disastrous drawdowns is now uncomfortably high. It's time to prioritise risk control.

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[1] This is exactly the same process that is used to calculate Expected Shortfall. But rather than asking for the average loss in excess of the 99% VaR level, for example, we can ask for the average 20-day loss in excess of some fixed level — such as the 12.3% loss in the S&P 500 Index's worst 20 days of 2018.

[2] *Nearly all corporate CFOs say the economy is going to slow and the stock market is overvalued.* Jeff Cox, CNBC 9 Jan, 2020. https://www.cnbc.com/2020/01/09/deloitte-cfos-say-economy-is-going-to-slow-stock-market-overvalued.html.

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