RiskPortfolios: Computation of Risk–Based Portfolios in R

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Summary

RiskPortfolios is an R package (R Core Team, 2016) for constructing risk–based portfolios dedicated to portfolio managers and quantitative analysts. It provides a set of functionalities to build mean–variance, minimum variance, inverse–volatility weighted (Leote De Carvalho et al., 2012), equal–risk–contribution (Maillard et al., 2010), maximum diversification (Choueifaty and Coignard, 2008), and risk–efficient (Amenc et al., 2011) portfolios. Optimization is achieved with the R packages quadprog (Weingessel, 2013) and nloptr (Ypma, 2014). Long–only or gross constraints can be added to the optimization. As risk–based portfolios are mainly based on covariances, the package also provides a large set of covariance matrix estimators. A simulation study relying on the package is described in Ardia et al. (2016). The latest version of the package is available at `https://github.com/ArdiaD/RiskPortfolios`.

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