Macroeconomics
411-1
Fall, 2002
Christiano

Syllabus

1. General Information.

- Lectures are M-W 9-10:50am, 104 Swift Hall (SWT). Recitation: Friday 9-11am, SWT 104. EXCEPTION: The November 20 lecture is cancelled and will meet on November 15, during recitation section, instead. The November 20 recitation will be held during the normal class time on November 20.
- My office number is 3246, Andersen Hall; Phone: 491-8231. Email: l-christiano@northwestern.edu. Office hours: TBA.
- TA: Guido Menzio, office hours, Mondays, 5pm; telephone number, 491-8203; office, 325 Andersen.
- The grades will be determined as follows: homeworks, 10%; midterm, 40%; final, 50%. There will be approximately seven homework assignments. You are requested to work in teams of up to five students on these problem sets, and only one should be submitted per group. With one exception, homeworks should be turned in to the Economics Department office by Wednesday, 5pm, in the week after they are assigned. The exception is the homework due on November 6, which you may turn in on Friday November 8.
- The midterm is on Wednesday, November 6. The final is on Tuesday, December 10, 9-11am, in the regular lecture room.

2. Goals.

Macroeconomics is about two things: (i) developing positive models that can help us understand the dynamics of key macroeconomic variables: employment, unemployment, interest rates, output, etc.; and (ii) using these models to make judgements about what policies the government should, or should not, pursue. Classic questions include
the proper setting of taxes and money over the business cycle. The purpose of the course is to study the tools needed to do research on (i) and (ii), and to review (a subset of) the relevant substantive findings reported in the literature.

To address (i), we will begin by developing the basic building block of modern macroeconomics: the infinite lived, deterministic, homogeneous agent growth model. One set of variations of this model will allow us to review a subset of the modern theory of growth. Another will allow us to review basic results in monetary economics. A third set of variations will allow us to review the theory of business cycles.

To address (ii), we will study the optimal determination of tax rates. We will first study this problem assuming the government can determine at some initial date what the optimal setting of these variables is for all time, and all possible circumstances, and that it can then commit itself credibly to actually implementing these policies. We will go on to study the more realistic (though more complicated, too) case where the government lacks the ability to commit.

- The textbook for the course is S-L:


  Another excellent text is Ljungqvist and Sargent’s, *Recursive Macroeconomic Theory*, MIT Press, 2000 (for related materials, see http://www.stanford.edu/~sargent/).

- Additional reading materials will be made available on the course website.
COURSE OUTLINE

There will be 19 lectures (one of the 20 slots is taken by the midterm). The topics are summarized below, with the rough number of lectures expected to be devoted to each given in parentheses. The primary and related readings for each lecture are listed.

1. Infinite Horizon Model With No Uncertainty and Fixed Labor.
   (a) (four lectures) Efficient Allocations.
      i. Sequence Approach (S-L: pp. 8-13, sec. 4.5).
      ii. Function Space and Dynamic Programming (S-L; pp. 13-16, sec. 4.2, sec. 6.1).
   (b) (one lecture) Equilibrium Concepts (S-L: sec. 2.3; Cooley-Prescott, 1995, pp. 8-10).
      i. Sequence concepts:
         A. Date 0 Arrow-Debreu.
         B. Sequence-of-Markets.
      ii. Recursive Competitive Equilibrium.
   (c) (five lectures) Application: Growth Theory (Jones and Manuelli, 1997).
      i. Exogenous growth models.
         A. Growth generated by ‘disembodied’ technical change (S-L, sec. 5.4; related paper: Christiano (1989)).
      ii. Endogenous growth models.
         A. “Ak” models (Christiano and Harrison (1999, Appendix); see also: Rebelo (1991)).
         B. Learning-by-doing and learning-or-doing (S-L; sec. 5.7).
C. Increasing variety and specialization (Romer, 1987; Matsuyama, 1999; class notes on Matsuyama).

D. Overlapping-generations (Jones and Manuelli, 1997).

2. (four lectures) Adding Variable Labor and Money. (See: Albanesi, Chari, and Christiano, (2002a); Christiano and Rostagno, (2002); see also Cole and Kocherlakota, 1998).

(a) Necessary and Sufficient Conditions for Private Sector Equilibrium In Cash in Advance Economies.

(b) Multiplicity of Private Sector Equilibria.

(c) The Optimal Private Sector Equilibrium, and the Type of Monetary Policies that Can Support it.


(a) Business Cycle Implications (Cooley and Prescott (1995); see also: Prescott (1986), Summers (1986), Boldrin, Christiano and Fisher (2001)).

(b) RBC model with multiple equilibria and sunspot equilibria (see: Christiano and Harrison (1999), Shleifer (1983), class notes on Shleifer; related readings: Bryant (1981,1983), Cass and Shell (1983); Cooper and John (1988); Diamond and Dybvig (1983); Diamond (1982); Farmer (1993); Farmer and Guo (1994,1995); Farmer and Woodford (1984); Gali (1994a,b); Krugman (1991); Woodford (1986,1991)).

4. (three lectures) Optimal Policy

(a) The case of full commitment, (Chari (1988); see also Chari, Christiano and Kehoe (1994); Lucas and Stokey (1983)).

(b) The case of no commitment (the ‘time inconsistency problem’) (Chari (1988) and Christiano and Fitzgerald (2002); see also: Chari, Christiano and Eichenbaum (1996); Albanesi, Chari, and Christiano, (2002a,b), Chari and Kehoe (1980); Kydland and Prescott (1977); Stokey (1991)).
References


