The Universa approach to hedging tail risk

Original headline: Profiting from disaster
Author: Mark Pengelly
Source: Risk magazine | 10 Jan 2011

Elevated concern about extreme events has boosted interest in hedging tail risk, but this means turning conventional fund management on its head. Mark Pengelly talks to Mark Spitznagel, founder of hedge fund Universa Investments

Oscar Wilde once said expecting the unexpected shows a thoroughly modern intellect. After the biggest financial meltdown since the Great Depression, this is perhaps more true than ever. Having been caught out by the ferocity of the crisis, investors are now much more aware of the risks of extreme events – and the fact they seem to occur a little more frequently than many had thought.

This change in perception has led to a growing interest in a new generation of funds designed to perform well in times of crisis. One of the largest is Santa Monica, California-based Universa Investments – a hedge fund thought to have around $6 billion in assets. The company runs a series of so-called Black Swan Protection Protocol (BSPP) funds, which are believed to be structured separately for various clients, but are mostly run using a similar strategy – hedging tail risk in equity markets.

Universa was founded in 2007 by Mark Spitznagel, now chief investment officer, while Nassim Nicholas Taleb – author of the book *The Black Swan* – is principal and senior scientific adviser at the fund. Spitznagel has known Taleb since the 1990s, when he was studying for a master's degree at the New York University Courant Institute of Mathematics and Taleb was teaching as a professor.

"We've been working together ever since. There aren't many of us crazy enough to focus just on exploiting tails and making very rare profits. I would argue there is just a handful of people in the world willing to have boring returns for years and make all their money in one go. I happen to be one and he happens to be another," says Spitznagel.

While Taleb has become the face of Universa, Spitznagel prefers to remain more anonymous. Before founding the firm, Spitznagel worked as head of equity options at Morgan Stanley's proprietary process-driven trading group in New York. He also spent some time trading bond futures at the Chicago Board of Trade, where he learnt the virtue of small losses. "I was pretty much brainwashed by the age of 16 by an old grain trader who said that to be successful, you just had to know how to take a small loss as opposed to a big loss," he says.

The idea of taking many small losses and a few large gains may not appeal to everyone, but it quickly became a fascination for Spitznagel. "We all suffer from this belief in the law of small numbers that makes lumpy payouts impossible. But my early education as a positively skewed pit trader has given me a keen interest in any strategy with lumpy payouts," he says.

Lumpy payouts are the aim at Universa. The funds are designed to make money when markets are tanking – in effect, profiting from disaster. Spitznagel admits this is an unfortunate aspect of his strategy, but the returns can be huge. In 2008, when other market participants were struggling to navigate their way through the post-Lehman turmoil, the BSPP equity funds are believed to have soared by approximately 115%. Investors with knowledge of the company say returns have been slimmer since: the equity funds declined by around 4% in 2009 and 4% in 2010. Nonetheless, the strategy did make money in May, when US stock markets plummeted in just a few minutes on May 6 – an event that has been dubbed the flash crash. Returns that month are thought to have been around 20%.

Spitznagel stresses the role of a tail risk fund is to hedge an existing strategy. Notwithstanding this, the fund has performed well as an absolute return vehicle, he acknowledges. "Universa has outperformed pretty much any other strategy I can think of since inception, but we have done it in a very lumpy way. So for the most part, it's not very compelling," he says.

Most hedge fund managers shy away from volatility in their returns, but Spitznagel believes it is a great advantage. Not only does it provide the tail risk hedge Universa's investors are looking for, but it also keeps the competition away. "It saves us because ultimately it keeps away competitors – they always move to greener pastures. The lumpiness of our payout is to our advantage," he asserts.

Universa achieves its returns using a form of volatility arbitrage, playing parts of the S&P 500 implied volatility surface against each other. The strategy is informed by prospect theory, or the idea people value gains and losses differently, explains Spitznagel. "We aim for extreme convexity that's mis-priced. We know people are systematically loss-averse, which diminishes marginally," he says. "So people and institutions are always over-hedging in the wrong places and over-hedging frequent small losses at the expense of infrequent large losses."

Although the analogy might sound strange, Spitznagel compares his strategy with value investing. Typically, value investors seek to buy stocks that look cheap on the basis of long-term fundamentals, regardless of short-term market swings. Similarly, rather than being concerned about market pricing and monthly returns, he is more conscious about the expected value of his portfolio over time. Both cases involve focus and discipline in the face of lumpy returns, he argues.

By running a strategy specific to equity tails, Spitznagel doesn't necessarily have to know exactly how the next crisis will unfold. "It's a mistake to try to be all things to all people and hedge all tails at the same time. If you try to be all things to all people, you end up being nothing to anybody," he says.

In the case of Lehman Brothers, the firm's collapse in September 2008 was just one of a number of events that could have caused stock markets to fall and volatility to spike. Trying to plot the exact path of future crises amounts to misplaced precision, he suggests. "It's a mistake to be on guard against specific scenarios like what happened with Lehman. We insist on taking a broader view of crises, of not hoping for certain correlations or similar paths as in the past."

Nevertheless, he has some thoughts on possible black swans that might appear. He is deeply sceptical about the solvency of the banking sector, which he believes is being propped up by a relaxed application of mark-to-market accounting rules. While this won't inevitably lead to a crisis, it remains a possibility, he thinks.

Another source of worry is the Federal Reserve's efforts to keep interest rates low through quantitative easing – a measure that has encouraged investors of all types to put money in risky assets. By doing this, Spitznagel believes the Fed is deceiving investors about the true level of risk in the financial system. What is more, market participants have been putting on similar types of trades, meaning any unwinding will be sudden and highly correlated, he argues. "Everybody in a sense has the same trade on now. They may be in different asset classes, but they're all investing for the same reason. If the underpinnings of that disappear – and that could happen for a variety of reasons – everything starts to wane."

In fact, Spitznagel believes the Fed's ultra-loose monetary policy has already had negative consequences. By encouraging investors to take aligned risky positions, it helped create the circumstances for the flash crash, he says. "A lot of studies have been done on this idea of critical ruptures. When you have agents or moving parts that are all looking at each other, they're all going to go up together and they're all going to go down together. It creates a very fragile state."

Critics might accuse Spitznagel of deflecting attention from his own fund. Days after the crash, Universa came under scrutiny for buying a large amount of S&P 500 puts shortly before the market's rapid decline, and even received a subpoena from the US Securities and Exchange Commission. He denies the firm had anything to do with the panic and suggests it is ridiculous to think the crash was caused by a single trade. US regulators seem to agree, essentially blaming the stock market slide on an unlucky chain of events

The topsy-turvy returns generated by the company make judging performance a difficult task. While most fund managers compare their returns with a benchmark index, there is no yardstick for Universa's funds. Instead, performance is compared against a systematic strategy of buying S&P 500 put options struck at 90% of spot. This is a terrible hedge for equity portfolios and sets a low bar, argues Spitznagel. A better way to assess the firm's performance is to compare the returns on a portfolio invested entirely in the S&P 500 with those on one hedged with a BSPP equity fund, he believes. In theory, investors should be able to take advantage of any drop in the market by reinvesting gains from the BSPP funds into the S&P 500. An S&P 500 position hedged in this way would be up 90% since 2008, he reckons. "For most people, their portfolio would look dramatically different without the Universa BSPP hedge."

Spitznagel is critical of alternative hedging strategies involving options. Instead of spending money buying 90% put options, investors would do better to "put the money under the bed – or better still, give it to charity". Put spreads, which involve the buying of a put option that is partly financed by the selling of a put at a lower strike, are also less than perfect. "It feels better than buying a put, but in a crash it does nothing for you. You lose your protection when things get ugly," he says.

Buying long-term puts is similarly unattractive – especially given high levels of implied volatility and skew. Aside from being expensive at current market levels, he believes this strategy is too dependent on mark-to-market pricing. "You're relying very much on mark-to-market and where implied volatility is going to be. I prefer to rely less on mark-to-market," he says.

This is not so surprising after the recent crisis, in which whirling valuations for a range of assets created huge problems for risk managers. Another outcome from the crisis is a heightened awareness of counterparty risk, which Universa tackles by shunning over-the-counter derivatives. "We have no interest in buying Titanic insurance from those aboard the Titanic," says Spitznagel.

At an operational level, Universa attempts to ensure its assets are properly segregated so the company can withstand a period of acute market pain. “I don’t want anybody to have any misery, but it would be good for our funds, so we go through extraordinary efforts to understand how robust our capital is in those scenarios,” he explains.

The stakes are high. If the firm survives this kind of market rout, it is likely to become one of the few players willing to trade – a position that benefited the company in 2008. “In a liquidity crisis, we don’t need liquidity. We are out there selling liquidity. That’s a good position to be in,” he says.

Although Taleb doesn’t get involved with the day-to-day running of the fund, Spitznagel says the two often speak to each other about trading positions and order flow. The core of their relationship is about research, he says. “I would argue the two of us together have thought about tails, their pricing, their occurrence and their empirical properties as much or more than anybody who’s actively trading. He represents much of our intellectual edge,” he explains.

As well as trading, Spitznagel is also heavily involved in research at Universa. Although it is empirical in nature, he insists it does not amount to the kind of naive empiricism portrayed in The Black Swan. The book describes the experience of European settlers in Australia, who discovered the existence of black swans, having previously believed all swans were white. Rather than rigidly sticking to historical experience, Spitznagel says the firm takes a more flexible approach. “We don’t want to be empiricists in the way empiricists might say all swans are white. That’s the problem of induction. The market is replete with this kind of thinking and this kind of pricing,” he says.

While he’s reluctant to talk about the firm’s research efforts, current areas of interest include the purchasing power of the dollar and tail risk in commodities. “There’s this reliance on the Fed that I think is just not consistent with history. We know people are happy that rates are zero, but we also know that when rates are very low, the value of money goes way down. That’s an empirical fact,” he says.

Sources say the company is ramping up a BSPP strategy focused on inflation with close to $1 billion of assets. Similar to the firm’s efforts in equities, the strategy will try to profit from runaway inflation by using options in fixed income and a wide range of commodities, sources believe.

The success of Taleb and The Black Swan has helped make tail risk a popular theme with investors, yet Spitznagel is not concerned about rival tail risk funds that have emerged. “Our competitors are very late to the game. I don’t know how many of these guys have actually hedged someone through a market crash. I view them as opportunists in what is a good environment for marketing,” he says.

Some equity derivatives dealers speculate the proliferation of tail risk funds could be one reason for elevated levels of long-term skew, but Spitznagel disagrees. “I doubt it, because I don’t think anyone’s really big enough across the board.” Instead, he points to dealers, which have become more wary of taking the other side of trades with clients searching for downside protection.

Despite recent chatter about the merits of tail risk funds, not everyone sees the benefit. Some market participants slyly observe that putting on tail risk protection after the recent financial collapse seems like closing the stable door after the horse has bolted. But Spitznagel argues tail risk hedging is not an issue of market timing. “The idea people are getting in now because they know a crash is coming is absurd. But to say that one shouldn’t be hedging this at any time because we just saw the crash is equally absurd. My argument is that hedges that make sense because of their risk and reward should always be on,” he says