

Omega Portfolio Construction with Johnson Distributions

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Abstract

The Omega performance measure is equipped with the original family of Johnson distributions. Explicit representations for Omega or Sharpe with all four Johnson cumulated densities were derived to construct portfolios with respect to 4 mutually independent moments. Additionally, decompositions of higher portfolio moments were derived to include expected higher moments on an individual fund or strategy level. Hedge fund index back-testing has shown that Johnson-Omega gives significantly higher returns without sacrificing capital protection needs. Omega with Johnson distributions solves the weaknesses from Sharpe and achieves a more predictable and stable performance by exploiting the persistence of potentially significant higher moments up to fourth order.

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