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LITERATURE

Black Swan Events – What are they and how to manage them.?

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What Is a Black Swan Event.?

A black swan is an unpredictable event that is beyond what is normally expected from a situation and that has potentially severe consequences. Black swan events are characterized by their extreme rarity, severe impact, and the widespread insistence they were obvious in hindsight.

Black Swans, Markets, and Human Behaviour

The concept of black swan events was popularized by the writer Nassim Nicholas Taleb in his book, The Black Swan: The Impact Of The Highly Improbable (Random House Publishing Group, 2010). The essence of his work is the world is severely affected by rare and difficult to predict events. The implications for markets and investments are compelling and need to be taken seriously.

Taleb describes a black swan as an event that:

- is so rare that even the possibility that it might occur is unknown
- has a catastrophic impact when it does occur, and
- is explained in hindsight as if it were actually predictable.

For extremely rare events, Taleb argues that the standard tools of probability and prediction, such as the normal distribution, do not apply since they depend on a large population and past sample sizes that are never available for rare events by definition. Extrapolating, using statistics based on observations of past events does not help predict black swans and might even make us more vulnerable to them.

Classic black swan events include the rise of the internet and personal computers, the September 11 attacks, and World War I. However, many other events, such as floods, droughts, epidemics, and so on, are either improbable, unpredictable, or both. Taleb says that people develop a psychological bias and "collective blindness" to them. The very fact that such rare but major events are, by definition, outliers makes them dangerous.

Implications for Markets and Investing

Stock and other investment markets are affected by all types of events. Downturns or crashes such as Black Monday, the stock market crash of 1987, or the dotcom bubble of 2000 were relatively "model-able," but the Sept. 11 attacks and the COVID-19 pandemic were far less so.
Further, who really expected Enron to implode at the time.? As for the Bernie Madoff Ponzi scheme, one could argue there were red flags.

The point is we all want to know the future, but we can't. We can model and predict some things to an extent, but not the black swan events, which creates psychological and practical problems.

For example, even if we correctly predict some things that impact the stock and other financial markets, such as election results and the price of oil, other events like a natural disaster or war can override the predictable factors and throw our plans totally out of kilter. Furthermore, events of this kind can happen at any time and last for any length of time.

Consider a couple of past wars as examples. There was the incredibly short Six Day War in 1967. On the opposite end of the spectrum, people thought "the boys will be home by Christmas" when World War I started in 1914, but those who survived didn't return home for four years. And Vietnam did not exactly turn out as planned either.

Complex Models May Be Pointless

Gerd Gigerenzer also provides some useful input. In his book, Gut Feelings: The Intelligence Of The Unconscious (Penguin 2008), he argues that 50% or more of decisions are intuitive, but people often shy away from using them because they are hard to justify. Instead, people make "safer," more conservative decisions. Thus, fund managers may not suggest or make riskier investments simply because it is easier to go with the flow.

This happens in medicine, too. Doctors stick to familiar treatments, even when a bit of lateral thinking, imagination, and prudent risk-taking might be appropriate in a particular case.

Complex models, such as Pareto efficiency, are often no better than intuition. Such models only work in certain conditions, so the human brain is often more effective. Having more information does not always help, and getting it can be expensive and slow. A laboratory situation is very different, but in investing, complexity can be handled and controlled.

Conversely, it is highly unsatisfactory and very risky to simply ignore the potential for black swan events to occur. To take the view that we cannot predict them so we will plan and model for our financial future without them is looking for trouble. And yet, this is often precisely what is done by firms, individuals, and even governments.

Diversification and Harry Markowitz

Gigerenzer considers the Nobel Prize-winning work of Harry Markowitz on diversification and in particular, Markowitz's development of modern portfolio theory (MPT). Gigerenzer argues one would need data extending over 500 years to work. He comments wryly that one bank, which promoted its strategies based on Markowitz-style diversification, sent out its letters 500 years too early.

After getting the Nobel Prize, Markowitz himself actually relied on intuition.
In the 2008 and 2009 crises, the standard asset allocation models did not work well. One still needs to diversify, but intuitive approaches are arguably just as good as complicated models, which simply cannot integrate black swan events meaningfully.

Other Implications

Taleb warns against letting someone with an incentive bonus manage a nuclear power station or your money.
Ensure that financial complexity is balanced with simplicity. A mixed fund is one way of doing this. Certainly, these vary substantially in quality, but if you find a good one, you can really leave the diversification to one supplier.

Avoid hindsight bias. Be realistic about what you really knew back then, and don't bank on it happening again, certainly not exactly the same way—known as a normalcy bias. Take uncertainty seriously—it is the way of the world. No computer program can forecast it away. Don't place too much faith in predictions. Markets can be clearly too high or too low, but reliable, accurate forecasts you can bank on are just a fantasy.

The Bottom Line

Predicting financial markets can be done, but their accuracy is as much a matter of luck and intuition as of skill and sophisticated modelling. Too many black swan events can happen, nullifying even the most complex modelling. This does not mean modelling and prognoses cannot or should not be done. But we must also rely on intuition, common sense, and simplicity.

Furthermore, investment portfolios must be made as crisis-proof and black-swan-proof as possible. Our old friends—diversification, ongoing monitoring, rebalancing, and so on—are less likely to let us down than models that are incapable of considering everything. In fact, the most reliable prediction is probably that the future will continue to remain a mystery, at least in part.

Key Takeaways

Black swans are extremely rare events, often with large negative consequences. A black swan event cannot be predicted beforehand but may seem obvious in hindsight.
Reliance on standard forecasting tools and investment models can both fail to predict and potentially increase vulnerability to black swans by propagating risk and offering false security.