

Self-Consistent Estimation of Censored Quantile Regression

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The principle of self-consistency has been employed to estimate regression quantile with randomly censored response. It has been of great interest to study how the self-consistent estimation of censored regression quantiles is connected to the alternative martingale-based approach. In this talk, I will first present a new formulation of self-consistent censored regression quantiles based on stochastic integral equations. I will show such a representation of censored regression quantiles entails a clearly defined estimation procedure, and moreover greatly simplifies theoretical investigations. I establish the large sample equivalence between the proposed self-consistent estimators and the existing estimator derived from martingale-based estimating equations. The connection between the new self-consistent estimation approach and previous self-consistent algorithms will also be elaborated.

Keywords: Censoring, Martingale, Self-consistency, Stochastic integral equation.