

Seminar exercises ECON 5300 Search

Monday 23 November 10-12, room 1220

- 1) Consider the search model in Pissarides (2000) chapter 1. What is the effect on unemployment and wages of
 - a) an increase in productivity p
 - b) an increase in the job destruction rate λ
 - c) a change in the matching function from $m(uL, vL)$ to $am(uL, vL)$ where $a > 1$?

- 2) Consider the search model in Pissarides (2000), chapter 2.1-2.3. What is the effect on unemployment and wages of a change in the matching function from $m(uL, vL)$ to $am(uL, vL)$ where $a > 1$?

- 3) Consider Shimer (AER, 2005), section IIC. Consider the special case where

$$\frac{r + s}{q(\theta_{p,s})} + \beta\theta_{p,s} = (1 - \beta) \frac{p - z}{c}.$$

Show that

The elasticity of the v-u ratio θ with respect to “net labor productivity” $p - z$ is

$$\frac{r + s + \beta f(\theta_{p,s})}{(r + s)(1 - \eta(\theta_{p,s})) + \beta f(\theta_{p,s})}$$

where $\eta(\theta) \in [0, 1]$ is the elasticity of $f(\theta)$. This

4) A variation to McCall’s model:

An unemployed worker samples wage offers on the following terms. Each period, with probability ϕ , $1 > \phi > 0$, she receives no offer (we may regard this as a wage offer of zero forever). With probability $(1 - \phi)$ she receives an offer to work for w forever, where w is drawn from a cumulative distribution function $F(w)$. Successive drawings across periods are independently and identically distributed. The worker chooses a strategy to maximize

$$E \sum_{t=0}^{\infty} \beta^t y_t, \quad \text{where } 0 < \beta < 1,$$

$y_t = w$ is the worker is employed, and $y_t = c$ is the worker is unemployed. Here c is unemployment compensation, and w is the wage at which the worker is employed. Assume that, having once accepted a job offer at wage w , the worker stays in the job forever.

Let $v(w)$ be the expected value of $\sum_{t=0}^{\infty} \beta^t y_t$ for an unemployed worker who has offer w in hand and who behaves optimally. Write Bellman’s functional equation for the worker’s problem.