INVESTMENT PERSPECTIVE 3Q 2019

THE MISBEHAVIOR OF THE MACHINE

One of my favorite non-fiction books is *Normal Accidents* by Charles Perrow. Perrow studied high profile catastrophes such as the *Challenger* and Three Mile Island. He observed that systems that were highly complex and tightly coupled were prone to catastrophe. Aviation, rocket launches, petrochemical refineries and nuclear plants are the classic examples. Traditional engineering safeguards such as fail-safes and redundancies only made the systems more complex and therefore vulnerable. As a sociologist, he asserted that the catastrophic errors were not primarily technical in nature but rather woven into the fabric of organizations. Ever since, accident investigations began to concentrate on the role of human management systems. For example, the Deepwater Horizon investigation focused not on the malfunctioning blowout preventer but more on the management imperatives at BP as key contributors to the accident.

The book led me to an abiding fascination with accidents. Given the century-old obsession with disasters like the *Titanic* and the *Hindenburg*, it is safe to say that I am not alone in that pursuit. It is probably a human survival instinct to fixate on mistakes. Like Greek tragedies, they remind us of the faults in ourselves and warn us of the abundance of risks around us. At least my preoccupation is not the morbid kind that stalls highway

The Misbehavior of the Machine

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traffic in the lane opposite the site of a crash. I just really want to understand what went wrong. The reason is that a lot of thought and planning went into avoiding exactly what happened. Whatever happened must have fallen outside the imagination of highly specialized engineers.

The other complex, tightly coupled system is financial assets. Like the real-world cases that Perrow studied, they are prone to infrequent cataclysms. The difference is there is no observable mechanism that we can use to trace the failure. The failure manifests in how resilient the asset is to unexpected new information. In the 2008 mortgage crisis, the failure was not the rise in delinquencies. It was that the market had not adequately discounted that scenario. The characteristic engineering process of asset management is the linear regression. As a result, we are captive to the particular patterns that exist in the historical data set. If there is no nationwide house price decline in the data, then your risk model cannot envision the default levels that actually occurred. And this is not to blame the algorithm. As Perrow observed in his study of disasters, it is essential that the people and organizations who manage the machine be the first line of defense against the misbehavior of the machine. And each disaster, properly dissected, should teach us lessons about how we can avoid that particular pitfall in the future.

This quarter it was hard to avert the eyes from the train wreck at WeWork. The company that set out to 'elevate the world's consciousness' went from an almost $47 billion initial public offering to a rescue recapitalization at an $8 billion valuation in the space of a few weeks. More than an isolated corporate debacle, I believe that WeWork will be a crucible for a particular business model that will impact hundreds of billions of dollars of market value.

In the past several years, we have discussed our increasing focus on skill-based managers and strategies. Our objective is to find uncorrelated sources of return so that portfolios have a higher return potential and a lower chance that any single risk is cataclysmic. Knowing how difficult it is in advance to foresee all possible risks, especially in the complex financial market ecosystem, we want to create portfolios that are more robust to the systemic accidents that periodically upend markets. In addition to focusing on exceptional investment skill, our investment process gives equal attention to partnering with honest, trustworthy and transparent individuals who put investors' interests first. As crises and accidents have demonstrated, human management matters.

—*T. Brad Conger, CFA*
Deputy Chief Investment Officer