

Lecture 11: Extensions of the Buffer-Stock Consumption Model

Dynamic Programming

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Introduction

- **Point of today:**
 - ① Understanding various *extensions* of the buffer-stock consumption model
 - ② Help you read papers using numerical dynamic programming
- Relevant for your **term paper**



Setup

- **Papers:**
 - ① **Kaplan and Violante (2014): *A Model of the Consumption Response to Fiscal Stimulus Payments***
 - ② **Drue Dahl and Jørgensen (2016): *Precautionary Borrowing and the Credit Card Debt Puzzle***
 - ③ **Jørgensen (2016): *Life-Cycle Consumption and Children: Evidence from a Structural Estimation***
 - ④ **Drue Dahl and Jørgensen (2018): *Can Consumers Distinguish Persistent from Transitory Income Shocks***
 - ⑤ **Li et. al. (2016): *Housing Over Time and Over the Life Cycle: A Structural Estimation***
- We discuss the model section of some papers



Group work I

Paper: Kaplan and Violante (2014)

- ① Discuss for 10 mins in groups
- ② A group presents their interpretation
- ③ We discuss it in plenary



Group work II

Paper: **Drue Dahl and Jørgensen (2016)**

- ① Discuss for 10 mins in groups
- ② A group presents their interpretation
- ③ We discuss it in plenary



Term paper

- **Oral exam in group project**
 - ① April 9, 8–12: Presentation of project (descriptions)
 - ② April 16: **Submit project description**
 - ③ May 1, 9–15: 2. Supervision day
 - ④ May 24: **Submit project**
 - ⑤ Week 25: **Oral exam** (25 min)
- **Examples include:**
 - ① **Replication** of (selected) results from some paper
 - ② **Tests** (e.g. Monte Carlo) of various computational solution and estimation methods
 - ③ Presentation and implementation of a **new method** not taught in the course
 - ④ **New model, new data**
- **Formalities:** Around 8-12 pages per person (font size 12, double spacing and 3 cm margins)



Topics: some ideas

- **Consumption-saving:**
 - ① Do consumers have *advance* information? (e.g. know component of their future income)
 - ② Can we separately identify risk aversion, the elasticity of intertemporal substitution, and the discount factor? (using a model with Epstein-Zin preferences)
 - ③ Financial Literacy and investment in stocks
- **Family economics:**
 - ① Dynamic Model of Divorce with Limited Commitment
 - ② The effect of children on the consumption composition (luxury vs necessities)
- **Methods:**
 - Estimation of heterogeneous preferences
 - Sensitivity



Topics: some previous titles

- Dynamic Discrete Choice Estimation of Retirement Behavior in Denmark
- Ligevægt og handel i markedet for iPhones - En dynamisk diskret valgmodel i markedet for nye og brugte iPhones
- Field choice at UCPH
- Modelling the Effect of Export Promotion on Export Demand
- The Distribution of Wealth in Denmark, A Replication Study
- Preference Heterogeneity: Expanding the Buffer-Stock Model of Precautionary Savings to include for within-month consumption behavior
- Labour supply elasticities in a life-cycle model with human capital accumulation
- Ekspansiv finanspolitik og marginal forbrugstilbøjelighed
- A Discrete Choice Consumption-Savings Model For The Danish Pension Market



Data

- **BHPS:** Annual *panel* of UK households
 - **Years:** started in 1991 with 18 waves
 - **Variables:** income, food consumption, some wealth + more
 - **Code (mine):**
https://www.dropbox.com/s/ah6neac50dhz1ga/BHPS_online.zip?dl=0
- **PSID:** Bi-annual *panel* of US households
 - **Year:** 1999- (income and other stuff further back at annual basis)
 - **Variables:** Wealth, income and food consumption
 - **Code (Jeppes):**
https://www.dropbox.com/s/f6v256nfjheem98/PSID_online.zip?dl=0
- **SCF:** Tri-annual *cross-section* of US households
 - **Years:** 1989-
 - **Variables:** Wealth and income
 - **Code (Jeppes):**
https://www.dropbox.com/s/masf0hmnbxel5qv/SCF%20_online.zip?dl=0
- **Warning:** *It will take you considerable time to understand how to use these data sets*



Next time

- New topic:
 - Estimation of Dynamic Discrete Choice (DDC) models based on the canonical bus-engine replacement model of John Rust (1987)

