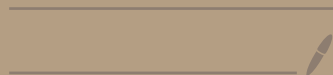


# Matching on the Labor and Product Markets

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<https://www.pascalmichailat.org/t5.html>



## Product market.

- Households cany  $v$  visits
- Firms provide  $k$  services (capacity)
- Matching function determines # trades.

$$y = m(k, v)$$

Use CES matching function.

$$y = [k^{-r} + v^{-r}]^{-1/r} \quad r > 0$$

- Each visit cost  $p > 0$  resources

## Labour market

- Firms post  $\hat{v}$  vacancies
- There are  $h$  workers in labour force  $\rightarrow$  all initially unemployed.
- Matching function determines # of hires.

$$l = \hat{m}(h, \hat{v})$$

Use CES matching function:

$$l = [h^{-\hat{r}} + \hat{v}^{-\hat{r}}]^{-1/\hat{r}} \quad \hat{r} > 0$$

- Each vacancy requires  $\hat{p}$  resources

## Market tightness:

- Product market tightness.

$$\alpha = v / k$$

- Labour market tightness:

$$\theta = \hat{v} / h$$

## Trading probabilities

- Buying probability  $q(x)$
- Selling probability  $f(x)$
- Recruiting probability  $\hat{q}(\theta)$
- Job-finding probability  $\hat{f}(\theta)$

## Expression of probabilities

$$\hat{f}(\theta) = \frac{c}{h} = \frac{[h^{-\hat{r}} + \bar{v}^{-\hat{r}}]^{-1/\hat{r}}}{h} = [1 + \theta^{-\hat{r}}]^{-1/\hat{r}}$$

$$\hat{q}(\theta) = \frac{c}{\bar{v}} = \frac{[h^{-\hat{r}} + \bar{v}^{-\hat{r}}]^{-1/\hat{r}}}{\bar{v}} = [\theta^{\hat{r}} + 1]^{-1/\hat{r}}$$