

Macroeconometrics - Fall 2009

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Syllabus

1 Description

The purpose of this course is to familiarize students with current techniques used in macroeconomic time series models as well as selected approaches to study sources of business cycle fluctuations, examine shock propagations, or effects of economic policy changes. The focus is on implementation of the models presented in the course. Topics covered include ARMA models; VARs, Granger causality, and impulse response functions; unit roots and structural breaks; Markov-switching models; calibration and estimation of RBC and DSGE models.

2 Requirements

Homework assignments will involve generating and explaining computer output from models covered in the class with weight of 50% of final grade. The class ends with either in-class or take-home final exam.

3 Readings

There is a number of textbooks that covers a part of material discussed in class. Book that covers most of the material is

- *Time Series Analysis* by James D. Hamilton, Princeton University Press, 1994.

Other texts that cover discussed material or serve as good introduction are

- *State-Space Models with Regime Switching* by Chiang-Jin Kim and Charles R. Nelson, MIT Press, 1999.
- *Applied Econometric Time Series* by Walter Enders, Wiley, 2004.
- *Introduction to Bayesian Econometrics* by Edward Greenberg, Cambridge University Press, 2007.
- *Structural Macroeconometrics* by David N. DeJong with Chetan Dave, Princeton University Press, 2007.

The readings include journal articles and chapters from the above books.

4 Outline

1. Stationary Time Series Analysis
ARMA Models, Forecasting, State-Space Form, Kalman Filter
 - Hamilton 1-5
 - Kim and Nelson 2-3
 - Diebold, F.X., 1998, “The Past, Present and Future of Macroeconomic Forecasting,” *Journal of Economic Perspectives* 12, 175-192.
2. Structural Analysis
VAR Models, Granger Causality, IRFs
3. Structural Breaks and Nonlinearity
Structural Breaks, Trend/Cycle Decomposition, Switching Models
4. Structural Macro Models
Calibration, Estimation of DSGE models.