

Econ. 8105 and 8106
Prof. Jones
Fall 2003

Macroeconomic Theory Parts I and II

The purpose of this course is to build a foundation for your knowledge in the area of Macroeconomics. We will concentrate on using simple economic models to generate time series that can be compared with those that we observe. We will focus on several questions:

1. What properties do these models have?
2. What types of time series do they generate?
3. What are the effects of various types of policy in those models?
4. What do these models say about what policy 'should' be?

Course Requirements

There will be approximately 4 graded homework assignments in each mini, along with a midterm exam and a final exam. The problem sets will count 40% of your grade, the midterm will count 25% and the final will be the remaining 35%.

Office Hours

My office hours are Wednesdays from 3:30 to 5 pm. My office is 1108 Heller Hall, 624-4553, lej@econ.umn.edu. Or if you can't come at that time, email me and we can set up and appointment.

Teaching Assistant

The TA for the course is Ananth Ramanarayanan. His email address is ananth@socsci.umn.edu. He will hold a discussion session each week.

Syllabus

Background Source Materials

Stokey, N. and R. E. Lucas, with E. Prescott, *Recursive Methods in Economic Dynamics*, Harvard University Press, 1989.

Ljungqvist, L. and T. Sargent, *Recursive Macroeconomic Theory*, The MIT Press, 2000.

These two books are useful general references for many of the topics that will be discussed in class this semester as well as those that will be discussed in the second semester.

Other Source Material for the Class:

Nowadays, as you probably know, many people post their class notes on the web. There are several places out there where you can find differing versions. Several years ago, Stan Cho typed up a version of my class notes for the second mini in this sequence and these are posted on my website. The address of mine, and others who have a similar teaching style/philosophy are:

- 1) Larry's Class notes: <http://www.econ.umn.edu/~lej/lejteaching.html>
- 2) Rody Manuelli, University of Wisconsin, (U Mn Phd),
<http://www.ssc.wisc.edu/~manuelli/>
- 3) Dirk Krueger, Stanford University, (U Mn Phd),
<http://www.stanford.edu/~dkrueger/>
- 4) Tom Sargent, Stanford University and NYU, <http://www.stanford.edu/~sargent/>
this contains a link to his book with Ljungqvist.
- 5) I'm sure you can find more....

Course Outline:

What follows is a rough outline of what we will try to cover during the semester. We may end up changing the order/topics and even dropping some sections if that fits our needs better.

- I. Dynamic General Equilibrium Theory as A-D Equilibrium
 - A. A-D Equilibrium, Pareto Optimality, Welfare Theorems
 - B. Alternative Implementations of A-D Equilibrium
 - C. Securities and Borrowing and Lending
 - D. Recursive CE

- II. Aggregation in A-D Models
 - A. Representative Firms
 - B. Multiple Sectors
 - C. Representative Households
 - D. Homothetic Preferences

- III. Solving the Growth Model
 - A. Dynamic Programming and the Growth Model
 - B. Computational Implementations

- IV. Policy in the Growth Model
 - A. Taxes and Spending, TDCE's
 - B. Optimal Policy and Ramsey Problems

- V. Adding Growth
 - A. Exogenous Growth Under Certainty
 - B. Endogenous Growth Under Certainty

- VI. Adding 'Wiggles,' Stochastic Models General
 - A. A-D with Uncertainty, Contingent Claims
 - B. Arrow Securities and Asset Trading
 - C. Asset Prices in the A-D Model

- VII. Stochastic Growth Models
 - A. Endogenous Growth Models and the Effects of Uncertainty on Saving

- B. Exogenous Growth Models and the RBC approach
- C. Stochastic Dynamic Programming

Related Background Readings:

A-D Equilibrium:

Debreu, G., (1959), *The Theory of Value*, Wiley: New York.

Bewley, T., (1972), "Existence of Equilibria in Economies with Infinitely Many Commodities," *Journal of Economic Theory*, 43, 514-540.

Early References on Growth Theory:

Solow, Robert, (1956), "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, 70, 65-94.

Koopmans, Tjalling, (1965), "On the Concept of Optimal Economic Growth," in *The Economic Approach to Development Planning*, North Holland, Amsterdam.

Cass, David, (1965), "Optimum Growth in an Aggregative Model of Capital Accumulation," *Review of Economic Studies*, 32, 233-240.

The Effects of Fiscal Policy and Optimal Policy:

Auerbach, A. J. and L. J. Kotlikoff, *Dynamic Fiscal Policy*, Cambridge University Press, Cambridge, 1987.

Ramsey, F. P., "A Contribution to the Theory of Taxation," *Economic Journal*, Vol. 37, (1927), 47-61.

Chamley, C., "Efficient Taxation in a Stylized Model of Intertemporal General Equilibrium," *Int. Econ. Rev.*, Vol. 26, No. 2, (1985), 451-468.

Chamley, C., "Optimal Taxation of Capital Income in General Equilibrium with Infinite Lives," *Econometrica*, 54, No. 3, (1986), 607-622.

Judd, K. L., (1985), "Redistributive Taxation in a Simple Perfect Foresight Model," *Journal of Public Economics*, 28, 59-83.

Barro, R. J., "Government Spending in a Simple Model of Endogenous Growth," *Journal of Political Economy*, Vol. 98, part 2, (1990), S103-S125.

Endogenous Growth:

Barro, R. and X. Sala-i-Martin, 1995, *Economic Growth*, McGraw-Hill, New York, Saint Louis.

Romer, Paul M., (1986), "Increasing Returns and Long Run Growth," *Journal of Political Economy*, 94, 1002-1037.

Romer, Paul M., (1987), "Growth Based on Increasing Returns Due to Specialization," *American Economic Review*, 77, 56-62.

Lucas, Robert E., Jr., (1988), "On the Mechanics of Economic Development," *Journal of Monetary Economics*, 22, 3-42.

Jones, Larry E. and Rodolfo E. Manuelli, (1992), "Finite Lifetimes and Growth," *Journal of Economic Theory*, Vol. 58, No. 2, 171-197.

Jones, Larry E. and Rodolfo E. Manuelli, (1990), "A Convex Model of Equilibrium Growth: Theory and Policy Implications," *Journal of Political Economy*, 98, 1008-1038.

Rebelo, Sergio, (1991), "Long Run Policy Analysis and Long Run Growth," *Journal of Political Economy*, 99, 500-521.

Jones, L. E., R. E. Manuelli and P. E. Rossi, "Optimal Taxation in Models of Endogenous Growth," *Journal of Political Economy*, Vol. 101, No. 3, (1993), 485-517.

Jones, L. E., R. E. Manuelli and P. E. Rossi, "On the Optimal Taxation of Capital Income," *Journal of Economic Theory*, Vol. 73, No.1, 1997, 93-117.

Stochastic Models:

Brock, W., and L. Mirman, (1972), "Optimal Economic Growth and Uncertainty: The Discounted Case," *Journal of Economic Theory*, 4, 497-513.

Kydland, F., and E. Prescott, (1982), "Time to Build and Aggregate Fluctuations," *Econometrica*, 50, 1345-1370.

Cooley, T. F., Ed., (1995), *Frontiers of Business Cycle Research*, Princeton: Princeton University Press.

Cooley, T.F and, E. C. Prescott, 1995, "Economic Growth and Business Cycles," in Cooley, T.F. (ed), *Frontiers in Business Cycle Research*, Princeton University Press, Princeton, New Jersey, pp: 1-38.

Eaton, J., 1981, "Fiscal Policy, Inflation and the Accumulation of Risky Capital," *Review of Economic Studies*, XLVIII, 435-445.