COURSE OUTLINE AND READING LIST, 2ND EDITION

Many of the classes will feature student-led discussion of papers in the existing literature. All those attending the course will be expected to have read the papers to be discussed closely enough to participate in the discussion. Also, each student in the course will propose a small DSGE model (which can match one in the existing literature) that can be solved and estimated as a course project.

1. DSGE MODELS USABLE FOR POLICY ANALYSIS

1.1. **Why are Bayesian DSGE models appealing for policy analysis?**

Remarks by Chairman Alan Greenspan at the Meetings of the American Economic Association, San Diego, California, January 3, 2004:

. . . the conduct of monetary policy in the United States has come to involve, at its core, crucial elements of risk management. This conceptual framework emphasizes understanding as much as possible the many sources of risk and uncertainty that policymakers face, quantifying those risks when possible, and assessing the costs associated with each of the risks. In essence, the risk management approach to monetary policymaking is an application of Bayesian decisionmaking.

Link for the full text, which elaborates the quote and gives examples:
www.federalreserve.gov/boarddocs/speeches/2004
References:

Sims (2002)
Smets and Wouters (2002)
Christiano, Motto, , and Rostagno (2004)
Fernández-Villaverde and Rubio-Ramírez (2004)
Aruoba, Fernández-Villaverde, and Rubio-Ramírez (2004)

1.2. **Problems with the theoretical structure of these models.** They have to postulate inertial mechanisms to explain sluggish dynamics in the data; the empirical micro foundations of these mechanisms are weak; yet they may be important for conclusions about the welfare effects of policies.

1.3. **Problems with their claims to fit well.**

1.3.1. *Lindley paradox.*

- Probabilities on models tend to emerge as zero or one, and to be sensitive to the particular data set or to apparently minor aspects of specification.
- Sparse sets of models.
- The importance of choice of priors on parameters within models.

- Training sample priors.

References:

Remarks on Bayesian Model Comparison
Schorfheide (2000)

1.3.2. *Trend and initial conditions.*
- Standard practice: "Eliminate" the trend and mean, Then pretend the detrended data is raw data.
  - Can seriously distort fit comparisons between DSGE's that assume stationarity and BVAR's (or DSGE's that model growth).
  - Fit is no longer connected to recursively updated forecasting performance.
- Better practice
  - Ideally, the DSGE models trend explicitly.
  - Second-best: The estimation of detrending parameters is done jointly with other parameters, rather than as preprocessing step.

2. Has monetary policy improved? Why have macro fluctuations dampened?

3. Rational inattention: information theory in macro dynamics

References

Aruoba, S. B., J. Fernández-Villaverde, and J. F. Rubio-Ramírez (2004): "Comparing Solution Methods for Dynamic Equilibrium Economies," Penn institute for economic research working paper, University of Pennsylvania.

Christiano, L., R. Motto, , and M. Rostagno (2004): "The Great Depression and the Friedman-Schwartz Hypothesis," Discussion paper, Northwestern University and ECB.

Fernández-Villaverde, J., and J. F. Rubio-Ramírez (2004): "Estimating Dynamic Equilibrium Economies: Linear versus Nonlinear Likelihood," Penn Institute for Economic Research working paper 04-005, University of Pennsylvania.

Schorfheide, F. (2000): "Loss Function-Based Evaluation of DSGE Models," *Journal of Applied Econometrics*, 15(6), 645–670.

Sims, C. A. (2002): "The Role of Models and Probabilities in the Monetary Policy Process," *Brookings Papers on Economic Activity*, 2002(2), 1–62.

Smets, F., and R. Wouters (2002): "An Estimated Stochastic Dynamic General Equilibrium Model of the Euro Area*," working paper, European Central Bank and National Bank of Belgium, `Frank.Smets@ecb.int,Rafael.Wouters@nbb.be`.