

ECON 925: Dynamic Macroeconomics

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Office hours: Tuesdays and Wednesdays 4:30PM-6PM.

Meeting times: Wednesdays - 1-4PM - Room: Science Center 7th floor conference room.

Course Objective:

This second year PhD-level course introduces students to the tools, methods and models used by the literature on modern dynamic macroeconomics. Unit I (comprised of 4 sections) focuses on closed economy topics, whereas unit II (comprised of 2 sections) studies open economy dynamic macroeconomics.

Required Materials:

A combination of textbooks, published papers and working papers will be used. Please see below for specific references in each section. More references will be added as the topics are presented in class. Items marked with a star are *required* reading.

Requirements and Grading:

- 1) There will be **one midterm exam** (scheduled at a time outside of our regular class time – 3 hours).
- 2) There will be several **homework assignments**. These assignments will have a strong “research” component, in the sense that they will deal with substantial extensions of the models presented in class. No late homework will be accepted.
- 3) You will be required to **write a final term-paper and present it** in class during final exams week. The in-class presentations will be 1 hour each. The model in this paper should be calibrated and the equilibrium dynamics studied using a numerical solution technique. A preliminary topic proposal for this paper is due on January 25th. This should take the form of an extended abstract (1 page).

Your course grade will be determined as follows:

- a. Homework 20% (graded on a check-, check, check+ scale).
- b. Midterm exam 40%
- c. Term paper 40%

MIDTERM EXAM: It will be scheduled for around February 20th. However, this date is tentative and may be subject to change.

UNIT I: CLOSED ECONOMY DYNAMIC MACROECONOMICS

I.1 Goods dynamic pricing and its macroeconomic effects (WEEKS 1 and 2)

- The behavior of monopolistically competitive firms.
- A complete DGE model of monopolistic competition.
- Solution of the model using a log-linearization numerical technique.
- Empirical evidence on the size and cyclical nature of markups.
- Models of exogenously time-varying markups.
- Models of endogenous markups: the customer market model, the implicit collusion model, a model with demand-composition effects.
- Responses to government purchases and technology shocks.
- “Deep Habits” in consumption and time-varying / countercyclical markups. RBC implications for the transmission of TFP shocks.

References:

* DGE Models with Imperfectly Competitive Product Markets, chapter 9 in “Frontiers of Business Cycle Research” by J. Rotemberg and M. Woodford.

* “Deep Habits”, *Review of Economic Studies*, Vol. 73, 2006, pp. 195-218, and NBER working paper #10261.

Bils, M. (1987), “The Cyclical Behavior of Marginal Cost and Price”, *American Economic Review*, Vol. 77, December, pp. 838-857.

Bils, M. (1989), “Pricing in a Customer Market”, *Quarterly Journal of Economics*, Vol. 104, November, pp. 699-718.

Gali, J. (1994), “Monopolistic Competition, Business Cycles and the Composition of Aggregate Demand”, *Journal of Economic Theory*, Elsevier, vol. 63(1), June, pp. 73-96.

Rotemberg, J. and M. Woodford (1991), “Markups and the Business Cycle”, *NBER Macroeconomics Annual*, Vol. 6, pp. 63-128.

Rotemberg, J. and M. Woodford (1992), “Oligopolistic Pricing and the Effects of Aggregate Demand on Economic Activity”, *Journal of Political Economy*, Vol. 100, pp. 1153-1207.

Rotemberg, J. and G. Saloner (1986), “A Super-Game Theoretic Model of Price Wars During Booms”, *American Economic Review*, Vol. 76, June, pp. 390-407.

Phelps, E. and S. Winter (1970), “Optimal Price Policy under Atomistic Competition” in Phelps et al., *Microeconomic Foundations of Employment and Inflation Theory*, New York, Norton.

Klemperer, P. (1995), “Competition when Consumers Have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade”, *Review of Economic Studies*, Vol. 62, pp. 515-539.

King, R., C. Plosser and S. Rebelo (2002), “Production, Growth and Business Cycles: Technical Appendix”, *Computational Economics*, Vol. 20 (1-2), October, pp. 87-116.

Burnside, C. (1997), “Real Business Cycle Models: Linear Approximation and GMM Estimation”, manuscript, The World Bank.

I.2 Financial Frictions (WEEKS 3 and 4)

- 1) The Bernanke, Gertler and Gilchrist “financial accelerator” model.
- 2) Credit cycles (interactions between credit limits and asset prices).
- 3) Sudden stops and financial crises.
- 4) Bank capital requirements (in a GE model) as a financial accelerator.

References:

* Bernanke, B., and M. Gertler. (1989) “Agency Costs, Net Worth, and Business Fluctuations”, *American Economic Review*, Vol. 79, pp. 14–31.

* Bernanke, B., M. Gertler and S. Gilchrist (1998), The Financial Accelerator in a Quantitative Business Cycle Framework, NBER working paper #6455.

* Carlstrom, C. and T. Fuerst (1997), “Agency Costs, Net Worth and Business Fluctuations: A Computable General Equilibrium Analysis”, *American Economic Review*, Vol. 87(5), pp. 893-910.

* Kiyotaki, N. and J. Moore (1997), “Credit Cycles”, *Journal of Political Economy*, Vol. 105(2), pp. 211-248.

* Mendoza, E. (2006), “Lessons from the Debt-Deflation Theory of Sudden Stops”, NBER Working Paper 11966, January (published in *American Economic Review Papers & Proceedings*).

*Mendoza, E. and K. Smith (2006), “Quantitative Implications of a Debt-Deflation Theory of Sudden Stops and Asset Prices”, *Journal of International Economics*, September.

Mendoza, E. and K. Smith (2006), “Margin Calls, Trading Costs and Asset Prices in Emerging Markets: The Financial Mechanics of the ‘Sudden Stop’ Phenomenon”, extended working paper version of the JIE paper.

* Mendoza, E. (2010), “Sudden Stops, Financial Crises and Leverage”, *American Economic Review*.

Mendoza, E. and J. Bianchi, “Overborrowing, Financial Crises and Macro-Prudential Taxes”, working paper June 2010.

Mendoza, E. and E. Boz, “Financial Innovation, the Discovery of Risk and the U.S. Credit Crisis”, working paper May 2010.

Mendoza, E. and M. Terrones, “An Anatomy of Credit Booms: evidence from Macro Aggregates and Micro Data”, working paper May 2008.

The last three are available at <http://econweb.umd.edu/~mendoza/working%20papers.html>

*Aliaga-Diaz, R. and M.P. Olivero (2011), “Do Bank Capital Requirements Amplify Business Cycles?”, *Macroeconomic Dynamics* (forthcoming).

I.3 Macroeconomic Policy Design: Fiscal Policy (WEEK 5)

- 1) The observed effects of fiscal shocks
- 2) The Ramsey approach to optimal taxation

References:

Perotti, Roberto. “In Search of the Transmission Mechanism of Fiscal Policy.” *NBER Macroeconomics Annual* 2007, 169-226.

Romer, Christina D., and David H. Romer (2010), “The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks”, *American Economic Review*, Vol. 100, June, pp. 763-801.

* Baxter, Marianne, and Robert G. King. “Fiscal Policy in General Equilibrium”, *American Economic Review*, Vol. 83 (1993): 315-334.

* Chari, V. V., Christiano, Lawrence; and Kehoe, Patrick J. “Policy Analysis in Business Cycle Models.” In *Frontiers of Business Cycle Research*, edited by Thomas F. Cooley. Princeton, New Jersey: Princeton, University Press, 1995, 357-91.

* Chari, V. V., L. Christiano and P. Kehoe (1991), “Optimal Fiscal and Monetary Policy: some recent results”, *Journal of Money Credit and Banking*, Vol. 23, pp. 519-539.

Chapter 15 of Ljungqvist and Sargent’s *Recursive Macroeconomic Theory*

I.4 Macroeconomic Policy Design: Monetary Policy (WEEKS 6 and 7)

1) Optimal monetary policy

2) Liquidity traps

References:

* Uribe, M. and S. Schmitt-Grohe (2004), “Optimal Simple and Implementable Monetary and Fiscal Rules”, NBER working paper # 10253, January. Published in the *Journal of Monetary Economics* (2007).

* Woodford, Michael (2003), *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press. Chapters 3 (Optimizing Models with Nominal Rigidities) and 6 (Inflation Stabilization and Welfare).

* Chari, V. V., L. Christiano and P. Kehoe (1991), “Optimal Fiscal and Monetary Policy: some recent results”, *Journal of Money Credit and Banking*, Vol. 23, pp. 519-539.

* Schmitt-Grohe, S., and M. Uribe, “The Optimal Rate of Inflation”, in the *Handbook of Monetary Economics* edited by Benjamin M. Friedman and Michael Woodford, Elsevier Science, Vol. 3B, 2010.

Woodford, M. (1994), “Monetary policy and price level determinacy in a cash-in-advance economy,” *Economic Theory*, Vol. 4, pp. 345-380.

Benhabib, J., S. Schmitt-Grohe and M. Uribe (2002), “Avoiding Liquidity Traps”, *Journal of Political Economy*, Vol. 110, June, pp. 535-563.

Schmitt-Grohe, S. and M. Uribe. “Liquidity Traps: An Interest-Rate-Based Exit Strategy”, manuscript, Columbia University, September 2010.

UNIT II: OPEN ECONOMY DYNAMIC MACROECONOMICS

II.1 Real Models of International Financial Markets (WEEKS 8 and 9)

- 1) The SOE case.
- 2) A global model.
- 3) International portfolio diversification.
- 4) Asset pricing.
- 5) The role of non-traded goods.

References:

* M. Obstfeld and K. Rogoff, Foundations of International Macroeconomics, Chapters 5 and 6, and references therein.

Arrow, K. (1967), “The Role of Securities in the Optimal Allocation of Risk Bearing”, *Review of Economic Studies*, Vol. 31, April, pp. 91-96.

Backus, D., Kehoe, P., Kydland, F. (1992), “International Real Business Cycles”, *Journal of Political Economy*, Vol. 100 (4), pp. 745–775.

Lucas, R. (1982), “Interest Rates and Currency Prices in a Two-Country World”, *Journal of Monetary Economics*, Vol. 10, November, pp. 335-360.

Atkeson, A. and R. Lucas (1992), “On Efficient Distribution with Private Information”, *Review of Economic Studies*, Vol. 59, July, pp. 427-435.

Lucas, R. (1992), “On Efficiency and Distribution”, *Economic Journal*, Vol. 102, March, pp. 233-247.

II.2 Monetary Models of Exchange Rates and the Current Account (WEEKS 9 and 10)

- 1) A Two-Country GE Model of International Monetary Policy Transmission

References:

* M. Obstfeld and K. Rogoff, Foundations of International Macroeconomics, Chapter 10 and references therein.

* M. Obstfeld and K. Rogoff, (1995), “Exchange Rate Dynamics Redux”, *Journal of Political Economy*, Vol. 103, June, pp. 624-660.

Svensson, L. and S. van Wijnbergen (1989), “Excess Capacity, Monopolistic Competition and International Transmission of Monetary Disturbances”, *Economic Journal*, Vol. 99, September, pp. 785-805.

Mankiw, G. (1985), “Small Menu Costs and Large Business Cycles: A Macroeconomic Model of Monopoly”, *Quarterly Journal of Economics*, Vol. 100, May, pp. 529-39.

Calvo, G. (1983), “Staggered Prices in a Utility Maximizing Framework”, *Journal of Monetary Economics*, Vol. 12, pp. 983-998.

FINAL EXAMS WEEK: Student Papers’ Presentations