

E806 Advanced Econometrics III (Spring 2023)

Instructor:

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Lecture Time:

Lectures: Wednesday 10:15am-11:45am and Thursday 8:30am-10:00am, P044 (L7, 3-5)
Tutorial: Thursday 10:15am-11:45am, P044 (L7, 3-5)
Note: We may have to find a replacement date for at least one of the sessions on May 18 which is a holiday.

Course Description:

Part I is devoted to the analysis of panel data models. Besides discussing fixed- and random effects settings we also look into GMM/IV estimation and dynamic panel models. Part II deals with univariate time series analysis. We start with discussing theoretical foundations of time series analysis and then turn to linear models, including autoregressions. Finally, we deal with non-stationary unit root time series if time permits.

Homework and Grading:

Grading for this course will be based on the final exam (100 points). You can earn up to 10 bonus points if you submit solutions to the assignments that demonstrate a sufficient attempt to solve problems. To each of the three assignments a pre-announced number of bonus points is allocated. The assignments will mainly involve methodological questions but also contain some empirical questions or coding exercises. You may use any of the following (matrix) programming languages: STATA, R, Matlab, or Gauss to address the latter types of questions. You will usually have a week to complete an assignment. Your solutions and programming code must be sent by email. Answers will be (partly) discussed in the tutorial sessions.

Literature:

Cameron, A.C. and Trivedi, P.K. (2005), *Microeconometrics: Methods and Applications*, Cambridge: Cambridge University Press. [CT] (University library offers online version)
Hamilton, J.D. (1994), *Time Series Analysis*, Princeton: Princeton University Press. [Ham]
Hansen, B.E. (2022), *Econometrics*, Princeton: Princeton University Press. [Han]
Hayashi, F. (2000), *Econometrics*, Princeton: Princeton University Press. [Hay]
Kilian, L. and Lütkepohl, H. (2017), *Structural Vector Autoregressive Analysis*, Cambridge: Cambridge University Press. [KL]
Wooldridge, J.M. (2010), *Econometric Analysis of Cross Section and Panel Data*, Cambridge: The MIT Press. [Wo]

Course Outline with Tentative Schedule:

Part I: Panel Data Analysis

Lectures 1-3: Basic Panel Data Analysis (April 19-20, 26)

Wo: Ch. 7.2, 7.8, Ch. 10; Alternative: CT: Ch. 21

Lectures 3-5: GMM/IV Estimation and Dynamic Panel Models (April 26-27, May 3)

Wo: Ch. 11; Alternative: CT: Ch. 22

Part II: Time Series Analysis

Lectures 6-8: Introduction, Theoretical Foundations (May 4, 10, 11)

Han: Sects. 14.1-14.13; Additional: Hay: Sects. 2.2, 6.1, Ham: Ch. 7

Lecture 9-12: Linear Models (May 17, 24, 25, 31)

Han: Sects. 14.14-14.46, KL: Sects. 2.3.3, 12.2-12.3; Additional: Ham: Ch. 3

Lecture 13: Non-stationary unit root time series (June 1)

Han: Sects. 16.1.-16.13; Alternative: Ham: Ch. 17*

*We will skip a couple of subsection. Information follows.