Workshop on Life-cycle Models and Pensions

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1 Content

Lecture 1: The Life-cycle Model

- We solve and simulate a partial-equilibrium life-cycle model of consumption and saving

Lecture 2: Structural Estimation

- We estimate a partial-equilibrium life-cycle model using Simulated Methods of Moments (SMM)

Lecture 3: The overlapping generations (OLG) Model

- We solve a general-equilibrium life-cycle model with OLG in steady-state
- We extend the model with pay-as-you-go (PAYG) pensions and study its effects

Lecture 4: The Transition Path

- We use the OLG model to study the effects of pension policy during the transition

2 Course Material

All course material will be posted here: Github Website

3 Learning Objectives

After completing this course, the student should be able to

- Solve, simulate and estimate a partial-equilibrium life-cycle model
- Solve and simulate a general-equilibrium life-cycle model with OLG

- Understand consumption and savings behaviour over the life-cycle
- Identify how pension schemes affect
  - consumption and saving decisions over the life-cycle
  - aggregate variables
  - equilibrium prices

4 Software

We will use Julia in Visual Studio Code. Here is a guide on how to download the software: Julia in Visual Studio Code

5 Course prerequisites

There are no formal prerequisites for this course. However, a basic understanding of the following topics will be helpful:

1. Numerical optimization
2. Microeconomics and macroeconomics theory and modelling
3. Programming concepts
   - Data types (e.g. strings, booleans, integers and floats), Data containers (e.g. lists, dicts and arrays), Conditional statements (if-elseif-else), Loops (for, while), (Pseudo) random numbers