

## Problem Set 8: Search Theory

**Exercise 1.** Fallick and Fleischman (2004) report that 5 million people left employment in the U.S. in 1999. Meanwhile, 120,000 new jobs were created on net each month. How many people entered employment? What does this finding suggest about the U.S. labour market?

**Exercise 2.** In the flow model of the labour market, the job finding rate was  $xa(\theta)$ , where  $x$  represented the efficiency of the matching process and  $\theta$  denoted the labor market tightness,  $\frac{v}{u}$ . What is the sign of  $a'(\theta)$ ? What is the average time to find a job? Does a high  $\theta$  facilitate workers or firms?

**Exercise 3.** In the model, the evolution of unemployment was

$$\dot{U} = \phi(1 - u)L - xauL$$

How would this change if workers could find jobs, but turn them down with probability  $\beta$ . How would this change equilibrium unemployment? What might determine  $\beta$ ?

**Exercise 4.** How would the internet affect the efficiency of job matching and the Beveridge curve?

**Exercise 5.** Paul Krugman recently wrote about a new paper by the Boston FED

‘...it looks at the recent deterioration of the Beveridge curve the apparent worsening of the tradeoff between vacancies and unemployment. Many people have argued that this is evidence of structural unemployment, of workers not having the right skills or something like that. But the authors show that the worsening of the tradeoff seems to apply to all skill groups, all types of work, and so on.’

What are the implications of this finding?

**Exercise 6.** Suppose cost of a vacancy is  $k$  (in terms of advertizing, recruitment costs etc.) The present discounted value of a new worker to firm is  $J$ . Then in equilibrium, explain why  $xq(\theta)J = k$ .