"Portfolio optimization with transaction costs"

Abstract

We consider the portfolio optimization problem taking both risk and implementation considerations into account by maximizing the expected utility of portfolio returns after transaction costs. In contrast to extant approaches, we do not impose arbitrary turnover penalization functions for implementation purposes. We instead show that transaction costs naturally induce turnover regularization in different norms. For instance, under quadratic utility, proportional transaction costs imply turnover constraints in both $\ell 1$ and $\ell 2$ norms. In particular, the latter arises due to risk aversion.
We implement our portfolio optimization approach for both simulated and real data, with very promising results.

This paper is joint work with Duda Mendes and Gustavo Grivol.

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