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Pascal Michaillat
Brown University

Quiz 2: Labor Supply

Question A

The same Cobb-Douglas matching function gives the flow of new worker-firm matches created when they are U unemployment workers and V vacancies: $m = \omega \times U^{\eta} \times V^{1-\eta}$. What is the expression for the rate f at which a worker finds a job?

1. $f(\theta) = \omega \times \theta^{\eta}$
2. $f(\theta) = \omega \times \theta^{1-\eta}$
3. $f(\theta) = \omega \times \theta^{-\eta}$
4. $f(\theta) = \omega \times \eta^{\theta}$
5. $f(\theta) = \omega \times \theta^{1+\eta}$

Question B

What is a realistic specification for a matching function?

1. $m(U, V) = \omega \times U^{0.2} \times V^{0.8}$
2. $m(U, V) = \omega \times U^{0.5} \times V^{0.5}$
3. $m(U, V) = \omega \times U^{0.5} \times V^{0.8}$
4. $m(U, V) = \omega \times U^{0.3} \times V^{0.4}$
5. $m(U, V) = 0.5 \times U + 0.5 \times V$

Question C

In the United States, the average amount of time people keep a given job is approximately

1. Less than one month
2. Between two and four months
3. About one year
4. Between two and four years
5. More than five years

Question D

For any matching function, what is a key relationship between the job-finding rate f, vacancy-filling rate q, and labor market tightness θ?

1. $f + q = \theta$
2. $f \times q = \theta$
3. $f/q = \theta$
4. $f - q = \theta$
5. $q/f = \theta$

Question E

Over the US business cycle, how do the unemployment rate and vacancy rate comove?

1. The unemployment and vacancy rates are acyclical.
2. Both unemployment and vacancy rates are procyclical.
3. Both unemployment and vacancy rates are countercyclical.
4. The vacancy rate is countercyclical while the unemployment rate is procyclical.
5. The vacancy rate is procyclical while the unemployment rate is countercyclical.

Question F

In the US since the 1980s, it seems that unemployment goes up in recessions because

1. Unemployed workers take a longer time to find a job.
2. Employed workers lose their jobs at a faster rate.
3. Unemployed workers are discouraged and drop out of the labor force.
4. New workers enter the labor force to increase their household’s income.
5. Firms take a longer time to fill vacant jobs.

Question G

In the matching model, when we derive the labor supply, we assume that

1. Inflows into unemployment equal outflows from unemployment.
2. Inflows into unemployment are larger than outflows from unemployment.
3. Inflows into unemployment are smaller than outflows from unemployment.
4. Inflows into unemployment equal inflows into the labor force.
5. Inflows into employment equal inflows into the labor force.

Question H

Consider a matching model of the labor market with labor force of size H, a recruiting cost of $r > 0$ recruiters per vacancy, a job-separation rate $s > 0$, and a Cobb-Douglas matching function: $m = \omega \times U^{\eta} \times V^{1-\eta}$. We define the labor market tightness as $\theta = V/U$. Compute labor supply L^s.

1. $L^s(\theta) = \frac{f(\theta)}{s \times f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$
2. $L^s(\theta) = \frac{f(\theta)}{s + f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{-\eta}$
3. $L^s(\theta) = \frac{f(\theta)}{s + f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$
4. $L^s(\theta) = f(\theta) \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$
5. $L^s(\theta) = \frac{s}{s + f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$

Question I

The labor supply $L^s(\theta)$ from Question H has the following properties:

1. It is increasing and concave in θ with $L^s(0) = 0$ and $L^s(\infty) = H$.
2. It is increasing and convex in θ with $L^s(0) = 0$ and $L^s(\infty) = H$.
3. It is decreasing and concave in θ with $L^s(0) = H$ and $L^s(\infty) = 0$.
4. It is decreasing and convex in θ with $L^s(0) = H$ and $L^s(\infty) = 0$.
5. It is increasing and concave in θ with $L^s(0) = 0$ and $L^s(\infty) = \infty$.
6. It is increasing and convex in θ with $L^s(0) = 0$ and $L^s(\infty) = \infty$.