Dynamic Programming – Theory, Computation and Empirical Application

Frederik Ingemann Olsen & Nikolaj Toepfer Melchiorsen

Project description

- Who are the members of your research team?
  - The members of the team are Frederik Ingemann Olsen and Nikolaj Toepfer Melchiorsen
- What is the (working) title of your paper?
  - A dynamic programming approach to model the retirement behavior of Danish workers
- What is the research question?
  - At what age should you retire – and what are the factors which decides this?
- References to relevant literature that you are inspired by - best to point out one “key reference”.
  - A dynamic programming approach to model the retirement behaviour of blue-collar workers in Sweden
  - Rust
- The model you have in mind as a starting point for your analysis
  - Decisions, States, Heterogenity
  - Utility/Payoffs
- The solution methods and numerical techniques you consider applying
  - Value function iteration
  - Option value model
  - Life-cycle models
- The estimation methods you consider on implementing
  - MLE using NFXP
- The data you rely on (if empirical paper)
  - Retirement
    - We hope to either gain access to the Danish register data or to find something of use in statistic banken
    - If that isn’t possible, we will just use the same data as in the paper
- Potential counter factual simulations of interest
  - One could look into what the difference would be if there were different pensions
- A progressive plan of action / plan of work (start simple).
  - At first we plan to increase our understanding of the paper which we are trying to replicate.
  - We then estimate the model hopefully using newer data, and possibly with an increased amount of factors.
  - The estimation of the model might be done while writing about the theoretical work, as they can be used to “help” each other.

- Lastly we will interpret upon the results, and look at possibly flaws, and places to improve upon.