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论文

ASYMPTOTICS OF MEAN TRANSFORMATION ESTIMATORS WITH ERRORS IN VARIABLES MODEL

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摘要 This paper addresses estimation and its asymptotics of mean transformation $\theta=E[h(X)]$ of a random variable X based on n iid. observations from errors-in-variables model $ Y=X+~v $, where v is a measurement error with a known distribution and $h(\cdot)$ is a known smooth function. The asymptotics of deconvolution kernel estimator for ordinary smooth error distribution and expectation extrapolation estimator are given for normal error distribution respectively. Under some mild regularity conditions, the consistency and asymptotically normality are obtained for both type of estimators. Simulations show they have good performance.

关键词 Deconvolution kernel estimator,errors-in

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Abstract This paper addresses estimation and its asymptotics of mean transformation $\theta=E[h(X)]$ of a random variable X based on n iid. observations from errors-in-variables model $ Y=X+~v $, where v is a measurement error with a known distribution and $h(\cdot)$ is a known smooth function. The asymptotics of deconvolution kernel estimator for ordinary smooth error distribution and expectation extrapolation estimator are given for normal error distribution respectively. Under some mild regularity conditions, the consistency and asymptotically normality are obtained for both type of estimators. Simulations show they have good performance.

Key words Deconvolution kernel estimator errors-in-variables consistency asymptotic normality

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