RISK-SENSITIVE JOB SEARCH

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VANILLA-JOB SEARCH BELLMAN EQUATION

Let $v^*(w)$ denote the maximum lifetime reward with current wage offer w.

$$v(w) = \max\left\{\frac{w}{1-\beta}, h(w)\right\}$$

- Wage process (W_t) is P-Markov on $\mathcal{W} \subset \mathbb{R}_+$
- Continuation value $h(w) = c + \beta \sum_{w' \in \mathcal{W}} v(w')P(w, w')$

RDP REPRESENTATION

Let

- $\Gamma(w) = A = \{0, 1\}$
- $V = \mathbb{R}_+$
- $B(x, a, v) = a \cdot \frac{w}{1-\beta} + (1 - a) \cdot h(w)$

There is no risk in present, risks are in the future

$\Longrightarrow$ We only need to change $h(w)$ to $(K_\theta h)(w)$.

APPLICATION

WAGE

Let the wage process follows

$$W_{t+1} = 0.9W_t + 0.2\varepsilon_{t+1}, \quad (\varepsilon_t) \sim_{IID} N(0,1)$$

$$\Longrightarrow$$

$$(W_t) \sim_{IID} N\left(0, \frac{0.2^2}{1-0.9^2}\right)$$

Recall we assume $\mathcal{W} \subset \mathbb{R}_+$