Course: Macroeconomics I

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Office Hours: TBD

This is designed as a 12 week course. 10 ECTS.

Description:

This course is aimed at introducing basic concepts in Macroeconomics and workhorse models in dynamic Macroeconomics. Students will learn to use economic modeling to provide quantitative answers to questions in (Macro)economics. The course will be divided in two parts:
Part 1: We start with the neoclassical growth model without uncertainty, which introduces dynamic programming techniques. Then, we introduce risk and study its implications for asset pricing in a complete markets setting. We then turn to cyclical fluctuations and the cost of business cycles. We next introduce life-cycle models as a tool for applied policy analysis.
Part 2: The ultimate goal of this half of the course is to understand the relationship between business cycles, inflation, monetary and fiscal policy. We proceed to introduce the classical monetary model, and contrast it with the New Keynesian Model. Finally we will have a look at monetary policy in the context of an open economy.

Course Material:

- Lectures will be based on the instructor's lecture notes
- Complementary readings
- Textbook References:
    1. (LS) Lars Ljungqvist and Thomas J. Sargent,Recursive Macroeconomic Theory 3nd edition
    2. (SL) Nancy L. Stokey and Robert E. Lucas, with Edward C. Prescott,Recursive Methods in Economic Dynamics, Harvard University Press (1989)
    3. (JG) Jordi Galí (2008): Monetary Policy, Inflation and the Business Cycle. An Introduction to the New Keynesian Framework, Princeton University Press.

Grading:

30% Problem sets 6 Problem sets
20% Midterm Exam
50% Final Exam

TA sessions:

Coding, Practice Problems, Problem Set Solutions, Paper Discussions

Overview

Part I

1. **Introduction**
   1.1.   Kaldor Growth Facts.
   1.2.   Convergence.

2. **Solow Growth Model**
   2.1.   Steady State, comparative statics.
   2.2.   Adding exogenous technological change.
   2.3.   Balanced growth path and golden rule.
   2.4.   Decentralized market allocations.
   2.5.   Growth accounting.

   Readings:
   - R. M. Solow (1970) "Growth Theory: An Exposition" Chapter 2

3. **Neoclasical Growth Model (without uncertainty)**
   3.1.   Steady State, comparative statics.
   3.2.   Balanced growth path and golden rule.
   3.3.   Decentralized market allocations.
   3.4.   Recursive Competitive Equilibrium.
   3.5.   Dynamic Programming.

   Readings:
   - LS Chapter 3.
   - SL Chapter 3-4.

4. **Introducing Risk**
   4.1.   Arrow-Debrew (AD) Competitive Equilibrium.
   4.2.   AD with date-0 trade.
   4.3.   AD with sequential trade.
   4.4.   Lucas asset pricing model.

   Readings:
   - LS Chapter 7.

5. **(Stochastic) Real Business Cycle Model (RBC)**
   5.1.   Complete vs Incomplete Market structure.
   5.2.   Linearization.
   5.3.   Simulating the model.
   5.4.   Dynare.

   Readings:
   - King, and Rebelo, (1999), "Resuscitating real business cycles".
   - King, Plosser and Rebelo (1988), "Production, growth and business cycles: I. The basic neoclassical model".

6. **Overlapping Generations Model (OLG)**
   6.1.   Motives of Saving: Social Security.
   6.2.   Ricardian Equivalence.
   6.3.   OLG with Money.
   6.4.   Perpetual youth structure.

   Readings:
   - LS Chapter 9.
   - T. J. Kehoe (1989) "Intertemporal General Equilibrium Models".

Part II (Mostly from JG)

7. **Classical Monetary Model**
   7.1.   Neutrality of money.
   7.2.   Money in the utility function.
   7.3.   Optimal Monetary Policy with Money in the utility function.

   Readings:
   - JG Chapter 2.
   - Schmitt-Grohé, and Uribe, (2010), "The Optimal Rate of Inflation".

8. **The Basic New Keynesian Model**
   8.1.   Calvo and Rotemberg pricing.
   8.2.   New Keynesian Philips curve and the Dynamic IS equation.
   8.3.   The Taylor rule.
   8.4.   Optimal monetary policy under the New Keynesian setup .

   Readings:
   - JG Chapter 3
   - O. Blanchard and N. Kyiotaki (1987), "Monopolistic competition and the effects of aggregate demand".

9. **Monetary Policy and the Open Economy**
   9.1.   Role of exchange rates and terms of trade.
   9.2.   Optimal monetary policy in a small open economy.

   Readings:
   - JG Chapter 7.

Tentative Class Schedule

Day	Topic	Assignments
1	Solow Growth Model: Solution	
2	Solow Growth Model: Transition dynamics	
3	Solow Growth Model: Decentralization	
4	Neoclasical Growth Model: Solution	HW1 Due
5	Neoclasical Growth Model: Recursive Competitive Equilibrium	
6	Dynamic Programming	
7	Arrow-Debrew Equilibrium: date 0 trade	HW2 Due
8	Arrow-Debrew Equilibrium: sequencial trade	
9	Lucas Asset pricing model	
10	The RBC, complete vs incomplete markets	
11	The RBC, Linearization	
12	The RBC, Simulations, dynare	
13	OLG: motives for saving	HW3 Due
	MIDTERM	
14	OLG: with Money	
15	Perpetual youth structure	
16	Classical Monetary Model	HW4 Due
17	Money in the utility function	
18	The Friedman rule	HW5 Due
19	Monopolistic Competition and Aggregate Demand	
20	Basic New Keynessian Model: New Keynesian Phillips Curve	
21	Basic New Keynessian Model: Dynare	
22	Optimal monetary policy	
23	Monetary Policy in the context of an open economy.	HW6 Due
24	Optimal monetary policy	
	FINAL	