This course covers a number of research topics at the frontier of quantitative macroeconomics with heterogeneous agents and incomplete markets. Throughout the course, I will also teach some algorithms useful to compute equilibria in this class of models, but this is not a course in numerical methods. A one-line summary of the course is “macro models meet micro data”.

- **Requirements**: Knowledge of basic macroeconomic models with incomplete markets learned in ECO504. Some ability to code (in Matlab, Python, Julia, R, Fortran, or C++) is necessary to perform some of the class assignments. For an overview, see Coleman-Lyon-Maliar-Maliar: Matlab, Python, Julia: What to Choose in Economics? *CEPR-DP13210*

- **Lectures**: Monday and Wednesday 2:40-4:10 PM in Room JRRB 298

- **Class Material**: Slides for all lectures, various announcements, updated syllabus, and additional teaching material will be posted on the Canvas page of the course.

- **Office Hours**: Contact me by email: <violante@princeton.edu>

- **Evaluation**. The evaluation is based on three assignments.

  1. **Presentation and referee report**: 15 mins class presentation of one of the papers on the reading list. There will be a presentation each week. On the same paper, the student will prepare a referee report. Please, read: How to Write an Effective Referee Report and Improve the Scientific Review Process, by Jonathan B. Berk, Campbell R.Harvey, and David Hirshleifer, published in the *Journal of Economic Perspectives*, 2017. The report is due one week after the presentation. **Weight: 1/3**

  2. **Homework**: There will be 3-4 homework assignments during the course. Some will be computational, others more theoretical, like the problem sets in first-year macro. With George Nikolakoudis, we are building a GitHub repository of Julia code on heterogeneous agent models, here [https://github.com/nikolakou](https://github.com/nikolakou) from which you can draw for your assignments. **Weight: 1/3**
3. **Replication**: A replication of the main result from an existing paper (either published or still at the working paper stage). It could be one of those on the reading list, or another one of your liking. You choose it, but you need my approval. Feel free to ask me for suggestions if you are unsure. *The replication is due the first day of class of the Spring semester*. **Weight: 1/3.**

- **General Exam**: The papers marked with a * are a must read for the general exam. They will be updated week by week.
1. Unsecured Credit and Default


2. Income, Consumption and Wealth Inequality in the Cross-Section and Over Time

(a) Income Inequality


* Maliar, Lilia, Serguei Maliar and Inna Tsener (2020). Capital-Skill Complementarity: Twenty Years After. CEPR working paper DP 15228


(b) Wealth Inequality


* Benhabib, Jess and Alberto Bisin. Skewed Wealth Distributions: Theory and Empirics, Journal of Economic Literature

* De Nardi, Maria Cristina, and Giulio Fella (2017). Saving and Wealth Inequality. Review of Economic Dynamics

3. The One-Asset Heterogeneous Agents Models in Continuous Time

(a) Background Reading


(b) Infinite Horizon


(c) Life-cycle


4. Transitional Dynamics and Aggregate Shocks in One-Asset Heterogeneous Agents Models

• Algan, Yann, Olivier Allais, Wouter Den Haan, and P. Rendhal (2014). Solving and Simulating Models with Heterogeneous Agents and Aggregate Uncertainty, *Handbook of Computational Economics chapter 6*


5. Consumption Under Uncertainty and Liquidity Constraints: Theory and Data

(a) Empirical Estimates of the MPC

• Background Reading


• Survey Evidence

  
  

• Quasi-Experimental Evidence

  


- **Semi-structural Models**


(b) The MPC in one-asset models

* Carroll, Christopher, Jiri Slacalek, Kiichi Tokuoka, and Matthew N. White (2017). The Distribution of Wealth and the Marginal Propensity to Consume. *Quantitative Economics*


6. **Income Dynamics**


7. Asset Pricing in Heterogeneous Agent Models


• Stavros Panageas (2020). The Implications of Heterogeneity and Inequality for Asset Pricing. Mimeo. UCLA.
8. Labor Supply


### 9. Fiscal Expenditure Multipliers

(a) Overviews of the Theoretical Literature in RANC and RANK Models


(b) Spender-Saver (TANK) Models


(c) HANC Models


(d) HANK Models

* Athreya, K., A. Owens, and F. Schwartzman (2017). Does redistribution increase output? The centrality of labor supply. Quantitative Economics


* Auclert, A., B. Bardoczy, M. Rognlie (2020). MPCs, MPEs, and Multipliers: A Trilemma for New Keynesian Models

10. The Two-Asset Heterogeneous-Agent Model


11. Models of Housing and Housing Wealth Effects
• Piazzesi, Monika and Martin Schneider (2016). Housing and Macroeconomics. Handbook of Macroeconomics

• Landvoigt, Tim, Monika Piazzesi, and Martin Schneider (2015). The Housing Market(s) of San Diego. American Economic Review


* Justiniano, Giorgio Primiceri and Andrea Tambalotti (2014). Credit supply and the housing boom. NBER WP 20874

• Greenwald, Dan (2017). The mortgage credit channel of macroeconomic transmission

• Gorea, Denis and Virgiliu Midrigan (2015). Liquidity Constraints in the U.S. Housing Market

* Adelino, Manuel, Antoinette Schoar and Felipe Severino (2016). Loan Originations and Defaults in the Mortgage Crisis: The Role of the Middle Class. Review of Financial Studies

• Albanesi, Stefania, Giacomo De Giorgi and Jaromir Nosal. Credit Growth and the Financial Crisis: A New Narrative

* Foote Christopher L., Lara Loewensteine and Paul S. Willen (2016). Cross-Sectional Patterns of Mortgage Debt during the Housing Boom: Evidence and Implications


12. The Transmission of Monetary Policy in HANK

(a) Background Readings


(b) Conventional Monetary Policy


(c) Unconventional Monetary Policy


* Cui, C. and V. Sterk (2020). Quantitative Easing. Mimeo. UCL.

(d) Evidence


13. Analytical HANK Models


* Caramp Nicolas and Dejanir Silva (2020). Monetary Policy and Wealth Effects: The Role and Risk and Heterogeneity