"Information theoretic approach to high dimensional multiplicative models: Stochastic discount factor and treatment effect (with Chen Qiu)"

Taisuke Otsu

Abstract

This paper is concerned with estimation of functionals of a latent weight function that satisfies possibly high dimensional multiplicative moment conditions. Main examples are missing data problems, treatment effects, and functionals of the stochastic discount factor in asset pricing. We propose to estimate the latent weight function by an information theoretic approach combined with the ℓ_1-penalization technique to deal with high dimensional moment conditions under sparsity. We derive asymptotic properties of the proposed estimator and illustrate the proposed method by a theoretical example on treatment effect analysis and empirical example on the stochastic discount factor.
.