



Determination and Estimation of Risk Aversion Coefficients

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Abstract

In the paper we consider two types of utility functions often used in portfolio allocation problems, i.e. the exponential and quadratic utilities. We link the resulting optimal portfolios obtained by maximizing these utility functions to the corresponding optimal portfolios based on the minimum Value-at-Risk (VaR) approach. This allows us to provide analytic expressions for the risk aversion coefficients as functions of the VaR level. The results are initially derived under the assumption that the vector of asset returns is multivariate normally distributed and they are generalized to the class of elliptically contoured distributions thereafter. We find that the choice of the coefficients of risk aversion depends on the stochastic model used for the data generating process. Finally, we take the parameter uncertainty into account and present confidence intervals for the risk aversion coefficients of the considered utility functions. The theoretical results are validated in an empirical study. We conclude that investors fix their risk attitude in a two-step procedure: first, they choose an appropriate light- or heavy-tailed distribution for the asset returns; second, to hedge the remaining risk they choose higher or lower risk aversions respectively.

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