Kernel Based Estimation of Spectral Risk Measures

Abstract

Spectral risk measures proposed by Acerbi (2002, 2004) belong to the family of coherent risk measures and hence inherit the properties of such measures. SRM is a weighted avarage of the quantiles of a loss distribution, the weights of which depend on the user's risk aversion. A natural estimator for the class of spectral risk measures (SRMs) has the form of L-statistics. In the literature, properties of the estimator of SRM are obtained using the empirical distribution function. We try to investigate the large sample properties of general L-statistics based on i.i.d cases and apply them to our kernel based estimator of SRM. We prove that the estimator is strongly consistent.