Macroeconomics and Heterogeneity

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Course Description

This is an upper-year undergraduate course designed to introduce students to macroeconomic models with heterogeneity. These models abandon the representative agent assumption. This can be useful for at least two reasons:

(1) Models with heterogeneous agents may behave differently than models with a single representative agent. Given that a real world economy is composed of many types of households and firms, adding heterogeneity may be a useful move towards realism. For example, in this course we will explore how marginal propensities to consume may differ across consumers, and the policy implications for governments and central banks.

(2) Models with heterogeneous agents allow us to explore questions about inequality. For example, a significant question we will ask in this course is what forces generate wealth inequality in an economy.

Models with heterogeneous agents are at the forefront of macroeconomic research, and therefore having a grounding in them can be useful to students who wish to attend graduate school, or students who wish to work in an environment which may use cutting edge models.

Because of the computational skills and high-level math involved, this course will not bring students right to the frontier of research. However, it will provide them with the intuition they need for continued study. By the end of this course, students should have a good understanding of how these models work and their implications for policy.

Learning Outcomes

Students will learn:

- When heterogenous agent models are useful.
- How heterogenous agent models have different implications than representative agent models.
- How marginal propensities to consume are an important policy consideration and when they matter.
- Certain factors impacting wealth inequality.

Topics Covered

Topics will follow the course notes here.

- Chapter 0 : Introduction
- Chapter 1 : Simple Keynesian Models (with Heterogeneity)
- Chapter 2 : Milton Friedman and the Permanent Income Hypothesis
- Chapter 3 : Empirical Evidence on Marginal Propensities to Consume
- Chapter 4 : Bewley and Credit Constraints
- Chapter 5 : Models with Uncertainty

- Chapter 6 : Determinants of the Wealth Distribution
- Chapter 7 : Two-Asset Models

Assessment and Evaluation

Exams

Most of the assessment for this course will come from exams, with the midterm and final exam making up 70% of the final mark.

Problem Sets

Each chapter contains a short problem set. The answers to these will be taken up in tutorial. Problem sets will be marked leniently, with most marks coming from honest attempts at answers.

Problem sets are worthwhile to do regardless of marks as they will help prepare students for the exam.

Assignment 1 - Coding Value Function Iteration

Assignment 1 will be a short coding assignment to familiarize students with value function iteration. Students are welcome to use any coding language they wish, but a short tutorial on Python will be provided in case students wish to use it.

Code should contain comments detailing what each line does, and students should be ready to answer questions about their code.

Assignment 2 - Short Paper Summary

I will provide a list of relatively easily-accessible papers on the topic of macroeconomic and inequality. Students are encouraged to pick a subtopic which interests them the most: wealth inequality, the causes of income inequality, the consequences of income inequality, etc.

Students will give a short 10 minute presentation of the main conclusions and methods of the paper.

Assessment	Percent of Grade
Problem Sets	5%
Midterm	30%
Final Exam	40%
Assignment 1	8%
Assignment 2	17%