Motivation
✓ Observed earnings ≠ price of labor, in the presence of a long-term contract.
✓ User cost of labor (UCL) measures the “allocative” wage, but faces empirical challenges.

Summary of the paper
✓ Address the empirical challenges of the UCL by exploiting Japanese wage data.
  - Challenge 1: Limited sample size—use large-scale Japanese wage survey.
  - Challenge 2: Upgrading of job-match quality through job changes—focus on new school graduates.
✓ The estimated UCL is highly cyclical after correcting the cyclical upgrading, while it is downwardly rigid.
✓ Propose a directed search model with adverse selection to account for the empirical findings.

Concept
✓ UCL: labor as a long-term asset
  
  \[
  UCL_t = PDV_t - E_t \left[ \beta (1 - s) \sum_{j=0}^{\infty} \beta^j (1 - s) w_{t+j} \right]
  \]
  where
  
  \[ PDV_t = E_t \left[ \sum_{j=0}^{\infty} \beta^j (1 - s) w_{t+j} \right] \]

Data
✓ Basic Survey on Wage Structure (BSWS) of Japan
  - Nationwide representative survey.
  - Earnings and hours worked available for each year of service; and
  - firm-worker characteristics.
  ➢ Construct the UCL for 18 categories (gender×education×firm size)
  ➢ Worker’s age is also available.
  ➢ Identify new graduates from school (e.g., 18 years old with high school degree)

Empirical result (cont.)
✓ History dependence of incumbent-worker wage
  - The UCL is more procyclical than the new-hire wage due to sizable and persistent cohort wage differences.

Model
✓ Setting
  - Directed search + wage contract (Rudanko 2009)
  - Skilled/unskilled workers, high/low prod. firms.
  - H firms can operate only if matched with S workers, but screening is imperfect (adverse selection).

✓ Wage as a screening tool
  - H firms maintain high wages to keep their submarket “too competitive” for unskilled workers.
  - H firms can still attract S workers, who face a higher job-finding probability than N workers.
  - Single wage policy attains a separation equilibrium.

✓ Model simulation
  - The UCL tracks underlying productivity in booms, but does not in recessions.

Notes:
Semi-elasticity with respect to 1 s.d. of the unemployment rate (sign flipped).
Both wage measures and the unemployment rate are HP-filtered. Sample: 1981-2010.