Course Organization

The class meets on Tuesdays and Thursdays at 6:00pm in Jacobs 3245. The course grade will be based on problem sets, class participation, and a research project.

The research project should include a substantial computational component and be completed by June 8 (Wednesday of finals’ week). The project should formulate an applied research question related to one of the topics covered in the class, describe the economic environment/model used to address the question, formulate a strategy for quantifying and computing the model, and include computed results (which can be preliminary). The project should be written up using LaTeX.

To make this feasible in the allotted time, a recommended (but not required) strategy is to base the project closely on an existing paper with available code. The research question should then lead to an environment which is a variation or extension of the framework used in the existing paper.

Students should discuss the research question they would like to address with the instructors by early May. At this time, the instructors will point students to the relevant literature and possible papers to build on. A first writeup of the research question and a description of the economic environment and computational strategy is due by May 15th. The instructors will provide feedback on the project at this stage.

Contact Details

Instructors: Luigi Bocola and Matthias Doepke

The easiest way to get in contact with us is via e-mail:

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Our office hours are by appointment or walk-in if the door is open. A web site for this course will be maintained on Canvas.
Overview

This class covers topics in advanced macroeconomics. The first part of the course (taught by Luigi Bocola) considers topics at the intersection of macroeconomics and finance, such as models of financial intermediation, sovereign debt and default, and currency crises. The second part of the course (taught by Matthias Doepke) focuses on models of household heterogeneity and household decision making, including life-cycle models and models of household bargaining. Numerical methods for analyzing such models will be emphasized, including homework projects that replicate results from well-known recent research papers.

Part 1: This part of the course covers two topics in macroeconomics: models of sovereign debt and defaults and models of financial intermediation. We will spend roughly four classes on each topics. The format of these two “mini” courses will be homogeneous: the first class will introduce the canonical model and discuss some of its properties; the second class will present quantitative implementations, including algorithms employed for computing those models and approaches to bring them to the data; the third and fourth class will discuss applications that have been recently pursued in the literature.

There are no required textbooks for this part of the course, most of the readings are based on journal articles or working papers. For the computational part, it is good if you could have access to “Dynamic General Equilibrium Modeling” by Herr and Maussner and “Numerical Methods in Economics” by Judd.

Part 2: The second part of the course covers recent development of modeling the household sector in macroeconomic models. We will consider life-cycle models with rich heterogeneity and multiple sources of risk, models incorporating financial constraints to match heterogeneity in the consumption response to wealth shocks, models incorporating fixed costs of adjustments to account for financially constrained households with high wealth, and models that incorporate dynamic bargaining within the household and model marriage and divorce. Problem sets will focus on computational methods used to solve models with these features.

Readings will be based on journal articles and working papers, and a reading list for this part of the course will be made available shortly.
Preliminary List of Course Topics (Part 1)

The plan is to cover the following topics in order. There might be some adjustments as we proceed, and I will keep you informed. The articles with a “*” are those that I plan to discuss in class. It would be good if you could have a look at those before we meet.

Sovereign Debt and Default

- **Class 1**: Borrowing and Lending with Incomplete Markets and Limited Commitment


- **Class 2**: Bringing the model to the data: numerical solution and calibration


- **Class 3**: Multiple Equilibria


- **Class 4**: The Costs of Sovereign Defaults


**Financial Intermediation in Macro**

- **Class 1**: Financial Intermediation in Macroeconomic Models


- **Class 2**: Bringing the model to data: numerical solution and calibration/estimation


- **Class 3**: Intermediary Asset Pricing


- **Class 4**: Monetary Policy and Risk Premia


  Bianchi, J., and Bigio, S. (2014), Liquidity management and monetary policy, working paper, Federal Reserve Bank of Minneapolis

  Piazzesi, M., and Schneider, M. (2016), Payments, Credit and Asset Prices, working paper, Stanford University
Reading List for Second Part of Course

Overview

The second part of the course covers recent developments in modeling the household sector in macroeconomic models. We will consider life-cycle models with rich heterogeneity and multiple sources of risk, models incorporating financial constraints to match heterogeneity in the consumption response to wealth shocks, models incorporating fixed costs of adjustments to account for financially constrained households with high wealth, and models that incorporate dynamic bargaining within the household and model marriage and divorce. Problem sets will focus on computational methods used to solve models with these features, including projects that replicate results from well-known recent research papers.

Course Topics (Part 2)

Dynamic Bargaining in the Household


**Household Models with Equilibrium Default**


**Financial Constraints, Heterogeneity in Propensities to Consume, and the Redistributive Effects of Monetary Policy**


**Dynamic Models of Fertility and Household Labor Supply**


**Not Covered this Year**

**Life Cycle Models in Macroeconomics**


