Extremal Quantile Regressions for Selection Models and the Black-White Wage Gap

Xavier D'Haultfoeuille† Arnaud Maurel‡ Yichong Zhang§

June 2014

Abstract

We consider the estimation of a semiparametric location-scale model subject to endogenous selection, in the absence of an instrument or a large support regressor. Identification relies on the independence between the covariates and selection, for arbitrarily large values of the outcome. In this context, we propose a simple estimator, which combines extremal quantile regressions with minimum distance. We establish the asymptotic normality of this estimator by extending previous results on extremal quantile regressions to allow for selection. Finally, we apply our method to estimate the black-white wage gap among males from the NLSY79 and NLSY97. We find that premarket factors such as AFQT and family background characteristics play a key role in explaining the level and evolution of the black-white wage gap.

Keywords: sample selection models, extremal quantile regressions, black-white wage gap.

JEL codes: C21, C24, J31.

---

*We are grateful to Derek Neal for useful suggestions and providing us with the sample used in his 1996 JPE article. We also thank Peter Arcidiacono, Victor Chernozhukov, Ivan Fernandez-Val, Shakeeb Khan, Pat Kline, Adam Rosen, Lowell Taylor, Ed Vytlacil, and participants at various seminars and conferences for useful comments and suggestions.

†CREST. E-mail address: xavier.dhaultfoeuille@ensae.fr.

‡Duke University, NBER and IZA. E-mail address: apm16@duke.edu.

§Duke University. E-mail address: yz98@duke.edu.