ECON 810: Advanced Macroeconomic Theory

Professor: Noah Williams
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Course Schedule:
Lectures: Monday and Wednesday from 9:30-10:45, 1333 Sterling Hall
All course documents and communication will also be on the class web page:
> http://www.ssc.wisc.edu/~nwilliam/Econ810

Requirements for this portion of the class include attendance at the lectures, completion of problem sets, a referee report and presentation, and a course paper.

The paper: You are expected to make substantial progress on a research project in macroeconomics, and complete a progress report/paper. The research project might lead to a paper satisfying the field paper requirement. The progress report must describe original research, rather than merely surveying the literature. This can be a continuation of the project you began in the first half of the class, or something new. An interim progress report is due on **April 3**. The paper itself will be due during final exam week. Meeting the deadline is an important part of this exercise, so there will be no extensions.

Referee report and Presentation: Evaluating others' work is an important part of the profession and the research process, so for this class you are required to write a referee report evaluating a paper from the literature. This consists of a summary of the paper, a critical evaluation, and suggestions for changes or extensions. More detail on this will be provided later in the semester. The report will be due on **May 3**. In conjunction with the report, you should prepare a discussion presentation of approximately 20 minutes, as if you were asked to discuss the paper at a conference. Discussions will be scheduled for the last week of class.

Schedule and Reading List
The schedule is subject to change. More critical readings are marked with an asterisk (*).

1. Some Recent Issues in Monetary Policy

1. Liquidity Traps and the Zero Lower Bound

*Walsh, C. (2003) _Monetary Theory and Policy._ MIT Press, Cambridge. 2nd Edition Chapter 10.2

Benhabib, J., S. Schmitt-Grohe, and M. Uribe (2001) "The Perils of Taylor Rules," _Journal of Economic Theory_ 96: 40-69.

*Eggertsson, G., and M. Woodford (2003) "The Zero Bound on Interest Rates and Optimal Monetary Policy," *Brookings Papers on Economic Activity* 34: 139–235.

Christiano, L., M. Eichenbaum, and S. Rebelo (2011) "When Is the Government Spending Multiplier Large?" *Journal of Political Economy* 119: 78–121.

2. Larger Scale (Pre-Crisis) Estimated Models and Their Implications

Christiano, L., M. Eichenbaum, and C. Evans (2005) "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy* 113: 1–45.

*Smets, F. and R. Wouters (2003) "An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area," *Journal of the European Economic Association* 1: 1123-1175.

Smets, F. and R. Wouters (2007) "Shocks and Frictions in US Business Cycles: A Bayesian DSGE Approach." *American Economic Review* 97: 586–606.

*Levin, A., A. Onatski, J. Williams, and N. Williams (2006) "Monetary Policy Under Uncertainty in Micro-Founded Macroeconometric Models," in *NBER Macroeconomics Annual 2005,* M. Gertler and K. Rogoff, eds. MIT Press, Cambridge, pp. 229-287.

3. Financial Frictions

*Bernanke, B., M. Gertler, and S. Gilchrist (1999), "The Financial Accelerator in a Quantitative Business Cycle Framework," in *The Handbook of Macroeconomics*, Volume1C.

Kiyotaki, N. and J. Moore (1997), "Credit Cycles," *Journal of Political Economy*, 105: 211-248.

*Gertler, M. and N. Kiyotaki (2011) "Financial Intermediation and Credit Policy in Business Cycle Analysis", in *Handbook of Monetary Economics*, B. Friedman and M. Woodford eds.

Christiano, L., R. Motto, and M. Rostagno (2003) "The Great Depression and the Friedman-Schwartz Hypothesis." *Journal of Money, Credit and Banking,* 35: 1119–97.

Christiano, L., M. Eichenbaum, and M. Trabant (2015) "Understanding the Great Recession," *American Economic Journal: Macroeconomics*, 7: 110–167.

2. Adaptive Learning and Applications

1: The issue of expectations and adaptive learning. Convergence to rational expectations.

*Evans, G. and S. Honkapohja (2001) *Learning and Expectations in Macroeconomics.* Princeton University Press. Chapters 2-3.

Marcet, A. and T. J. Sargent (1989) "Convergence of Least-Squares Learning Mechanisms in Self-Referential Linear Stochastic Models," *Journal of Economic Theory,* 48: 337-368.

*Evans, G. and S. Honkapohja (2009) "Expectations, Learning and Monetary Policy: An Overview of Recent Research," in *Monetary Policy under Uncertainty and Learning*, ed. by Klaus Schmidt-Hebbel and Carl Walsh: 27-76.

2: Expectational stability in monetary policy

*Bullard, J. and K. Mitra (2002) "Learning About Monetary Policy Rules," *Journal of Monetary Economics*, 49: 1105-1129.

Evans, G. and S. Honkapohja (2003) "Expectations and the Stability Problem for Optimal Monetary Policies," *Review of Economic Studies*, 70: 807—824.

*Evans, G. and S. Honkapohja (2003) "Adaptive Learning and Monetary Policy Design," *Journal of Money, Credit and Banking*, 35, 1045—1072.

Preston, B. (2005) "Learning About Monetary Policy Rules when Long-Horizon Expectations Matter," *International Journal of Central Banking*, 1: 81-126.

3: Learning dynamics and economic fluctuations. Escape dynamics.

Timmermann, A. (1996) "Excess Volatility and Predictability of Stock Prices in Autoregressive Dividend Models with Learning," *Review of Economic Studies*, 63: 523-557.

*Milani, F. (2007) "Expectations, Learning and Macroeconomic Persistence," *Journal of Monetary Economics*, 54: 2065—2082.

Eusepi, S. and B. Preston (2001), "Expectations, Learning and Business Cycle Fluctuations," *American Economic Review,* 1011: 2844-2872.

*Williams, N. (2014) "Escape Dynamics in Learning Models," working paper, University of Wisconsin.

4: Learning by policymakers and inflation dynamics

Sargent, T. J. (1999) *The Conquest of American Inflation*. Princeton University Press, Princeton, NJ.

*Cho, I.-K., N. Williams, and T. J. Sargent (2002) "Escaping Nash Inflation," *Review of Economic Studies*, 69: 1-40.

McGough, B. (2006) "Shocking Escapes," *Economic Journal*, 116: 507 - 528.

*Sargent, T., N. Williams, and T. Zha (2006) "Shocks and Government Beliefs: The Rise and Fall of American Inflation," *American Economic Review*, 96: 1193-1224

Primiceri, G. (2006) "Why Inflation Rose and Fell: Policymakers' Beliefs and US Postwar Stabilization Policy," *Quarterly Journal of Economics*, 121: 867-901.

5: Hyperinflations and liquidity traps

Marcet, A. and J. P. Nicolini (2003), "Recurrent Hyperinflations and Learning," *American Economic Review*, 93, 1476-1498.

*Sargent, T., N. Williams, and T. Zha (2009) "The Conquest of South American Inflation," *Journal of Political Economy*, 117: 211-256.

Evans, G. and S. Honkapohja (2005) "Policy Interaction, Expectations and the Liquidity Trap," *Review of Economic Dynamics*, 8: 303-323.

Eusepi, S. (2007) "Learnability and Monetary policy: A Global Perspective," *Journal of Monetary Economics*, 54: 1115-1131

*Evans, G., E. Guse, and S. Honkapohja (2008) "Liquidity Traps, Learning and Stagnation," *European Economic Review*, 52: 1438-1463.

3. Dynamic Contracting and Economic Policy

1: Limited commitment problems.

*Ljungqvist, Lars and Thomas J. Sargent. (2004) *Recursive Macroeconomic Theory.* MIT Press, Cambridge. 2nd Edition, Chapter 20.

Kocherlakota, Narayana (1996) "Implications of Efficient Risk Sharing without Commitment," *Review of Economic Studies,* 63: 595-609.

*Kehoe, Timothy J. and David K. Levine (2001) "Liquidity Constrained Markets versus Debt Constrained Markets," *Econometrica,* 69: 575-598.

Alvarez, Fernando and Urban Jermann (2000) "Efficiency, Equilibrium, and Asset Pricing with the Risk of Default," *Econometrica,* 68: 775-798.

2: Repeated moral hazard and hidden information problems.

*Ljungqvist, Lars and Thomas J. Sargent. (2004) *Recursive Macroeconomic Theory.* MIT Press, Cambridge. 2nd Edition, Chapter 19.

Bolton and Dewatripont (2005) *Contract Theory*, MIT Press. Chapters 9, 10.1-10.2

*Thomas, J. and T. Worrall (1990) "Income Fluctuations and Asymmetric Information: An Example of a Repeated Principal-Agent Problem," *Journal of Economic Theory*, 51: 367-390.

Atkeson, Andrew (1991) "International Lending with Moral Hazard and Risk of Repudiation," *Econometrica,* 59: 1069-1089.

Atkeson, Andrew and Robert E. Lucas (1992) "On Efficient Distribution with Private Information," *Review of Economic Studies*, 59: 427-453.

Cole, Harold L. and Narayana Kocherlakota (2001) "Efficient Allocations with Hidden Income and Hidden Storage," *Review of Economic Studies*, 68: 523-542.

2: <u>Basic continuous time agency models</u>

Holmstrom, B. and P. Milgrom (1987) "Aggregation and Linearity in the Provision of Intertemporal Incentives", *Econometrica*, 55: 303-328.

Schattler, H. and J. Sung (1993) "The First-Order Approach to the Continuous-Time Principal-Agent Problem with Exponential Utility", *Journal of Economic Theory*, 61: 331-371.

*Sannikov, Y. (2008) "A Continuous-Time Version of the Principal-Agent Problem," *Review of Economic Studies,* 75: 957-984.

*Williams, N. (2015) "A Solvable Dynamic Principal Agent Model," *Journal of Economic Theory,* 159: 989-1015.

3: <u>Optimal unemployment insurance</u>

*Ljungqvist, Lars and Thomas J. Sargent. (2004) *Recursive Macroeconomic Theory.* MIT Press, Cambridge. 2nd Edition, Chapter 21.

*Hopenhayn, Hugo A. and Juan Pablo Nicolini (1997) "Optimal Unemployment Insurance," *Journal of Political Economy*, 105: 412-438.

Werning, Ivan (2002) "Optimal Unemployment Insurance with Unobservable Saving", working paper, MIT.

Kocherlakota, Narayana (2004) "Figuring Out the Impact of Hidden Savings on Optimal Unemployment Insurance," *Review of Economic Dynamics*, 7: 541-554.

Golosov, M. and A. Tsyvinski (2006) "Designing Optimal Disability Insurance: A Case for Asset Testing," *Journal of Political Economy,* 114: 257-279.

*Li, R. and N. Williams (2014) "Optimal Unemployment Insurance and Cyclical Fluctuations," working paper, UW-Madison.

4: <u>Private information and persistence</u>

DeMarzo, P. M. and Y. Sannikov (2006) "Optimal Security Design and Dynamic Capital Structure in a Continuous-Time Agency Model," *Journal of Finance* 61: 2681-2724.

*Williams, N. (2011) "Persistent Private Information," *Econometrica*, 79: 1233-1274.

Zhang, Y. (2009) "Dynamic Contracting with Persistent Shocks". *Journal of Economic Theory,* 144: 635-675.

5: <u>Hidden risk taking</u>

*Li, R. and N. Williams (2016) "Optimal Contracts with Hidden Risk," working paper, UW-Madison.

Biais, B., T. Mariotti, Jean-Charles Rochet, and Stephane Villeneuve (2010) "Large Risks, Limited Liability, and Dynamic Moral Hazard," *Econometrica*, 78:73-118.

DeMarzo, P., D. Livdan, and A. Tchistyi (2014) "Risking Other People's Money: Gambling, Limited Liability, and Optimal Incentives," Working Paper, Stanford University.