ECON 263B

ADVANCED MACROECONOMICS II:

BEHAVIORAL MACROECONOMICS

Spring 2011

Professor: Fabio Milani, **fmilani@uci.edu**

Office Hours: SSPA 3145, by appointment

Time and Location: Mo-We 9:30AM-10.50AM, SSPB 3266

Course Webpage: **http://www.socsci.uci.edu/~fmilani/econ263a.html**

Grading:

Assignments	**10%**
In-Class Presentations	**10%**
Paper Comments	**10%**
Research Paper Proposal	**30%**
Take-Home Exam	**40%**

Course description:

In the course, we will first focus on the derivation and estimation of state-of-the-art DSGE models, with particular emphasis on models useful for monetary policy.
You will learn:
- to build macroeconomic models with microeconomic foundations.
- to solve rational expectations models.
- to estimate macroeconomic models using Bayesian methods.

We will then discuss a variety of extensions to the baseline framework and a selection of topics, which can hopefully give you the seeds for ideas that you can develop in your own future research. The extensions will focus on: - adding "behavioral" elements to state-of-the-art macroeconomic models; - incorporating financial frictions in macroeconomic models.

Textbook: There is no single textbook required. We won't follow a particular book, but some of these can serve as reference if you are interested in macro

· **Woodford**, *Interest and Prices*
· **Gali'**, *Monetary Policy, Inflation, and the Business Cycle*

· **Walsh**, *Monetary Theory and Policy*
· **Obstfeld and Rogoff**, *Foundations of International Macroeconomics*
· **Heer and Maussner**, *Dynamic General Equilibrium Modelling: Computational Methods and Applications*
· **Fernandez-Villaverde and Rubio-Ramirez**, *Methods in Macroeconomic Dynamics*, available at http://www.econ.upenn.edu/~jesusfv/teaching.html

For the econometrics used in the course, these books might be useful:

· **Frank Schorfheide**, *Lecture Notes for Estimation and Evaluation of DSGE Models*, available at http://www.econ.upenn.edu/~schorf/papers/dsge%20estim-eval.zip
· **Gary Koop**, *Bayesian Econometrics*
· **Fabio Canova**, *Methods for Applied Macroeconomic Research*
· **John Geweke**, *Contemporary Bayesian Econometrics and Statistics*.
· **Dav**e **and DeJong**, *Structural Macroeconometrics*

Assignments

There will be 3-5 assignments during the quarter. Most of them will require some coding in Matlab (or your alternative favorite software).

In-Class Presentation

Over the quarter, each of you will in turn present in class some papers from the reading list, related to the topic we're discussing during the week.

Paper Comments

For each topic in the syllabus, we'll discuss several papers. You will be required to write a review of the literature for each topic.

Paper Proposal

By the end of the quarter, you'll need to submit a proposal for a research paper, based on the topics discussed in the course (related topics may also be acceptable). You'll be required to submit a first version of the proposal by the middle of the quarter, and a final version at the end of the quarter.

Take-Home Exam

There will be no in-class final exam. Instead, you will receive a take-home exercise, which will require you to estimate a given model using the techniques learned in the course and developed in the previous homework assignments.

Topics (Preliminary)

1. **State of Macroeconomics/ Macroeconomics Controversies (Introduction)**

   Gali', The New Keynesian Approach to Monetary Policy Analysis: Lessons and New Directions
   Woodford, Convergence in Macroeconomics
   Woodford, Revolution and Evolution in Twentieth-Century Macroeconomics
   Gali' and Gertler, Macroeconomic Modeling for Monetary Policy Evaluation
   Lucas, Macroeconomic Priorities
   Chari, Kehoe, and McGrattan, New Keynesian Models: Not Yet Useful for Policy Analysis
   Chari, Kehoe, and McGrattan, On the Need for a New Approach to Analyzing Monetary Policy
   Shimer, Convergence in Macroeconomics: The Labor Wedge
   Mankiw, **The Macroeconomist as Scientist and Engineer**
   Blanchard, **The State of Macro**
   Leijonhufvud, **Nature of an Economy**
   IMF Conference,
   http://www.imf.org/external/np/seminars/eng/2011/res/index.htm
   Solow, **Building a Science of Economics for the Real World**
   Caballero, **Macroeconomics after the Crisis: Time to Deal with the Pretense-of-Knowledge Syndrome**
   Modigliani, **The Monetarist Controversy or, Should We Forsake Stabilization Policies?**
   Goodfriend and King, **The New Neoclassical Synthesis and the Role of Monetary Policy**
   Atkeson and Kehoe, **On the Need for a New Approach to Analyzing Monetary Policy**

2. **DSGE Models (Benchmark) + taking models to the data**

   Smets and Wouters, Shocks and frictions in US business cycles: a Bayesian DSGE approach
   Smets and Wouters, An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area
   Christiano, Eichenbaum, and Evans, Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy
   Smets and Wouters, Bayesian New Neoclassical Synthesis (NNS) Models: Modern Tools for Central Banks
   Christiano, Trabandt, Walentin, Handbook of Monetary Economics Chapter on Monetary DSGE Models

Sims, Solving Linear Rational Expectations Models
See also Lubik and Schorfheide, Computing Sunspots in Linear Rational Expectations Models

Bayesian Estimation:	An and Schorfheide, Bayesian Analysis of DSGE Models. Gary Koop, *Bayesian Econometrics* John Geweke, *Contemporary Bayesian Econometrics and Statistics* Fabio Canova, *Methods for Applied Macroeconomic Research* Schorfheide, *Lecture Notes for Estimation and Evaluation of DSGE Models* Fernandez-Villaverde and Rubio-Ramirez, *Methods in Macroeconomic Dynamics* Dave and DeJong, *Structural Macroeconometrics* Kim and Nelson, *State-Space Models with Regime-Switching* Fernandez-Villaverde, The Econometrics of DSGE Models Schorfheide, Estimation and Evaluation of DSGE Models: Progress and Challenges Del Negro and Schorfheide, Bayesian Macroeconometrics Fernandez-Villaverde et al., The New Macroeconometrics: a Bayesian Approach

Selected Recent Applications

Investment Shocks and Business Cycles, Alejandro Justiniano, Giorgio Primiceri, and Andrea Tambalotti, *Journal of Monetary Economics*, 57(2), March 2010, pp. 132-145.
The Time-Varying Volatility of Macroeconomic Fluctuations, AER 2007, Justiniano and Primiceri.
`Fortune or Virtue: Time-Variant Volatilities Versus Parameter Drifting in U.S. Data`, Jesus Fernandez-Villaverde, Pablo Guerron-Quintana and Juan Rubio-Ramirez.
Sticky Prices versus Monetary Frictions: An Estimation of Policy Trade-offs
Frank Schorfheide and Boragan Aruoba, *American Economic Journal: Macroeconomics,* 3(1), 2011, 60-90.

Some Estimation Issues

Nikolay Iskrev, Local identification in DSGE models, Journal of Monetary Economics, Volume 57, Issue 2, March 2010, Pages 189-202
Canova and Sala, Back to Square One: Identification Issues in DSGE Models.
Guerron-Quintana, What you match does matter: the effects of data on DSGE estimation, JAE 2010.
Canova and Ferroni, Multiple filtering devices for the estimation of cyclical DSGE models
Del Negro and Schorfheide, Forming Priors for DSGE Models (and How It Affects the Assessment of Nominal Rigidities

RBC Models

King and Rebelo, **Resuscitating Real Business Cycles**
Rebelo, **Real Business Cycle Models: Past, Present and Future**

Open Economy Models

Justiniano and Preston, **Can Structural Small Open Economy Models Account for the Influence of Foreign Shocks?**
Rabanal and Tuesta, **Euro-Dollar Real Exchange Rate Dynamics in an Estimated Two-Country Model: What is Important and What is Not**
Adolfson et al., **Bayesian Estimation of an Open Economy DSGE Model with Incomplete Pass-Through**
Lubik and Schorfheide, **Do Central Banks Respond to Exchange Rates? A Structural Investigation**
Lubik and Schorfheide, **A Bayesian Look at New Open Economy Macroeconomics**

What are the sources of Business Cycle fluctuations?

Background: VARs and SVARs

Fernández-Villaverde, Rubio-Ramírez, and Sargent, **A, B, C's (and D's) for Understanding VARs.**
Chari, Kehoe, and McGrattan, **A Critique of Structural VARs Using Business Cycle Theory**
Christiano, Eichenbaum, and Evans, **Monetary Policy Shocks: What Have We Learned and to What End?**
Shapiro and Watson, **Sources of Business Cycle Fluctuations**
Lorenzoni, **A Theory of Demand Shocks**
Gali', **Technology, Employment and the Business Cycle: Do Technology Shocks Explain Aggregate Fluctuations?**
Cochrane, **Shocks**

3. **Behavioral Macroeconomics**

   a. **Non-standard Preferences. Habit Formation (keeping up and catching up with the Joneses). Hyperbolic Discounting. Epstein-Zin.**
   Macro and Micro evidence on habit formation:
   Dynan, Habit Formation in Consumer Preferences: Evidence from Panel Data
   Ravina, Habit Formation and Keeping Up with the Joneses: Evidence from Micro Data
   Carrasco et al., Consumption and Habits: Evidence from Panel Data
   Fuhrer, Habit Formation in Consumption and Its Implications for Monetary

Dennis, Consumption-Habits in a New Keynesian Business Cycle Model
Lettau and Uhlig, Can Habit Formation Be Reconciled with Business Cycle Facts?
Quite less technical: The Joneses (http://www.imdb.com/title/tt1285309/)
Abel, Asset prices under habit formation and catching up with the Joneses
Campbell and Cochrane, By force of Habits: A consumption-Based Explanation of Aggregate Stock-Market Behavior
Boldrin, Christiano and Fisher, Habit Persistence, Asset Returns, and the Business Cycle
Constantinides, Habit formation: A resolution of the equity premium puzzle
Amato and Laubach, Implications of habit formation for optimal monetary policy
Ravn et al, Deep Habits
Angeletos et al, The Hyperbolic Consumption Model: Calibration, Simulation, and Empirical Evaluation
Laibson, David. 1997. Golden Eggs and Hyperbolic Discounting
Laibson's AEA slides:
> http://www.economics.harvard.edu/faculty/laibson/files/Empirical%2Bevidence%2Bon%2Bdiscounting_AEA%2BLaibson%2BLecture%2B1.pdf
Harris, Christopher, and David Laibson. 2001. Dynamic Choices of Hyperbolic Consumers
Laibson et al,. Estimating Discount Functions with Consumption Choices over the Lifecycle
McClure et al,. Separate Neural Systems Value Immediate and Delayed Monetary Rewards
Chabris, Laibson, and Schuldt, Intertemporal Choice, in Palgrave Dictionary of Economics.
Barro, Ramsey meets Laibson in the neoclassical growth model
Rubinstein, "Economic and Psychology" The case of hyperbolic dicounting
Graham & Snower, Hyperbolic discounting and the Phillips curve
Mischel et al, Delay of Gratification in Children, Science
Backus, Routledge and Zin, Exotic preferences for macroeconomists
http://hassler-j.iies.su.se/COURSES/NewPrefs/
van Binsbergen et al, Likelihood estimation of DSGE models with Epstein-Zin preferences

b. **"News" shocks**
Beaudry and Portier, **Stock Prices, News and Economic Fluctuations**
Beaudry and Portier, **An Exploration into Pigou's Theory of Cycles**
Beaudry and Portier, **When can changes in expectations cause business cycle fluctuations in Neo-Classical Settings?**
Jaimovich and Rebelo, **Behavioral Theories of the Business Cycle**

Jaimovich and Rebelo, **Can News about the Future Drive the Business Cycle?**
Danthine et al, **Productivity Growth, Consumer Confidence and the Business Cycle**
Schmitt-Grohe and Uribe, **What's News in Business Cycles**
Fujiwara, Hirose, and Shintani, **Can News Be a Major Source of Aggregate Fluctuations? A Bayesian**
Fujiwara, **Growth Expectation**
Barsky and E. Sims, **News Shocks**
Barsky and E. Sims, **Information Shocks, Animal Spirits, and the Meaning of Innovations in Consumer Confidence**
Beaudry, P. and F. Portier, **The 'News' View of Economic Fluctuations: Evidence from Aggregate Japanese Data and Sectoral U.S. Data**
Jaimovich and Rebelo, **News and Business Cycles in Open Economies**
Beaudry, Dupaigne, Portier, **Modeling News-driven International Business Cycles**
Kobayashi and Nutahara, **Nominal Rigidities, News-Driven Business Cycles, and Monetary Policy**
Lorenzoni, **News Shocks and Optimal Monetary Policy**
Davis, **News and the Term Structure in General Equilibrium**
E. Sims, **Expectations Driven Business Cycles: An Empirical Evaluation**
Milani and Treadwell, The Effects of Monetary Policy "News" and "Surprises"
Hirose and Kurozumi, Changes in the Federal Reserve Communication Strategy: A Structural Investigation
Tille and Van Wincoop, A Method for Solving *DSGE Models* with Dispersed Private Information

c. **Near-Rational Expectations & Learning**
Evans and Honkapohja, *Learning and Expectations in Macroeconomics*.
Sargent, *Bounded Rationality in Macroeconomics*.
Evans and Honkapohja, **Learning Dynamics**
Evans and Honkapohja, **Learning as a Rational Foundation for Macroeconomics and Finance**
Evans and Honkapohja, **Expectations, Learning and Monetary Policy: An Overview of Recent Research**
Evans and Honkapohja, **Learning and Macroeconomics**
Evans and Honkapohja, **The Economics of Expectations**
Bullard, **The Learnability Criterion and Monetary Policy**
Adaptive Learning in Macroeconomics webpage
Marcet and Sargent, **Convergence of least squares learning mechanisms in self-referential linear stochastic models**
Lucas, R.E. Jr., **Adaptive behavior and economic theory**
Carceles-Poveda and Giannitsarou, **Adaptive Learning in Practice**

Preston, **Adaptive Learning in Infinite Horizon Decision Problems**
Preston, **Learning About Monetary Policy Rules When Long-Horizon Expectations Matter**
Orphanides and Williams, **The decline of activist stabilization policy: Natural rate misperceptions, learning, and expectations**
Eusepi and Preston, **Expectations, Learning and Business Cycle Fluctuations**
Eusepi and Preston, Central Bank *Communication* and Expectations Stabilization
SARGENT, WILLIAMS, and ZHA, **SHOCKS AND GOVERNMENT BELIEFS: THE RISE AND FALL OF AMERICAN INFLATION**
Sargent, Williams, and Zha, The Conquest of South American Inflation
Milani, **Expectations, Learning and Macroeconomic Persistence**
Milani, **Learning and Time-Varying Macroeconomic Volatility**
Milani, **Expectation Shocks and Learning as Drivers of the Business Cycle**
Levine, Pearlman, Perendia, Yang, **Endogenous Persistence in an Estimated DSGE Model under Imperfect Information** (this with RE, but imperfect info)
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d. **Sunspots, Animal Spirits, Expectation Shocks**
Benhabib and Farmer, Indeterminacy and Sunspots in Macroeconomics
Farmer, *The Economics of Self-Fulfilling Prophecies*
Cass and Shell, Do Sunspots Matter?
Azariadis, Self-Fulfilling Prophecies
Benhabib and Farmer, Indeterminacy and Increasing Returns
Howitt and McAfee, Animal Spirits
Woodford, Learning to believe in sunspots
Farmer-Guo, Real Business Cycles and the Animal Spirits Hypothesis
Lubik and Schorfheide, Computing Sunspots in Linear Rational Expectations Models
Lubik and Schorfheide, Testing for Indeterminacy: an application to U.S. Monetary Policy
Clarida, Gali', Gertler, Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory
Evans, The *fragility* of sunspots and bubbles
Evans and Honkapohja, Expectational Stability of Stationary Sunspot Equilibria in a Forward-looking Model
Evans and McGough, Stable Sunspot Solutions in Models with Predetermined Variables
De Grauwe, Animal Spirits and Monetary Policy
Milani, Expectation Shocks and Learning as Drivers of the Business Cycle

e. **Sticky Information/ Rational Inattention**
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f. Heterogeneous Interacting Agents

Hommes, Heterogeneous agent models in economics and finance
Leijonhufvud , Agent-Based Macro
LeBaron- Tesfatsion, Modeling Macroeconomies as Open-Ended Dynamic Systems of Interacting Agents

4. **Financial frictions**

Bernanke and Gertler, **Agency Costs, Net Worth, and Business Fluctuations**
Bernanke, Gertler, and Gilchrist, **The financial accelerator in a quantitative business cycle framework**
Carlstrom and Fuerst, **Agency Costs, Net Worth, and Business Fluctuations: A Computable General Equilibrium Analysis**
Christensen and Dib, **The financial accelerator in an estimated New Keynesian model**
Gilchrist, Gertler, and Natalucci, **External Constraints on Monetary Policy and the Financial Accelerator'**
Gilchrist and Saito, **Expectations, Asset Prices and Monetary Policy: The Role of Learning'**
Queijo von Heideken, **How Important are Financial Frictions in the U.S. and the Euro Area**
De Graeve, **The External Finance Premium and the Macroeconomy: US Post–WWII Evidence**
Christiano, Motto, and Rostagno, **Financial Factors in Business Cycles**
Kiyotaki and Moore, **Credit Cycles**
Levin, Natalucci, and Zakrajsek, **The Magnitude and Cyclical Behavior of Financial Market Frictions**
Curdia and Woodford, **Credit Frictions and Optimal Monetary Policy**
Gerali, Neri, Sessa, Signoretti, **Credit and Banking in a DSGE Model**
Gilchrist, Yankov, Zakrajsek, **Credit Market Shocks and Economic Fluctuations:. Evidence from Corporate Bond and Stock Markets**
Gertler, Kiyotaki, Financial Intermediation and Credit Policy in Business Cycle Analysis

Housing Market

Iacoviello, **House prices, borrowing constraints and monetary policy in the business cycle**
Iacoviello and Neri, **Housing Market Spillovers: Evidence from an Estimated DSGE Model**
Iacoviello, Housing in DGSE *Models*: Findings and *New Directions*
Notarpietro, **Credit Frictions and Household Debt in the U.S. Business Cycle: A Bayesian Evaluation**...

Mendicino and Pescatori, **[Credit Frictions, Housing Prices, and Optimal Monetary Policy Rules](#)**

5. **Labor market frictions**