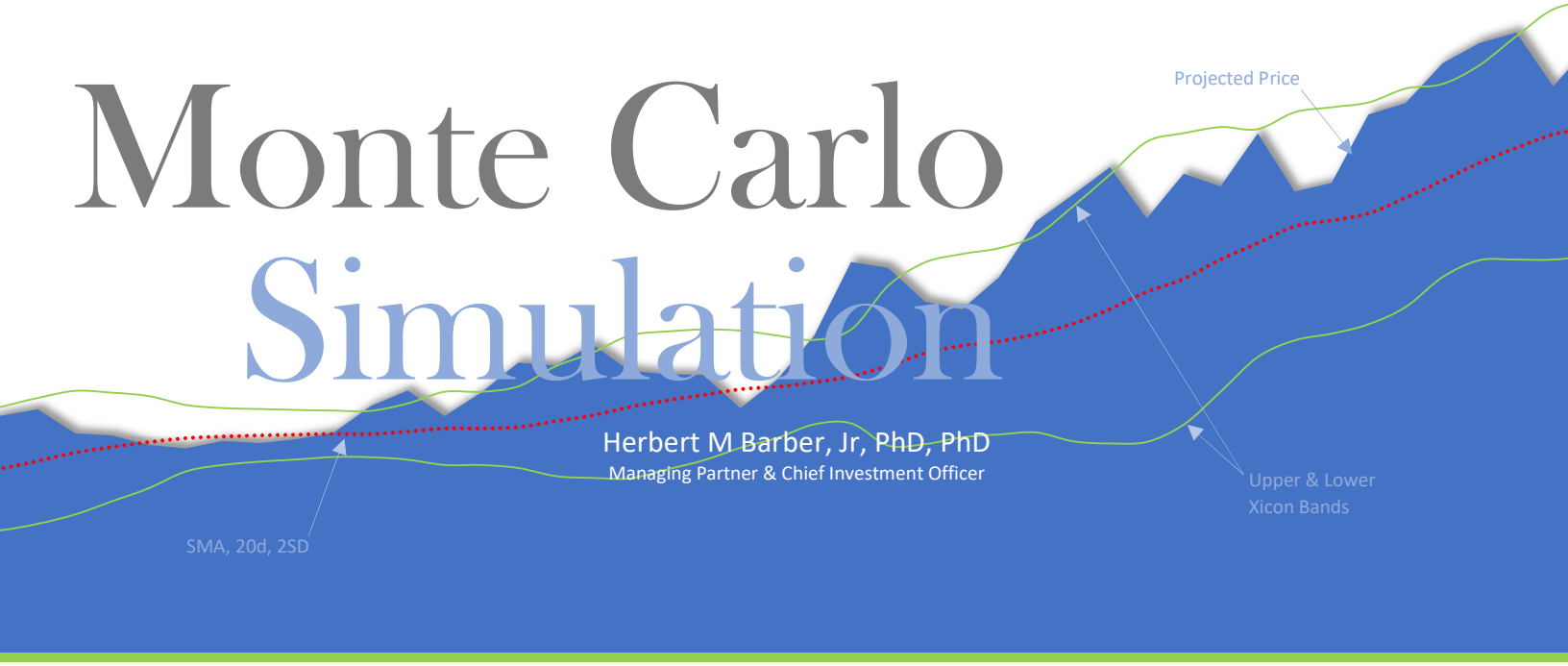
Monte Carlo Simulation



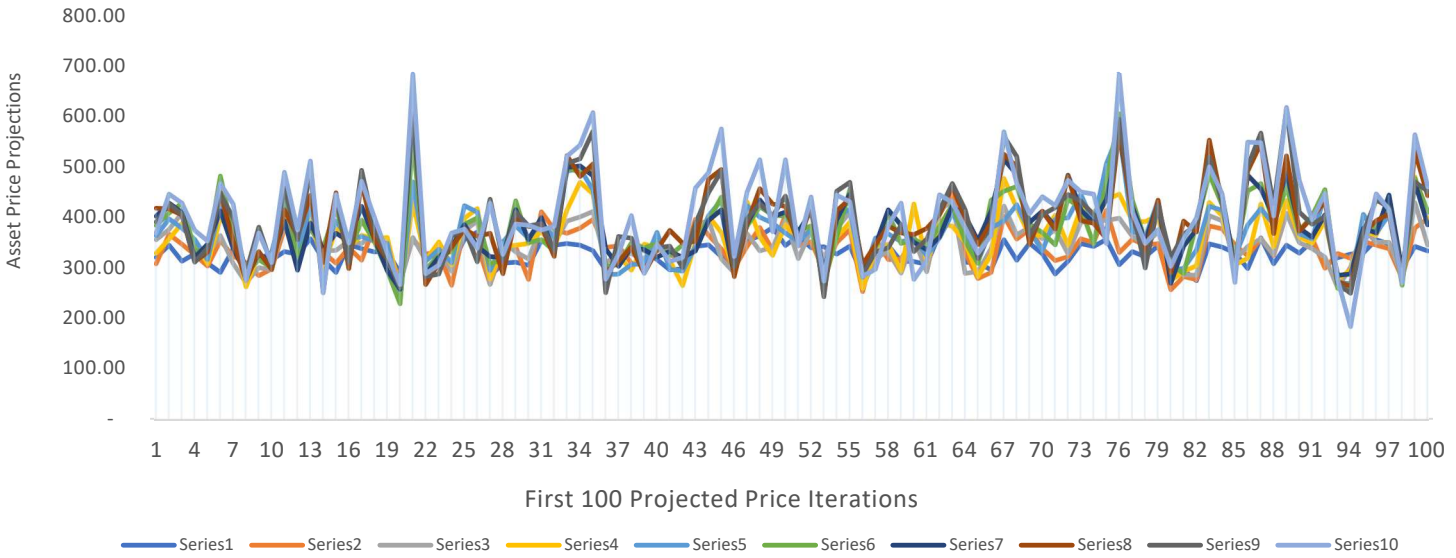
Herbert M Barber, Jr, PhD, PhD
Managing Partner & Chief Investment Officer

In financial economics, we face uncertainty every day, but rather than being fearful of risk, we leverage risk to our advantage to increase financial output. We do so through a host of methods and techniques in various analytical mixes as we solve complex problems, such as knowing exactly which assets have the highest probabilities of returning strong profits or knowing when to trade. In fact, essentially using no more than pricing data, drift, and volatility, coupled with a little randomness, we make our hedge funds shine…. well, along with a little more work.

One of the most effective methods we use for forecasting these investment data is referred to as *Monte Carlo Simulation* (MCS). Though the method was developed by mathematician Dr. Stanislaw Ulam while working on the development of thermonuclear weapons for the Manhattan Project, the method is used today across a host of disciplines, including physics, engineering, business, economics, and finance. We use Monte Carlo Simulation in financial economics to model asset data, e.g. stock pricing, risk, ROI, and other variables, as the method works well when modeling data under extreme uncertainty. In so doing, we simply incorporate statistical randomness to solve potentially deterministic problems, meaning problems that may in fact have no randomness. While many methods would incorporate a single variable into an analytical mix to account for extreme uncertainty, through MCS we incorporate thousands and millions of random variables into the mix, then run simple statistical analysis on outcomes to project findings. Depending on the robustness of the data, overall error rates for our projections range from 1 percent to 7 percent.

Refer to price projections for a stock below; and be aware that we normally run thousands or millions of iterations simultaneously, far more than those shown below.

Herbert M Barber, Jr, PhD, PhD serves as the Managing Partner and Chief Investment Officer of Xicon Economics. For over 30 years, he has provided advisory, consulting, and management of large capital investments in the private and public sectors, totaling over $100 billion. Dr. Barber holds 5 academic degrees, including two research doctorates.



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