Macro I - Fall 2018

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Office Hour: 9-10 Monday in 576 ICC
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Classroom: WGR 411 at 9:30-12:00 on Thursday
Recitation: TBD
TA: Muran Chen

Course Description:

This course presents standard frameworks used in modern macroeconomics. Dynamic programming will be emphasized as a method for formulating and solving decision problems. Dynamic programming will also influence how we define notions of equilibrium and compute them.

Several homeworks will involve using standard programming languages (e.g. Matlab) to compute equilibria or solutions to dynamic programming problems.


Grading: Homeworks (20 %), Midterm (30 %) and Final (50 %)

Outline:

1. Methodology / Bedtime Reading
   Lucas (1981 a, 1981 b)
   Sargent and Ljungqvist CH 1 and Preface
2. Dynamic Programming
   Finite horizon and infinite horizon problems
   Bellman’s equation
   Value functions: existence, continuity, concavity and differentiability
   Key Examples: Income Fluctuation Problem, Optimal Growth Problem, Search Problem, Human Capital Problem
   Readings: Sargent and Ljungqvist (2004, CH 1-6 and Appendix A) is useful for getting started. Stokey and Lucas (1989, CH 2-4) is the standard reference for deterministic and stochastic dynamic programming methods in relation to economic dynamics.
3. Consumption in Exchange Economies

OVERVIEW: Sargent and Ljungqvist (2004, CH 8)

Planner’s Problem
Efficient Allocations vs Competitive Equilibrium Allocations
Time-1 Markets versus Sequential Markets Formulation

4. Asset Pricing

OVERVIEW: Ljungqvist and Sargent CH 13 and Cochrane (2001)

Lucas Asset Pricing Model: Lucas (1978)
Equity Premium: Mehra and Prescott (1985)
Stochastic Discount Factor Restrictions Implied by Data: Hansen and Jagannathan (1991)
How to Price a Non-traded asset.

5. Neoclassical Growth Model

OVERVIEW: Ljungqvist and Sargent CH 11- 12

Efficient Allocations versus Competitive Equilibrium Allocations
OG vs Infinitely-lived Agents
Recursive Equilibria (little k, big K)
Steady States and Balanced Growth
Steady States and Taxation
Government Debt
Equilibria with Animal Spirits?
Basic Model with Technology Shocks

6. Models with Idiosyncratic Risk and Incomplete Markets

OVERVIEW: Ljungqvist and Sargent CH 16-17

Steady States
Basic Model with Technology Shocks: Krusell and Smith (1998)
Welfare Effects of Eliminating Aggregate Shocks: Krusell, Mukoyama, Sahin and Smith (2009)
References:


Huggett (1997), The One-Sector growth Model with Ideiosyncratic Shocks: Steady States and Dynamics, JME.

Krusell and Smith (1998), JPE.

Krusell, Mukoyama, Sahin and Smith (2009), Revisiting the Welfare Effects of Eliminating Business Cycles, RED.


