Stochastic Processes and Time Series Econometrics: 311

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Abstract

This course develops and applies time series statistical methods for the analysis of dynamic economic models. It develops tools from probability theory, statistics and decision theory and uses them to study linear and nonlinear models of economic time series. These tools support applications in empirical macroeconomics and finance.

Course Outline

I. Some Decision Theory Basics (3 lectures, class notes)

Fan (1952), Wald (1950), Savage (1954), Ferguson (1967), Kreps (1988), Gilboa and Marinacci (2013), Gilboa (2015), Hansen and Marinacci (2016)

II. Stochastic Processes and Applications (4 lectures, class notes)

Breiman (1968), Hansen and Sargent (1991), Meyne and Tweedie (1996), Lombardo and Uhlig (2016)

III. Stochastic Growth, Martingales and Central Limit Theory (4 lectures, class notes)

Gordin (1969), Beveridge and Nelson (1981), Engle and Granger (1987), Fisher (2006), Hansen et al. (2008), Blanchard et al. (2013)

IV. Likelihood Processes, Filtering and Bayesian methods (4 lectures, class notes)

Chernoff (1952), Box and Tiao (1992), Carter and Kohn (1994), Hansen et al. (1999), Hansen (2007), Angeletos et al. (2016)

V. Generalized Method of Moment Estimation (5 lectures, class notes)

Sargan (1958), Hansen (1982), Christiano and Eichenbaum (1992), Gourieroux et al. (1993), Smith (1993), Hansen and Heckman (1996), Hansen (2000), Cochrane (2001), Chernozhukov and Hong (2003), Arellano (2003), Singleton (2006), Hansen (2008), Hansen (2014)

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