Econ 211: Advanced Macroeconomics

University of California, San Diego - Fall 2012 Davide Debortoli (Part I) and Giacomo Rondina (Part II)

Thursday, 2:00pm-5:00pm, Econ 304

Course description

The object of this course is to introduce students to a variety of tools used in advanced dynamic macroeconomic models. The goal is to provide examples of how some specific problems are addressed and how the tools can be used in a variety of contexts.

In the first part (taught by Davide Debortoli), we introduce techniques – both from a theoretical and a computational viewpoint – to analyze policy problems in dynamic models, and discuss some applications to optimal fiscal and monetary policy problems. By way of contrast with the models studied in the first-year macro sequence we study the implications of "inefficiences" like market incompleteness, lack of commitment and default risk.

In the second part of the course (taught by Giacomo Rondina) three independent topics will be covered. First, we will study "global games", a framework that proves to be particularly effective in modeling coordination problems with incomplete information in macroeconomics (such as currency attacks, bank runs and financial crises more in general). Second, we will look into the fast developing literature on the "macroeconomics of asset shortage", the view that many of the financial tensions at the global level can be explained by an endogenously varying supply of assets in which to store wealth, which includes non-fundamental valuations (i.e. "bubbles"). Finally, if time allows we will study a class of rational expectations equilibria, termed "Information Equilibria", which can emerge from the solution of dynamic models under incomplete information and display very intriguing propagation properties.

Textbooks

We will make use of pieces of the following textbook:

(LS) Ljungqvist and Sargent, *Recursive Macroeconomic Theory*, 2nd edition, MIT press, 2004. References to papers are provided at the end of the syllabus. Additional references about specific topics will be provided during the lectures.

Requirements

Your performance will be evaluated according to the following scheme: 3 or 4 homeworks (30%), and a research proposal (70%) that can be written individually or by at most two co-authors.

The research proposal should contain a brief illustration (between 5 and 10 pages) of an original research idea where the techniques analyzed in class are applied. It should include a clear statement of the research question, a motivation, an essential literature review and an outline of the methodology to be used. The topic for the proposal should be chosen and communicated to one of the instructor by the end of the Thanksgiving week (Nov. 24th), and will be followed by a (mandatory) conversation with the instructor about the main references and the methodology to be used. The final version of the proposal must be delivered at the end of the final exams week (Dec. 14th).

> PART I: OPTIMAL POLICY IN DYNAMIC MODELS (Davide Debortoli)

1. Optimal policy in deterministic environments (1 week).

- Theory:
 - Fiscal policy in the Neoclassical Growth Model. Social planner vs. decentralized equilibria.
 Ricardian Equivalence vs. Distortionary Taxation. [Ljungqvist and Sargent (2004), Ch. 11].
 - Labor vs. Capital Income Taxation and extensions. [Ljungqvist and Sargent (2004), Ch. 15, Chamley (1986), Judd (1985)].
- Solution method: Solution of finite horizon deterministic models (root-finding).

2. Optimal policy in stochastic environments (3 weeks)

- Theory:
 - Optimal monetary policy in standard DSGE models.
 - Optimal debt policies under complete markets [Lucas and Stokey (1983)], and under incomplete markets [Aiyagari, Marcet, Sargent, and Seppala (2002)].
 - Optimal time-consistent policies [Klein, Krusell, and Rios-Rull (2008)].
- Solution methods:
 - Perturbation Methods [Schmitt-Grohe and Uribe (2004)] and the Linear-Quadratic Approach [Benigno and Woodford (2012)];
 - Projection Methods [Judd (1992)] and Parametrized Expectations [Den Haan and Marcet (1990)];
 - Finding Markov-Perfect Equilibria through collocation methods [Judd (2004)].

3. Optimal policy and default risk (1 week)

- Theory:
 - Models with endogenous sovereign defaults [Arellano (2008)]
 - Risk-sharing models with participation constraints [Alvarez and Jermann (2001)]
- Solution method: Value Function Iteration with occasionally binding constraints

PART II: TOPICS IN MACROECONOMIC THEORY

(Giacomo Rondina)

Topic 1: Global Coordination Games in Macroeconomics

- 1. Motivation and Methods
 - (a) Rethinking Multiple Equilibria in Macroeconomics Morris and Shin (1998, 2000).
 - (b) Methods for Global Games in Macroeconomics Morris and Shin (2003).
- 2. Games of Regime Changes and Endogenous Information
 - (a) Information from Financial Prices and CrisesAngeletos and Werning (2006), Rondina and Shim (2012).
 - (b) Dynamic Global Games and Timing of Financial Crises Angeletos, Hellwig, and Pavan (2006, 2007).

Topic 2: The Macroeconomics of Asset Shortage

- 1. Motivation and Methods
 - (a) Evidence of Asset ShortageCaballero (2006, 2009); Gourinchas (2012)
 - (b) Models of Asset Shortage
 Caballero, Farhi, and Gourinchas (2008); Caballero and Krishnamurthy (2009); Caballero (2010)
- 2. Asset Shortage and Non-Fundamental Valuations
 - (a) Non-Fundamental Valuations and Financial Crises: An Introduction Barlevy (2007); Brunnermeier and Oehmke (2012)
 - (b) Growth, Financial Frictions and Bubbles Martin and Ventura (2011)

Topic 3: Information Equilibria

- 1. Solving Rational Expectations Models in the Frequency Domain Whiteman (1983); Futia (1981).
- 2. Information Equilibria: Characterization and Stability Rondina and Walker (2012a,b).

References

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