Florian Peters, Amsterdam
Departmental Seminar 04.11.2024, Host: Christian Conrad

Optimal Peers

Abstract:

This paper provides a theoretical foundation for constructing optimal benchmarks via machine learning (ML). For a broad class of performance models, the optimal benchmark is given by an appropriately weighted portfolio of peers. I show that Ordinary Least Squares (OLS) provides the theoretically optimal portfolio weights in the population. In finite samples, machine learning methods, notably the lasso, can provide a robust, implementable solution. In an application to a large sample of U.S. public firms, ML-based benchmarks strongly outperform traditional industry benchmarks in out-of-sample explanatory power. This suggests that ML-based benchmarks can substantially improve outcomes in a wide range of applications, such as incentive contracts or relative performance evaluation.