Macroeconomic Theory

Katsuya Takii

Purpose: This lecture is aimed at providing students with standard methods in modern macroeconomics. In particular, the lecture extends Solow model, which was taught in Macroeconomic Analysis, into three directions. Firstly, I apply the dynamic optimization techniques to endogenize saving rate in Solow model. Secondly, I introduce stochastic shocks to analyze uncertainty in a dynamic context. Finally, I discuss how one can numerically analyze the model. In addition, I also discuss how one can analyze discrete choices in a dynamic context. These methods are useful not only for understanding macroeconomics, but also for understanding dynamic issues in any fields of economics, such as public economics and financial economics.

Recommended Textbooks:

1. Sargent (1987), Dynamic Macroeconomic Theory, Harvard University Press
2. Stokey and Lucas (1989), Recursive Methods in Economic Dynamics, Harvard University Press
3. Blanchard and Fisher (1990), Lectures on Macroeconomics, MIT press
4. Adda and Cooper (2003), Dynamic Economics, MIT press
5. Ljungqvist and Sargent (2004), Recursive Macroeconomic Theory, MIT press
6. Acemoglu (2009), Introduction to Modern Economic Growth, Princeton University Press.
7. Stachurski (2009), Economic Dynamics, MIT press

Grading Policy: 35% on assignments and 65% on a final exam.

Office hour: Room 602, 12:15-13:00 on Monday. Appointment is required for other time.

E-mail Address: takii@osipp.osaka-u.ac.jp

Requirement: I assume that students have already taken the same level courses as Microeconomic Theory and Macroeconomics Analysis.

Remarks:

- Because of the nature of the issues, the lectures are rather technical. Students are expected to prepare by themselves to understand the lecture. I highly recommend this course to the students who think of economics as a major discipline and go to the doctoral program.
- I will teach this course in English unless all students prefer Japanese. I encourage students to make comments and questions in English. However, I will not prevent students from asking questions in Japanese. I can discuss your questions and comments in Japanese or English at my office hour.

Course Outline

1. *Basic Dynamic Programming (5 lectures)*
    - *Consumption, Optimal Growth Model and Recursive Competitive Equilibrium*
2. *Continuous Dynamic Programing and Hamiltonian (2 lectures)*
    - *Investment, Continuous Optimal Growth Model and Phase Diagram*
3. *Stochastic Dynamic Programming (3 lectures)*
    - *Asset Pricing, Stochastic Optimal Growth Model and Calibration*
4. *Overlapping Generation Model (1 lecture)*
5. *Dynamic Programing with Discrete Choice (3 lectures)*

- *Labor Search, Equilibrium Unemployment Model*

6. *Final Exam (1 lecture)*