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Fat Tails, Expectations, and Fragility

Fat tails are rare extreme events (tails) that have a disproportionate impact on results. Renown statistician, scholar, and thinker Nassim Taleb presents the following wealth distribution example when explaining fat tails, "If you sample wealth from the population of the planet, you get four billion people who have very little money. When you add a Warren Buffett or Jeff Bezos randomly, either one of them represents the entire wealth sample plus noise." Wealth distribution is fat tailed because a few uber rich skew the average wealth significantly higher than what most people have.

The S&P 500 performance in 2024 could be considered another fat tail example or a thick tail at the very least. The S&P 500 index returned 25% last year, yet half of the stocks in the index were down. The top 7 companies accounted for 55% of the index total return and represented over 30% of the total index market capitalization. Envision a dog, with the tail representing the top 7 companies and the body as the remaining 493. Last year's S&P 500 return could be described as the tail wagging the dog.

Today's world appears to be driven by extreme tail events more than ever. The interconnected nature of society and information amplifies outcomes and volatility. Today we are bombarded with examples of tail events both positive and negative. People are exposed to less frequent events more frequently due to connectivity and the spread of social media. Individuals can mistake increased visibility for a rise in probability. This skewed interpretation has a dramatic negative impact in two ways. First, there is a gradual shift in perception, followed by an increase in expectation. If Bob perceives a positive tail event as more common, his expectation of a positive tail result rises. To achieve his new inflated expectation, Bob succumbs to a second negative effect by adding excessive risk.

Modern society's information is narrowly funneled through a handful of data sources. 300 million people in the U.S. use social media and average around 2.5 hours of social media screen time per day. That's roughly ¾ of the total U.S. population spending $1/8^{th}$ of their waking hours on these platforms. The global numbers are similar with over 5 billion worldwide users, up from 2 billion 10 years ago. Information these platforms provide is promoted by algorithms on the basis of engagement, not value. A person is more likely to engage if the content provided lies at an extreme (tail) end of the distribution. It's a reason why the loudest voice often represents a tiny sample size of the whole on these platforms. This results in society receiving more frequent exposure to less common events and outcomes.

Daily exposure to rare results (true or fabricated) can distort expectations to irrational levels. In my last letter I highlighted the importance of calibrating expectations to make better decisions (or less lousy decisions). Every individual has different expectations based on their own desires, fears, and experiences. In today's connected society we must shield our expectations from influence more attentively than in the past. A broad applicable tactic used by successful people is to aim low when calibrating expectations.

Over the course of his 99-year life Charlie Munger always gave the following answer when asked about the key to a happy life, "lower expectations." In an interview last year, the founder and CEO of Nvidia, Jensen Huang said, "people with very high expectations have very low resilience – and unfortunately, resilience matters in success. One of my great advantages is that I have very low expectations."

Expectations are essentially projections about future events or behaviors. Projections are regularly wrong and largely influenced by outcomes outside our control. The writings of Stoic philosophers like Epictetus and Marcus Aurelius emphasize we focus on that which is within our control. Focusing on the quality of one's actions rather than an expected outcome is a shared value of successful people throughout history. Roman legions held high a battle standard when they marched to war, not a battle expectation. Standards can be thought of as principles, guidelines or a framework one sets for themselves. They represent an internal benchmark for which the quality of one's actions are evaluated. Demanding high standards from our actions builds strength and resilience. By contrast, inflated expectations introduce fragility. Psychological fragility emerges when an individual fails to meet the high expectations they place upon themselves. Unmet expectations often lead to frustration, anger, envy, and other emotions that poison clear thought. This compounds in a negative direction as poor thought breeds inferior decisions that produce bad outcomes. Lowering expectations transforms a vulnerability into a strength, thereby reducing fragility.

Fragility is more elusive, spreads faster, and can cause more damage today than in the past due to the viral and connected nature of systems and information. Reducing fragility as it arises (or better yet before it appears) may yield more long-term benefit than simply fixating on return. The S&P 500 index composition mentioned earlier provides an interesting example to think about. Purchasing an S&P 500 index fund would historically appear to reduce fragility due to diversification. The rationale was purchasing an index fund spreads your "eggs" across many "baskets" to reduce the impact of any single company's failure on your overall portfolio. Today, one could argue that purchasing the same index fund may achieve the inverse (increase fragility) - as the top 1% of the total companies account for 55% of the total return.

How does navigating the environment today differ from 25, 50, or 100 years ago? Today's interconnected society demands stronger individual defense systems. Modern risks are psychological and less physical in nature. There is a reduced risk of neighbors invading and physically taking your land. Today we face a growing volume of subtle influence vectors constantly probing for weakness while adapting and improving. As Darwin theorized 150 years ago, we too must adapt as our environment evolves or risk extinction. The fundamental threat highlighted in this letter is a gradual drift in expectations from increased exposure to rare occurrences. This can lead to harmful second and third-order effects by tainting our decision process and increasing fragility. A framework built around low expectations, but high standards provides a strong bastion from which to defend assaults on clear thought. Keeping expectations low but standards high is timeless advice to reduce fragility and improve decisions.

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