According to the IMF, Deutsche Bank is the world's most systemically important bank. Its rapidly collapsing share price and protestations that it has no liquidity problems have attracted comparisons to Lehman Brothers in 2008.

Deutsche Bank's risk levels have exploded since our Downturn Indicator marked the beginning of a contraction phase for global equity markets in July 2015. Its shareholders are now exposed to multi-day drawdowns that are just as large as those of Lehman Brothers in the spring of 2008.

Since July 2015, Deutsche Bank's share price has plummeted by almost 65%. Omega Metrics Risk technology provided early warnings of the danger as well as a dynamic hedge that reduces the loss dramatically.

Equity Risks Are High Everywhere

Since late 2013, Unstable Expansion in global equity markets has left a very large gap between the market peak last May and the Correction Level. Multi-day risk levels have exploded in equity indices and individual stocks. Our Downturn Indicator marked the transition from boom to bust last July.

Omega Metrics Risk Technology

Our proprietary technology for market risk measurement provides unprecedented accuracy as risk levels vary through the cycle. It also produces early warnings of asset price bubbles and anti-bubbles. Our trend analysis identifies the transitions between market expansions and contractions.

Together, these analyses have warned investors of the risks of severe loss they faced in their Deutsche Bank positions. For anyone who wished to maintain their investment, a hedging program informed by Omega Metrics technology would have made the difference between a major loss and a minor inconvenience.

Market Risk Measurement

Banks in general and European banks in particular did not share in the rapid appreciation seen in global equity markets since the recovery from the 'Credit Crisis' began in mid 2009. They have, however, participated in the general explosion of risk which global markets have experienced in the past year.

In the summer of 2015, Deutsche Bank's 5-day 99% VaR was 12%. Its Expected Shortfall (ES)–the average loss conditional on a VaR breach–was 19%.This was significantly higher than the STOXX® Europe 600 Banks Index VaR (8%) and ES (11.5%).

Deutsche Bank Has the Same Risk Profile that Lehman Brothers Had in March 2008

As bank woes continued to grow in 2007 and 2008, Lehman Brothers shares suffered large losses and risk levels soared. By the end of February 2008 they had lost 60% from their peak just a year earlier. Things got worse in March when, over 5 days, the share price dropped by 26%.

But, even before this loss, the downside tail of its 5-day returns was so fat that the 5-day 99% VaR was 20% and the ES was 29%. The average loss in excess of 26% that should have been expected was 38%. In June and July 2008, Lehman Brothers had 5-day losses of 33% and 41%.

By April 2016, Deutsche Bank shares had declined by more than 60% from their 2014 peak. By mid June, its 99% 5-day VaR was 19.4% and the ES was 28.4%. In its worst 5 days after the UK referendum result, the bank dropped 21.5%. Our tail model said that a 5-day loss at least this large should have been expected at least twice a year. And the average loss in excess of 21.5% is now expected to be over 31%.

Early Warning of Asset Price Bubbles

Omega Analysis' risk measurement technology reveals predictable Risk Cycles which are leading indicators of market booms and busts.

Unstable Expansions–unsustainable asset price increases–emerge during market booms. They provide real-time Correction Levels that are predictions of the extent to which markets must fall in the subsequent downturn.

Early Warning of Asset Price Bubbles (cont.)

Deutsche Bank shares were in Unstable Expansion at the time of their post crisis peak in January 2014. At that time they were expected to fall by at least 15% to meet the Correction Level and they duly did so in the spring of 2014.

Their recovery in early 2015 was in another Unstable Expansion and at the time of their April 2015 peak the Correction Level indicated a decline of at least 24%. By November 2015, the price hit the Correction Level. It has continued to decline since then.

Trend Analysis

Omega Metrics Downturn Indicator is tuned to observe the transition from boom to bust in the 'long wave' cycles in equity markets. In July 2015, the Downturn Indicator signalled the end of the boom in global equities. This was followed in December 2015 by the same signal for the STOXX® Europe 600 Bank Index.

Omega Metrics Dynamic Hedging

Given the multiple Risk Alert warnings on Deutsche Bank shares, investors who believe that the long term benefits outweigh the risks could have proceeded with a hedge constructed to control their downside exposure.

Given that the same alerts, with less severity, applied across the European Bank sector, a portfolio of short positions could have been adopted. To see what the effect of that approach would have been, we have simulated a pro forma short position in the iShares Euro STOXX Banks ETF.

The success of a hedge depends critically on the varying size of the short position.

In the simulation the ratio of the 5-day 99% ES for Deutsche Bank to that of the Banks ETF has been used as the hedge ratio. The overall long-short position is then adjusted to comply with a Risk Target 5-day 99% ES. Figure 1 shows the result. The performance is only possible because of accurate risk measurement.

What Omega Metrics Risk Cycle Research Can Do for Investors.

The risk warnings of severe multi-day drawdowns, and the trend analysis indicating the transition from boom to bust would have alerted Deutsche Bank investors to the extreme level of risk they were facing. Those investors who believed that the prospective benefits were significant could have hedged their position to turn a loss of 65% since the end of July 2015 into a loss of 11%.

Equity risks are high everywhere. Risk Cycle Research can help you evaluate and hedge your exposures.

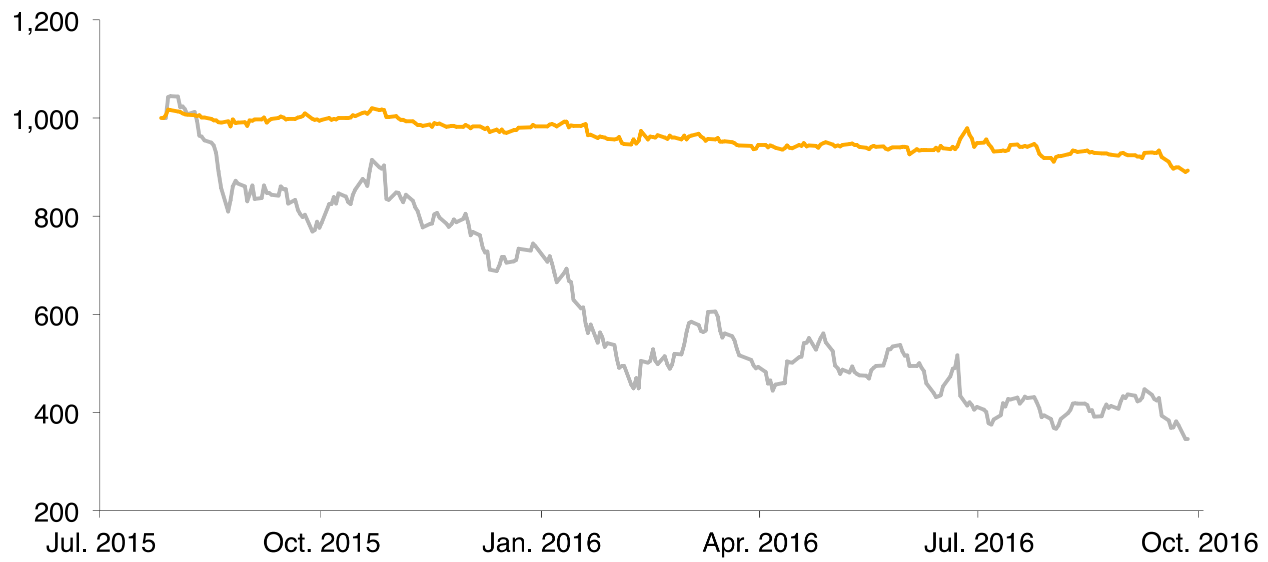

Figure 1. An investment in Deutsche Bank and in a pro forma hedged position long Deutsche Bank and short the iShares Euro STOXX Banks ETF. The size of the short position is determined by the relative 5-day 99% ES levels of Deutsche Bank and the Banks ETF. The long-short portfolio is then sized to meet a 5-Day 99% Risk Target. By the end of September 2016, 80% of the position was in cash. The cash component received a zero return in the simulation and no transaction costs were included.

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