



Journal Article

Enhanced Portfolio Optimization

March 2, 2020

We show how to identify the portfolios that cause problems in standard mean-variance optimization (MVO) and develop an enhanced portfolio optimization (EPO) method that addresses the problems. The EPO solution encompasses existing methods such as standard MVO, reverse-MVO, a Bayesian estimator, Black-Litterman, robust optimization, a form of generalized ridge regression used in machine learning, and random matrix theory. Nevertheless, the closed-form EPO is extremely simple. Applying EPO on several realistic datasets, we find significant gains relative to standard benchmarks. In equities, EPO significantly outperforms the market, the 1/N portfolio, and standard asset pricing factors. Similarly in global asset allocation, EPO delivers economically significant increases in the Sharpe ratio and statistically significant alpha to standard time series momentum strategies and other benchmarks.

The information contained herein is only as current as of the date indicated, and may be superseded by subsequent market events or for other reasons. Neither the author nor AQR undertakes to advise you of any changes in the views expressed herein.

This information is not intended to, and does not relate specifically to any investment strategy or product that AQR offers. It is being provided merely to provide a framework to assist in the implementation of an investor's own analysis and an investor's own view on the topic discussed herein.

Past performance is no guarantee of future results.

Certain publications may have been written prior to the author being an employee of AQR.

The views and opinions expressed herein are those of the author and do not necessarily reflect the views of AQR Capital Management, LLC, its affiliates or its employees.