Bavarian Graduate Program in Economics   Matthias Doepke
Frontiers in Macroeconomics   Northwestern University
September 2019

Syllabus

Organization and Overview

This course provides an introduction to modern macroeconomics, with a special emphasis on macroeconomic modeling of household behavior and household heterogeneity. The first day provides an overview of the course and gives an introduction to dynamic programming techniques. We continue by discussing the permanent income hypothesis as an introduction to macroeconomic models featuring incomplete markets and income risk. A number of applications of the incomplete-markets framework will be discussed. On Thursday and Friday, we will discuss models where market incompleteness arises from endogenous participation constraints. The final lectures on Friday will give an overview of recent applications of the type of models discussed in class at the current research frontier, with a special focus on models of monetary policy in heterogeneous-agent environments.

The daily schedule will be:

9:00–10:30	First Lecture
10:30–11:00	Coffee Break
11:00–12:30	Second Lecture
12:30–14:00	Lunch
14:00–16:00	Problem Sets
16:00-16:30	Coffee Break
16:30–18:00	Discussion of Problem Sets and Review
18:00–19:30	Free Time
19:30	Dinner

Please note that the course will start on Sunday, September 15, in the evening with a welcome meeting at 19:00 followed by dinner. On Friday, instead of problem sets there will be a final review session from 14:00 to 15:00.

Technology and Software

It is recommended that students bring a laptop to the course with software that can be used to carry out numerical computations, ideally MATLAB. Knowledge of computational methods will not be tested in the final exam, but computation is an essential part of modern macroeconomics, and there will be a discussion of computational methods with some examples.

Readings and Course Materials

The main text for the course is Ljungqvist and Sargent:

Lars Ljungqvist and Thomas J. Sargent (2018), *Recursive Macroeconomic Theory*, 4nd edition, MIT Press.

Registered students will be provided with lecture notes and additional readings for topics not covered in Ljungqvist and Sargent ahead of the course.

Prerequisites

The course material is self-contained but assumes familiarity with standard microeconomics and macroeconomics at the advanced undergraduate level. Being comfortable with multi-variable calculus and mathematical optimization is particularly important.

Dynamic programming will be introduced in the course, but given the fast pacing it is recommended that students who have not seen any dynamic programming before read about some of the basics ahead of time to get a basic understanding of the main concepts. This can be done by reviewing Chapters 1 and 3 of the textbook (LS).

It is also important to have a basic understanding of the fundamentals of general equilibrium (which is usually covered in advanced micro at the undergraduate level). The first sections of Chapter 8 in the textbook (up to 8.5.3) provide a useful review of this material.

Enrolled students will be provided additional lectures notes that review these basics ahead of the class.

Recommended Background Readings

The following list contains the seminal journal articles and current research papers on which much of the material in the course is based. These are not required readings, but recommended readings in particular for those who plan to work in macroeconomics in their own dissertation research.

- Aiyagari, Rao. 1994. "Uninsured Idiosyncratic Risk and Aggregate Saving," *Quarterly Journal of Economics* 109(3), 659–684.

- Aiyagari, Rao. 1995. "Optimal Capital Income Taxation with Incomplete Markets and Borrowing Constraints," *Journal of Political Economy* 103(6), 1158–1175.

- Alvarez, Fernando and Urban Jermann. 2000. "Efficiency, Equilibrium, and Asset Pricing with Risk of Default," *Econometrica* 68(4), 775–797.

- Auclert, Adrien. 2017. "Monetary Policy and the Redistribution Channel." Unpublished Manuscript, Stanford University.

- Doepke, Matthias, and Martin Schneider. 2005. "Aggregate Implications of Wealth Redistribution: The Case of Inflation." Journal of the European Economic Association 4(2-3): 493-502.

- Doepke, Matthias, and Martin Schneider. 2006. "Inflation and the Redistribution of Nominal Wealth." Journal of Political Economy 114(6): 1069-1097.

- Doepke, Matthias, Martin Schneider, and Veronika Selezneva. 2016. "Distributional Effects of Monetary Policy." Unpublished Manuscript, Northwestern University.

- Gornemann, Nils, Keith Kuester, and Makoto Nakajima. 2016. "Monetary Policy with Heterogeneous Agents." Unpublished Manuscript, University of Bonn.

- Kaplan, Greg, and Gianluca Violante. 2014. A Model of the Consumption Response to Fiscal Stimulus Payments. *Econometrica*, 82(4), 1199–1239.

- Kaplan, Greg, Benjamin Moll, and Gianluca Violante. 2017. "Monetary Policy According to HANK." Unpublished Manuscript, University of Chicago.

- Kocherlakota, Narayana. 1996. "Implications of Efficient Risk Sharing without Commitment," *Review of Economic Studies* 63(4): 595–609.

- Krueger, Dirk and Fabrizio Perri. 2005. "Does Income Inequality Lead to Consumption Inequality? Evidence and Theory," *Review of Economic Studies* 73(1), 163–193.

- Krusell, Per and Tony Smith. 1998. "Income and Wealth Heterogeneity in the Macroeconomy," *Journal of Political Economy* 106(5), 867–896.