Applied Econometrics with 

Syllabus

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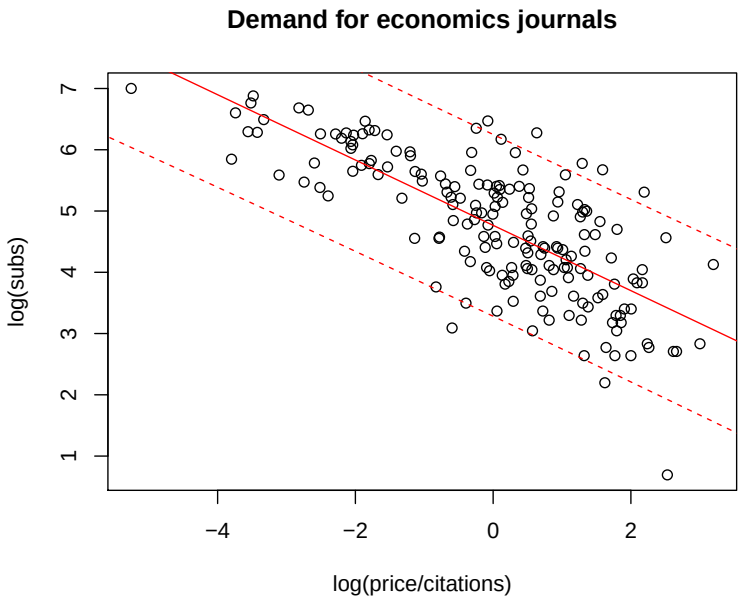
Overview

- Introduction
- Basics
- Linear regression
  - Simple/multiple linear regression
  - Partially linear models
  - Linear regression with time series data
  - Linear regression with panel data
  - Systems of linear equations
- Diagnostics and alternative methods of regression
  - Regression diagnostics
  - Diagnostic tests
  - Robust standard errors and tests
  - Resistant regression
  - Quantile regression

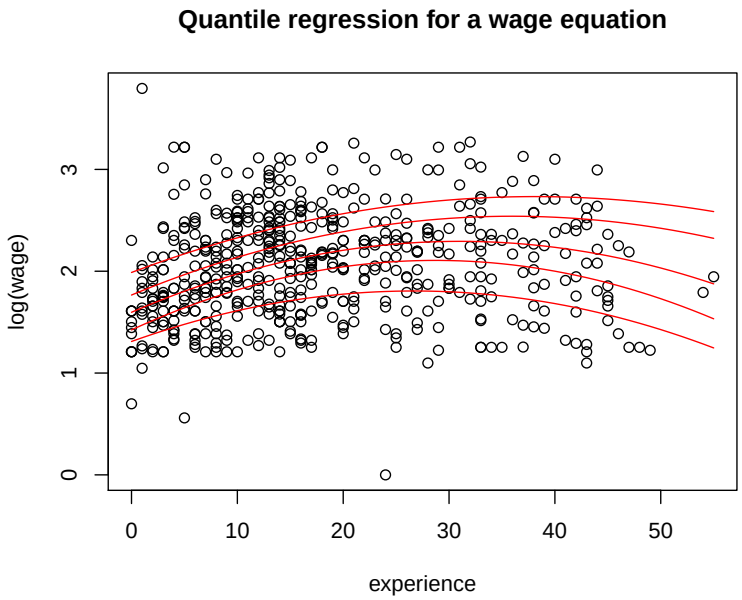
Overview

- Models of microeconometrics
  - Generalized linear models
  - Binary dependent variables
  - Regression models for count data
  - Censored dependent variables
- Time Series
  - Infrastructure and “naive” methods
  - Classical model-based analysis
  - Stationarity, unit roots, and cointegration
  - Time series regression and structural change
- Programming your own analysis
  - Simulations
  - Bootstrapping a linear regression
  - Maximizing a likelihood
  - Reproducible econometrics using `Sweave()`

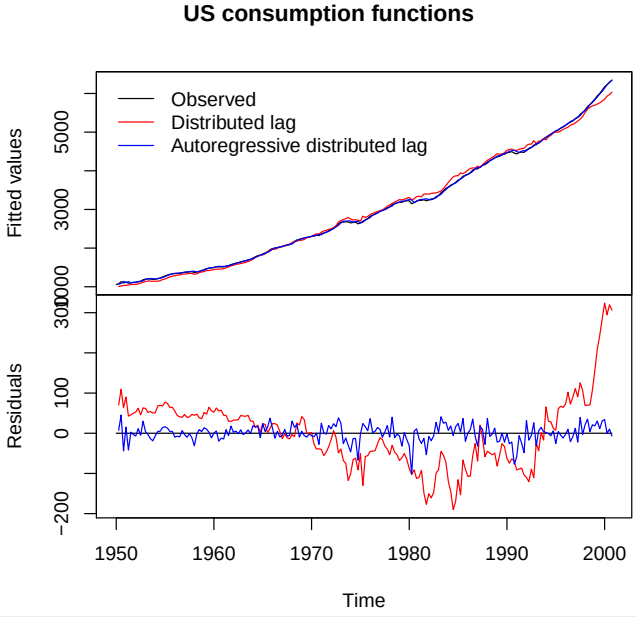
Linear regression



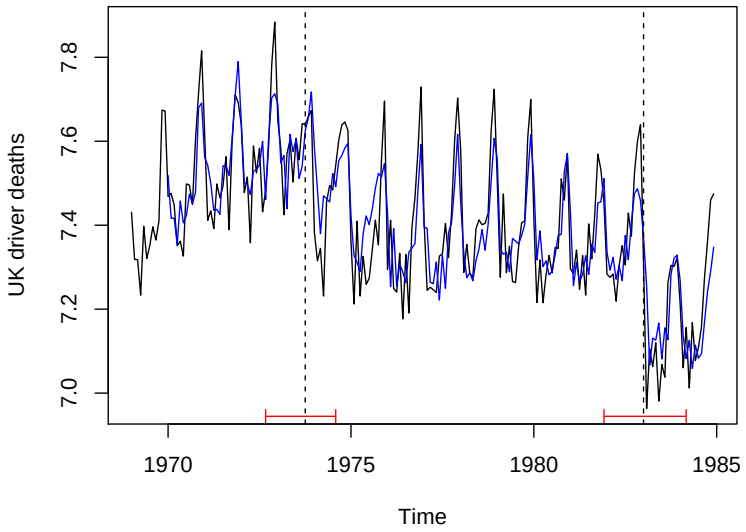
Quantile regression



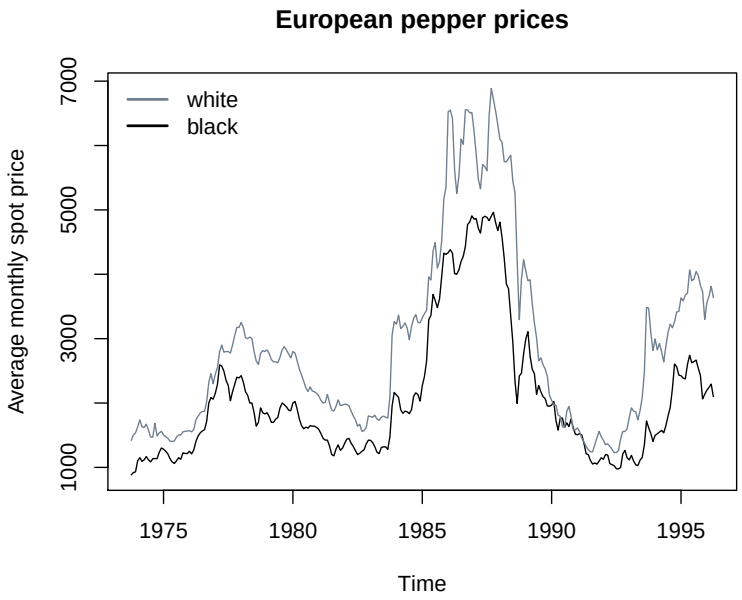
Time series regression



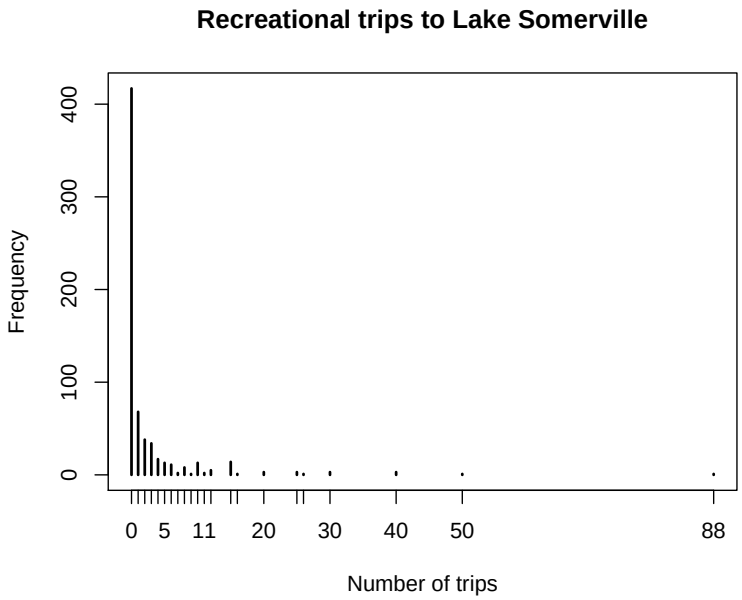
Structural change analysis



Cointegration



Regression models for count data



R

- Open-source software, freely available under GPL
- Current version: 3.3.3
- Homepage
  `https://www.R-project.org/`
- Comprehensive R Archive Network
  `https://CRAN.R-project.org/`
- Econometrics task view:
  `https://CRAN.R-project.org/view=Econometrics`
- Extension package **AER** (Applied Econometrics with R)
  `https://CRAN.R-project.org/package=AER`
- Integrated development environment RStudio:
  `https://www.RStudio.com/products/RStudio/`.

Books

- Kleiber C and Zeileis A (2008), *Applied Econometrics with R*, New York: Springer-Verlag.

For methodological background:

- Baltagi BH (2002). *Econometrics*, 3rd edition. Berlin: Springer-Verlag.
- Greene WH (2003). *Econometric Analysis*, 5th edition. Upper Saddle River, NJ: Prentice Hall.
- Stock JH and Watson MW (2007). *Introduction to Econometrics*, 2nd edition. Boston: Addison Wesley.