Abstract:

For risky investments, like private equity or hedge funds, default risk plays a prominent role. However, the accordant literature on portfolio optimization mostly disregards default risk and accordingly skewed return distributions. This paper presents a realistic and tractable framework for a portfolio optimization including default risk. Default is modeled by means of a Merton- or Black-Cox-type structural model. On a portfolio level, the mean and covariance of the resulting return distribution can be derived analytically, allowing a classical mean-variance optimization. Since this optimization ignores tail risk, we additionally present a Monte-Carlo simulation for a mean-CVaR optimization. The paper concludes with an application to unlisted private equity and compares its results to a model proposed by Hamada (1972) that does not explicitly consider default risk.