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Empirical Bayes Nonparametric Density Estimation of Crop Yield Densities: Rating of Crop Insurance

I examine a newly proposed density estimator in order to evaluate its usefulness for government crop insurance programs confronted by the problem of adverse selection. While the Federal Crop Insurance Corporation (FCIC) offers multiple insurance programs, what is needed is a more accurate method of estimating actuarially fair premium rates in order to eliminate adverse selection. The Empirical Bayes Nonparametric Kernel Density Estimator (EBNKDE) showed a substantial efficiency gain in estimating crop yield densities, as opposed to other estimators. The data of 97 Illinois counties’ corn yield from 1955 to 2010 was taken from the National Agricultural Statistics Service (NASS).