Course Outline and Reading List

Advanced Macroeconomics II is a topics course on contemporary methods and issues in macroeconomics. This section of the course will focus on the estimation and evaluation of dynamic models of the macroeconomy.

One of the exciting aspects of dynamic rational expectations models is the tight link these models provide between theory and estimation. The solution (or really the equilibrium) of these models are exactly the objects for which the econometrics is cast. The decision rules and the law of motions for the state variables are Markov processes, and these Markov processes imply ergodic distributions. Markov processes and ergodic distributions are objects econometricians are well set up to estimate.

Of course most dynamic models suffer from a paucity of shocks and general mis-specification. Furthermore it is often difficult if not impossible to fully characterize the likelihood function for these models. Hence this course will discuss a variety of methods for parameterizing and evaluating the goodness of fit of these models. We will discuss not only the consistency and efficiency of these methods, but their numerical implementation as well.

While there is no assigned textbook for this course, you may find it useful to have the following books close at hand:


We will focus on numerically implementing the methods discussed. Consequently much of the material will be presented in a more “cookbook” style than may the case in other classes. As you progress in your use of these methods, you will want to move beyond these cookbook discussions; but hopefully this course will allow you make links between your macroeconomics and econometrics courses. Moreover this course is designed to have you enter your third-year of graduate school moving forward on a dissertation rather than spending time learning how to translate what you have learned in your course work onto the computer. You will probably find it useful to have on your bookshelf a good econometric text at the level of

Greene, William (2003) *Econometric Analysis* Prentice Hall and/or

While this is not a course on computational methods, most of the models we will be working with do not have analytical solutions. Hence we will use numerical methods to solve these models. I will discuss solution techniques in class and provide Matlab code, but students will be required to use the computer to solve models and implement the estimation methods presented in the course. Students who wish to learn more about numerical techniques for solving dynamic models are encouraged to take Econ 561a *Computational Methods for Economic Dynamics*.

Students are encouraged to ask questions in class or to stop by my office. My official office hours are Wednesdays 1-3. You may wish to send me an e-mail before showing up if you would like to meet outside that time. My contact information is:

George Hall  
28 Hillhouse, Room 304  
432-3566  
george.hall@yale.edu

There will be several homework assignments and a *short* research paper. Bjorn Brugemann will be teaching the second half of this course. We will aggregate the scores from the two halves to determine the final course grade. I strongly discourage you from taking an incomplete in this course.

The home page for this course is [http://www.econ.yale.edu/~gjh9/econ526b/](http://www.econ.yale.edu/~gjh9/econ526b/). Announcements, problem sets, computer programs, and additional handouts will be posted on this page. You are encouraged to check the web page regularly.

In the third week of the course, Jordi Gali, a visiting scholar from MIT, will provide two lectures. The week prior the Professor Gali’s visit I will provide some background discussion and readings.

If you are interested in writing a dissertation in macroeconomics, you will find that your understanding of both current issues and methods will be bolstered by regularly attending the Macro Workshop and Macro Lunch. You are strongly encouraged to attend both.

The reading list provides neither a comprehensive list of methods nor a complete list of papers developing and using these methods. The list is designed to highlight some of the key papers and illustrate the methods used in a variety of settings.
Taking DSGE models to the data: a smorgasbord of approaches

1. Calibration and Setting the Stage


2. Maximum Likelihood


3. Generalized Method of Moments


4. Indirect Inference


5. Bayesian Approaches


6. A Hybrid


**RBCs and VARs**


P Christiano, Lawrence, Martin Eichenbaum and Robert Vigfusson (2005) “Assessing VARs” manuscript