Portfolio Construction

Combining Empirical Likelihood and Generalized Method of Moments Estimators

September 1, 2011

This paper presents a new family of estimators for use in statistical estimation and econometrics. The new penalized method of moments (PMM) estimators merge the objective functions of generalized method of moments (GMM) and empirical likelihood (EL).

PMM estimators let the sample average moment vector deviate from zero, but the deviation is costly through a GMM-type quadratic penalty function. The weighting vector can deviate from n−1, but the deviation is costly through EL's Kullback–Leibler information criterion (KLIC) penalty function.

When the sample size is small and the number of moments is large, the new estimator performs well in Monte Carlo simulations.

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