Quiz on Matching Model of the Labor Market

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Question 1

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

A) Inflows into unemployment equal outflows from unemployment.

B) Inflows into unemployment are larger than outflows from unemployment.

C) Inflows into unemployment are smaller than outflows from unemployment.

D) Inflows into unemployment equal inflows into the labor force.

E) Inflows into employment equal inflows into the labor force.

F) None of the above.

Question 2

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 labor market tightness as $\theta = V/U$. Compute labor supply L^s.

A) $L^s(\theta) = \frac{f(\theta)}{s \times f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$

B) $L^s(\theta) = \frac{f(\theta)}{s+f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{-\eta}$

C) $L^s(\theta) = \frac{f(\theta)}{s+f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$

D) $L^s(\theta) = f(\theta) \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$

E) $L^s(\theta) = \frac{s}{s+f(\theta)} \times H$ where $f(\theta) = \omega \times \theta^{1-\eta}$

F) None of the above

Question 3

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

A) It is increasing and concave in θ with $L^s(0) = 0$ and $L^s(\infty) = H$.

B) It is increasing and convex in θ with $L^s(0) = 0$ and $L^s(\infty) = H$.

C) It is decreasing and concave in θ with $L^s(0) = H$ and $L^s(\infty) = 0$.

D) It is decreasing and convex in θ with $L^s(0) = H$ and $L^s(\infty) = 0$.

E) It is increasing and concave in θ with $L^s(0) = 0$ and $L^s(\infty) = \infty$.

F) It is increasing and convex in θ with $L^s(0) = 0$ and $L^s(\infty) = \infty$.

G) None of the above.

Question 4

Why is the labor supply increasing in labor market tightness in the matching model?

A) A higher tightness makes it more expensive to hire producers.

B) A higher tightness makes it cheaper to hire producers.

C) A higher tightness makes it easier to fill vacancies.

D) A higher tightness makes it easier to find jobs.

E) A higher tightness reduces the job-separation rate.

F) None of the above.

Question 5

If the labor-force participation rate suddenly increases, what necessarily happens in the matching-model diagram?

A) The labor supply curve is not affected.

B) The matching function is more effective.

C) The matching functions is less effective.

D) The labor supply curve shifts inward.

E) The labor supply curve shifts outward.

F) None of the above.

Question 6

In the matching-model diagram,, what would an increase in the job-separation rate do?

A) It would have no effect on the labor supply curve.

B) It would shift the labor supply curve inward.

C) It would shift the labor supply curve outward.

D) It would make the matching function more effective.

E) It would make the matching function less effective.

F) None of the above.

Question 7

Consider a matching model of unemployment 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: $m = \sqrt{U} \times \sqrt{V}$. Define labor market tightness as $\theta = V/U$. Using the assumption that labor-market flows are balanced, compute the recruiter-producer ratio $\tau = R/N$.

A) $\tau(\theta) = \frac{\sqrt{\theta}}{1 - r \times s \times \sqrt{\theta}}$

B) $\tau(\theta) = \frac{r \times s}{1 - r \times s \times \sqrt{\theta}}$

C) $\tau(\theta) = \frac{r \times s \times \sqrt{\theta}}{1 - r \times s \times \sqrt{\theta}}$

D) $\tau(\theta) = \frac{r + s}{r + s \times \sqrt{\theta}}$

E) $\tau(\theta) = \frac{r \times s \times \sqrt{\theta}}{r \times s \times \sqrt{\theta} - 1}$

F) None of the above

Question 8

The recruiter-producer ratio derived above has the following properties:

A) It is increasing in θ and positive on $\mathbb{R}_+$, with $\lim_{\theta \to \infty} \tau(\theta) = \infty$.

B) It is decreasing in θ and positive on $\mathbb{R}_+$, with $\lim_{\theta\to\infty}\tau(\theta) = 0$.

C) It is increasing in θ and positive on $[0, rs]$, with $\lim_{\theta\to rs}\tau(\theta) = \infty$.

D) It is increasing in θ and positive on $[0, 1/rs]$, with $\lim_{\theta\to 1/rs}\tau(\theta) = \infty$.

E) It is decreasing in θ and positive on $[0, rs]$, with $\lim_{\theta\to rs}\tau(\theta) = 0$.

F) None of the above.

Question 9

Consider a matching model of unemployment with labor force H, a recruiting cost of $r > 0$ recruiters per vacancy, a job-separation rate $s > 0$, a Cobb-Douglas matching function $m = \sqrt{U} \times \sqrt{V}$, a fixed wage w, and a production function $y = 2 \times a \times \sqrt{N}$, where a governs labor productivity and N denotes the number of producers in the firm. Define labor market tightness as $\theta = V/U$. What is the labor demand?

A) $L^d(\theta) = (1 - rs\sqrt{\theta})^2 \times (a/w)^2$

B) $L^d(\theta) = \frac{(w/a)^2}{(1-rs\sqrt{\theta})^2}$

C) $L^d(\theta) = \frac{(a/w)^2}{1-rs\sqrt{\theta}}$

D) $L^d(\theta) = (1 - rs\sqrt{\theta}) \times (a/w)^2$

E) $L^d(\theta) = (1 - rs\sqrt{\theta}) \times (a/w)$

F) None of the above

Question 10

The labor demand curve derived in the previous question has the following properties:

A) It is decreasing in θ, with $L^d(0) = (a/w)^2$ and $L^d(1/(rs)^2) = 0$.

B) It is decreasing in θ, with $L^d(0) = \infty$ and $L^d(\infty) = 0$.

C) It is increasing in θ, with $L^d(0) = 0$ and $L^d(1/(rs)^2) = (a/w)^2$.

D) It is decreasing in θ, with $L^d(0) = (a/w)$ and $L^d(1/(rs)) = 0$.

E) None of the above.

Question 11

Consider a matching model with fixed wage. Imagine that the government implements training programs to increase the skills and productivity of workers. In the tightness-employment diagram, this policy would

A) Shift the labor demand curve upward

B) Shift the labor demand curve downward

C) Shift the labor supply curve leftward

D) Shift the labor supply curve rightward

E) Rotate the labor demand curve upward

F) Rotate the labor demand curve downward

G) Have no effect on labor demand and labor supply

H) None of the above

Question 12

In the matching model, which of the following parameters and variables negatively influence labor demand?

A) Labor market tightness and productivity

B) Wage and productivity

C) Wage and labor market tightness

D) Labor force and wage

E) Labor force and recruiting cost

F) None of the above