What I cannot create, I do not understand.

– Richard Feynman

Software Engineering for Economists

Advanced Applications

- Modeling Career Choice
- On-the-Job Search

Modeling Career Choice

Resources

- Derek Neal. The Complexity of Job Mobility among Young Men. *Journal of Labor Economics*, 17(2):237-261, 1999.
- Quantitative Economics Website

Model

Model Features

- Individuals choose their career and job within a career to maximize the expected discounted value of lifetime wages. They solve an infinite horizon dynamic programming problem with two state variables

Objective

$$\mathbb{E} \sum_{t=0}^{\infty} \beta^t \omega_t$$

Payoffs

$$w_t = \theta_t + \epsilon_t$$

- θ_t contribution of current occupation at time t
- ϵ_t contribution of current job at time t

Decision Problem

At the start of time t, a worker has the following options:

- **Stay Put**, retain a current (career, job) pair (θ_t, ϵ_t)
- **New Job**, retain a current career θ_t but redraw a job ϵ_t
- **New Life**, redraw both a career θ_t and a job ϵ_t

Draws of θ and ϵ are independent of each other and past values, with $\theta_t \sim F$ and $\epsilon_t \sim G$.

Value Functions

$$V_{SP} = \theta + \epsilon + \beta V(\theta, \epsilon)$$

$$V_{NJ} = \theta + \int \epsilon' G(d\epsilon') + \beta \int V(\theta, \epsilon') G(d\epsilon')$$

$$V_{NL} = \int \theta' F(d\theta') + \int \epsilon' G(d\epsilon') + \beta \int \int V(\theta', \epsilon') G(d\epsilon') F(d\theta')$$

Course Registration

- Please register for our class **ECON41904** by sending an eMail to Brett Baker at:

bbaker@uchicago.edu