

Quantile Regression
LSE Short Course: 16-17 May 2011¹
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Quantile regression extends classical least squares methods for estimating conditional mean functions by offering a variety of methods for estimating conditional quantile functions, thereby enabling the researcher to explore more thoroughly heterogeneous covariate effects. The course will offer a comprehensive introduction to quantile regression methods and briefly survey some recent developments. The primary reference for the course will be my 2005 Econometric Society monograph, but further readings are suggested below in this course outline.

Course lectures will be complemented by several computationally oriented interludes designed to give students some experience with applications of the methods. These sessions will be conducted in the open-source R language, and will rely heavily on my `quantreg` package. Thus it would be helpful if students brought laptops equipped with this software already installed. R can be freely downloaded for PC/Mac/Linux machines from CRAN: <http://cran.r-project.org/>. The `quantreg` package is also available from CRAN, just click on "packages" on the left margin of the page and follow the directions you will find there. Students familiar with Stata and wanting to experiment with Stata data sets should consider also downloading the "foreign" package, which contains a function called `read.dta` that enables R to read Stata data files.

Tentative Topics

- (1) The Basics: What, Why and How? Koenker (2005, §1-2), Koenker and Hallock (2001)
- (2) Inference and Quantile Treatment Effects Koenker (2005, §3),
- (3) Nonparametric Quantile Regression Koenker (2005, §7), Koenker (2010), Belloni and Chernozhukov (2009)
- (4) Endogeneity and IV Methods Chesher (2003) Chernozhukov and Hansen (2005) Ma and Koenker (2005)
- (5) Censored QR and Survival Analysis Koenker and Geling (2001) Portnoy (2003) Peng and Huang (2008) Koenker (2008)

¹Version: May 10, 2011.

- (6) Quantile Autoregression Koenker and Xiao (2006)
- (7) QR for Longitudinal Data Koenker (2004) Galvao (2009)
- (8) Risk Assessment and Choquet Portfolios Bassett, Koenker, and Kordas (2004)
- (9) Quantile Regression Computation: From the Inside and Outside Koenker (2005, §6),

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