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Outliers, Black Swans, and Other Impossible Things That Happen Again and Again

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Three hundred fifty years ago everyone knew that swans came in only one color, white. In 1697, however, a Dutch explorer in Australia discovered a black swan. Hence we get the name Black Swan for rare, unexpected events within a population group. Strange though isn't it, some 60 years before that discovery, the Dutch also gave us the first recorded speculative bubble and burst with their tulip mania.

Things outside the norm like winning the lottery is a black swan. Stock market crashes are black swans. The recent housing implosion was a black swan. There are numerous examples and you would think that we might get used to the impossible happening over and over. What normally happens, however, as time goes by, as the black-swan effected generation passes, it then becomes easy for us to take the steps from atypical to rare to impossible. In turn we then act according to that zero chance, instead of retaining a, shall we say, a certain humbleness about our odds. I mean, hey, if it hasn't happened to me yet, why certainly it is impossible. So we think and act.

How do we speak of winning the zillion dollar lottery or the 100-year flood or lightening striking twice in the same spot or another 9/11 (let alone the first one) or a stock market crash? Is it impossible and will never happen and outside the realm of possibility? But, that war to end all wars was replaced by the mother of all wars. The Exxon Valdez oil spill was far surpassed by the disaster in the Gulf. Folks do win the lottery and from recent news stories, even win the impossible three or four times. And lightening can strike twice in the same spot we know.

An Outlier

So, what exactly are these seemingly random, outside the norm events called outliers and black swans? Statistically speaking, it typically refers to the events at the far tail ends of the well-known bell curve. Rolling craps and the odds are based on a bell curve and we name the two least likely events snake eyes and box cars. Technically, these are not outliers because they are expected to happen; the odds are factored in, but the point is they are less likely to occur. Outliers are of the same population group, but by definition they happen very infrequently and randomly. They are unpredictable. They are really far off the hump of the bell-curve. They are practically invisible, yet they are there; they do happen. The reality is, unlike the outliers in craps that are known and expected, most black swans are not known until after they happen and are basically impossible to predict.

Problems

Aside from being infrequent, the main characteristic of outliers is that when they do occur, they are typically devastating, like 9/11, a nuclear plant meltdown, or a market crash. In addition, to their direct impact, the ramifications spread, like concentric rings on a still pond caused by a well-placed centered rock.

The next problem that arises with outliers is the difficulty in predefining the event in order to make sure the outlier you are worried about is actually the one you have tried to hedge against. There are two historic examples here that might help.

One example, some people buy gold to hedge against a market crash or economic calamity. The problem is that unless it is physical bullion that gold stock will go down also in liquidation panic. You have to own the coins. And then some folks put the bullion in their bank's safe deposit box, but then the government, like in the Thirties, seals the box. You do not have access to it. And then some folks instead have their bullion in their house safe, but then the government, like in the Thirties, makes owning gold illegal. Your hedge against a societal breakdown became useless and costly.

That whole scenario is one giant black swan taking off in your face before you can even grab a feather. None of the legal changes could have been anticipated and even if they had been expected, the hedge itself became illegal.

The second example comes from the Crash of 1987. What is the true correlation between what is hedged and what one thinks is hedged? Back in the Crash of 1987, the operative phrase was "portfolio insurance". It ended up that it did not work; in fact, as they increased their insurance exposure per their models, it kept making the decline worse. It was like dying to trigger your life insurance payoff; good luck with spending that. Their model did not work in real time either.

These were very smart people who made the mental leap across the chasm from very rare to impossible in my lifetime on my watch and in any event I am hedged. But that psyche probably helped create the very problem in the first place.

The story is told of the priest, the hippie, and world's smartest man on an airplane. The captain calls out and says the plane is going down, everyone grab a parachute, and jump. The last three remain and find only two more parachutes. The priest tells the hippie, go ahead my son; I'm old, I've lived my life, but you're young. The hippie replies, don't worry padre, he just jumped out with my backpack.

More Information

Here are a few links with more information about outliers.

http://en.wikipedia.org/wiki/Black_swan_theory

http://en.wikipedia.org/wiki/Outlier

Practical Application

When one side of the trade gets crowded, you can be sure that the easy money has already been made. The trade may continue generally in your direction for some period of time, but the fast-approaching end should seriously be considered. So, when we hear water-cooler conversation and articles in major mass magazines about black swans and outliers, we should hear with the same ears that heard of the death-of-equities or no-income housing loans. We should know that the days of known outliers may be numbered, at least for awhile, until most of this generation passes.

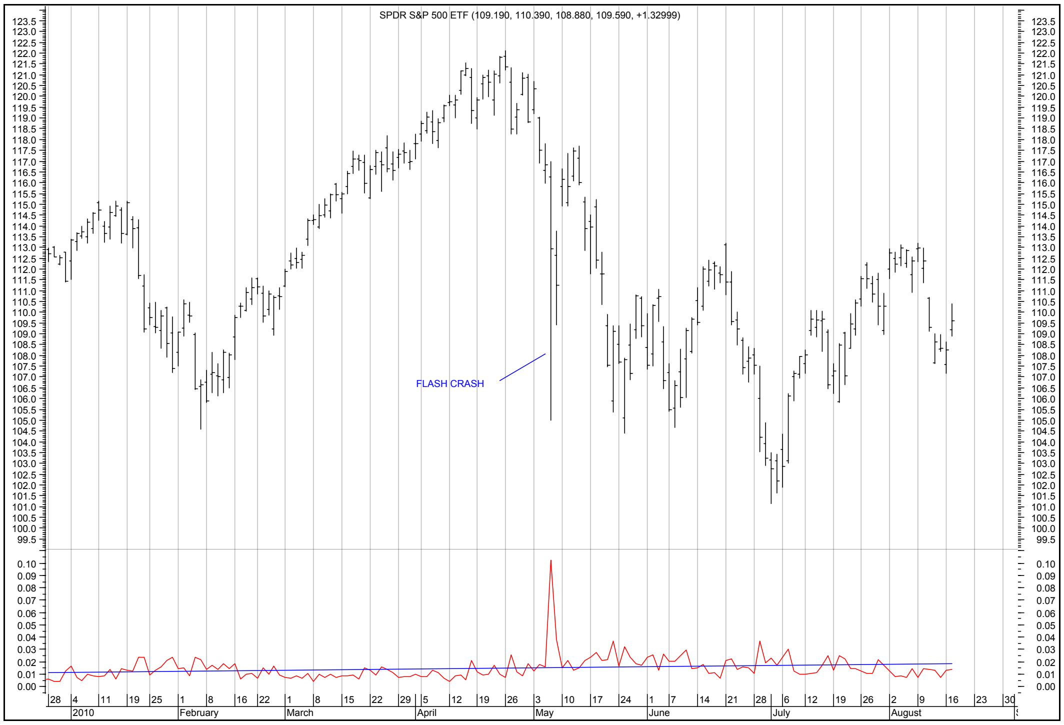
For the stock market today, this is not to say that there will not be any black swans in our future, but that stock market volatility in general may become somewhat muted going forward. Some call it the new normal or subdued returns. As a symptom of this, we see an increasing number of various hedge funds being offered that are dedicated solely to profiting from outliers. Bar the door after the cows have left comes to mind. It is quite astonishing that investors would even buy these things. Outliers, by definition, are unknowable, untimely, and unpredictable events. But hey, pay me to predict something that is unpredictable. My address is at the top.

Likewise to the reverse of that trend, some very smart people are shutting their hedge funds. Perhaps they have accumulated enough wealth or perhaps they expect further outsized returns to be rare. Why wreck a respectful record? Traders love volatility, they love risk regardless of direction up or down, but when it is hedged away, talked about, and priced into the market as a possibility, then again, we have to expect some sort of muted returns going forward. The known black swans have been identified, so they are not the problem.

This latter point has been born out with the Japanese experience. After their real estate and stock market bubbles burst in the Eighties, their stock market has gone sideways to down over the last thirty years. There have been rallies and sell offs, but consistent buy and hold and forget has not worked. Even our market is sideways to down over the last 10 years.

Charts

This chart shows the S&P 500 for 2010 through 8/17/10. It shows the "flash crash" of 5/6/10. The red line in the bottom part shows the rate-of-change range over the same time period. The spike is the outlier marking the flash crash.



Right Below The Nose

Imagine buying up the inventory of white swan feathers only to find out that a black swan was discovered and now the rage is to don a chicken feather hat to show off that one single black swan feather. But, you survived that fiasco and so you have now hedged your inventory for that black swan, but now it is illegal to own any swans in any color.

Imagine that you survived that completely unanticipated event and now have hedged against it too somehow, but so have all your competitors; and not just with swan feathers, but with all sorts of feathers and boas. The younger generation slowly takes over and eventually asks, why are we wasting our money on these hedges? Nothing like this has happened for years and years and won't ever happen. We have more education. We are smarter. Humans have learned a thing or two since that era. We don't repeat our mistakes. I will know when to get out. I have my well-paid, top-notch, super-smart advisors. I will see it coming. It is different this time.

Here is the lesson I draw from all of this. From the first recorded, backwardly named black swan event in the early 1600s to today, outliers exist basically as impossibilities that do end up happening. Yet after all this, here we are writing and reading. So, we will not panic. It will pass. There is a ground and there is a sky; things don't fall to zero, nor go to the moon (rocket ships notwithstanding). We live between the two extremes.