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Time series and financial econometrics

Sign-based tests for medians and independence

Exercises

1. Consider the "median regression" model:

$$y_t = x_t'\beta + u_t,\ t = 1, \ldots, T, \tag{1}$$

where $x_t,\ t = 1, \ldots, T$, are $k \times 1$ fixed vectors and the the disturbances $u_t,\ t = 1, \ldots, T$, are independent with median zero and continuous distributions. Propose procedures for testing hypotheses of the form $H_0 : \beta = \beta_0$ and build confidence sets for β.

References: Coudin and Dufour (2009), Dufour and Taamouti (2010).

References

COUDIN, E., AND J.-M. DUFOUR (2009): "Finite-Sample Distribution-Free Inference in Linear Median Regressions under Heteroskedasticity and Nonlinear Dependence of Unknown Form," *Econometrics Journal, 10th anniversary special edition*, 12(S1), S19–S49.

DUFOUR, J.-M., AND A. TAAMOUTI (2010): "Exact Optimal Inference in Regression Models under Heteroskedasticity and Non-Normality of Unknown Form," *Computational Statistics and Data Analysis*, 54, 2532–2553.