The Yellowstone Factor

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Yellowstone National Park is volcanic in nature, yet not one cone or caldera is visible. In the 1960s, this mystery was finally solved: The entire park -- 2.2 million acres -- is the caldera. It is the largest active supervolcano on Earth. Yellowstone started erupting about 17 million years ago, and it has a cycle of erupting roughly every 600,000 years. The last eruption was 630,000 years ago, so it's about 30,000 years past due on the next big one.

By 1984, Yellowstone's restless magma chamber caused the entire central region of the park -- several dozen square miles -- to be lifted three feet higher than it was in 1924. Then, in 1985, the area subsided by eight inches, but it appears to be rising again. Although volcanic eruptions are very hard to predict, telltale signs of a forthcoming eruption are already there. Earthquakes are a precursor to volcanic activity, and there were 1,260 of them in the park in 2002 alone.

When Yellowstone awakens from its slumber, it's unlikely any humans within 700 miles of the park would survive. An area the size of New York State would have ash 67 feet deep. The aftermath would likely be worse -- with no sunlight for years throughout the planet and much farmland rendered useless with mountains of ash. Humans have no memory of ever having lived through such devastation. (Thanks to Bill Bryson's <I>A Short History of Nearly Everything</I> for the data.)

Outliers

Yellowstone represents just one of the many ugly outlying events that have an extremely low probability of occurring, but that does not mean that the odds are zero or that they can be ignored. Even the most seemingly resilient businesses, by their very nature, are very fragile temporary creations -- and it would take a lot less than Yellowstone's eruption to wipe them out. The Yellowstone Factor alone implies that there isn't a single business on the planet whose future is assured.

Minimizing downside risk is the first step toward being a successful investor. As Warren Buffett succinctly puts it:

"Rule No. 1: Never Lose Money.

Rule No. 2: Never forget Rule No. 1"

You always need to be cognizant of six sigma events that can have ugly impacts on your portfolio and account for the approximate probabilities. Whenever I look at any investment opportunity, I first fixate on what factors can cause the investment to result in a significant permanent loss of capital. Besides Yellowstone, there are the usual suspects: wars, terrorism, fraudulent financial statements, dishonest management, disruptive innovation, etc. But how can you figure out the probabilities for each one?

Mota Hisaab i.e. Fat Accounting

As a child, I remember my mom periodically working out our monthly household budget, which usually took her no more than five minutes. As I entered my teen years, I took a closer look at her process and complained that she'd lumped things into just a few broad categories -- with a healthy dose of rounding up of each line item. I told her that the correct way to do it would be to expand the individual line items and put down more precise numbers. Needless to say, my mother has never changed her ways. All she'd do was smile and say in Hindi, *"Yeh mota hisaab hai"* -- translated as "This is quick-and-dirty, back-of-the-envelope accounting."

Investing is not a discipline based on absolutes or precise mathematics. There simply aren't enough data points available to work out the exact odds. It is an exercise in working out the "mota hisaab" probabilities.

It has been years since I've used a spreadsheet to assist in an investment decision. If I find myself yearning to run some calculations in Excel, it serves as a mental red flag to drop the investment from consideration. Excel is not helpful in figuring out the exact odds of Yellowstone happening in the next five years. However, if I ascribed odds of less than 1% to Yellowstone blowing in the next 10 years, I'm covered.

What about the odds of fraud or dishonest management? Even with all the headlines about **Enron** and **WorldCom**, I fully agree with Buffett, who said, "You'd be happy to have your daughter marry the CEO of the average public company." The typical U.S. public company's CEO is an individual of high integrity and competence. Their most common sin is usually excess compensation -- but one can easily discount for that.
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There are more than 28,000 publicly held companies in the U.S. Filtering for that list for ones that are squarely within one's circle of competence would trim the list down to fewer than 1,000 companies for most of us. The odds of "being taken," after thoroughly studying the financials and the nature of management

of one of these 1,000 businesses, I'd ascribe as being well below 1%.

Buying fractions of a well-run, well-understood good business starts to put the odds in your favor. And investing in such a business at less that half of its intrinsic value means that the odds of any meaningful capital loss can be whittled down to below 5% -- even with all the ugly outlying events factored in.

Imagine a casino that offered the following odds:

Odds of a 50-100% loss:	3%
Odds of a 1-49% loss:	2%
Odds of a 2x or higher return in 2-4 years:	75%
Odds of a break-even – 2x return in 2-4 years:	20%

The entire Vegas strip would be bankrupted quickly offering these odds. Yet, these are offered to focused value investors in the U.S. equity markets. With such odds, you'd handily beat the market -- generating a 15+% return over the long run -- even if you factor in Yellowstone.

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