ECONOMETRIC METHODS II: TIME SERIES

SYLLABUS 2010

KRISTOFFER P. NIMARK

Class time and place: Tuesdays 11am-1pm (20.051) and Thursdays 3pm-5pm (20.053)
Office hours: Mondays 11.00 -12.30 Office 23.408 (Wellington building)
Email Address: knimark@crei.cat
Course website: www.kris-nimark.net

Overview

This half of the course aims at equipping students with the tools needed to produce applied macro economic research. Most of the material can be found in a combination of Hamilton's textbook and Cochrane's "text", but reading articles may also be required.

Administrative matters

Grades will be based on 2 homework assignments (2x10%) and a midterm (30%) adding up to the 50% available for the second half of Econometric methods II (Time Series)

1 Cointegration.

- Representation
- Testing and Estimation

2 Structural VARs.

- Orthogonalized shocks
- Impulse response functions
- Variance decompositions

3 Factor and FAVAR models.

- Principal components
- Dynamic factor models
- FAVAR models

Date: May 11, 2010.

4 State Space Models and the Kalman Filter.

- Representation and uses
- Estimating a hidden process using The Kalman filter
- The Kalman smoother and the simulation smoother
- Recursive log-likelihood functions
- Numerical maximization

5 An Introduction to Bayesian Estimation of DSGE models.

- Linearized structural models as state space systems
- The role of observables and measurement errors
- MCMC (Metropolis Hastings)
- Imposing prior information

References

[1] Hamilton, James D., 1994, *Time Series Analysis*, Princeton University Press
[2] Cochrane, John, 2005, *Time Series for Macroeconomics and Finance*, http://faculty.chicagobooth.edu/john.cochrane/research/Papers/Time_Series_Book.pdf