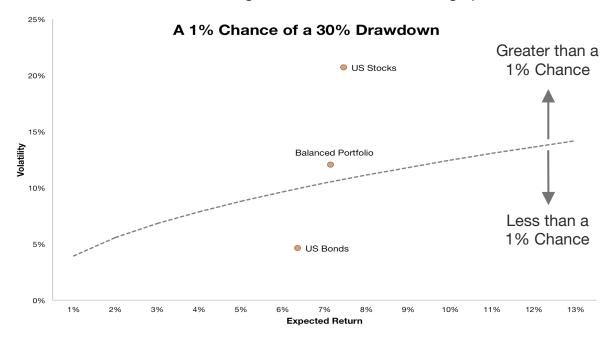


Education: Drawdowns

Drawdowns Aren't Prevented in Static Portfolios

Investors measure risk not as volatility, but loss of portfolio value. The appropriate question is "does this strategy protect capital?"

Capital protection should be estimated using "Drawdown:" Peak-to-trough portfolio loss



^{*}For a continuous geometric Brownian motion with drift μ and volatility σ , define $\Gamma = 2\mu/\sigma^2$. The probability of a drawdown greater than D can be approximated as $p = [1 / (1 - D)]^{-\Gamma}$. †Sharpe ratio assumes a risk-free rate of 0%

^{**} Metrics for U.S. Bonds, 60|40 Balanced Portfolio, & US Stocks were derived from VBMFX, VBINX, and VTSMX respectively





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