

# **Product Market and Market Tightness**

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<https://pascalmichailat.org/c2/>

- Households produce & sell services  $k$   
 $\hookrightarrow$  also aggregate productive capacity
- Households visit shops to buy services  $v$   
 $\hookrightarrow$  also aggregate # of visits
- Number of trades = # of services sold  
 = # services bought = output  $y$
- Output is determined by CES matching function (because it satisfies  $y \leq \min(k, v)$ )

$$y = \left[ k^{-\gamma} + v^{-\gamma} \right]^{-\frac{1}{\gamma}}$$

$$\gamma > 0$$

- Market tightness:

$$x = \frac{v}{k}$$

- Selling probability:

$$f(x) = \frac{y}{k} = \frac{[k^{-r} + v^{-r}]^{-1/r}}{k}$$

$$= \left[ \left(\frac{k}{k}\right)^{-r} + \left(\frac{v}{k}\right)^{-r} \right]^{-1/r} \quad (\text{by (2)})$$

$$f(x) = [1 + x^{-r}]^{-1/r}$$

$$f'(x) > 0 \quad f(0) = 0$$

$$f(\infty) = 1$$

→ more likely to sell in higher market

- Buying probability

$$q(x) = \frac{y}{v} = \frac{[k^{-r} + v^{-r}]^{-1/r}}{v}$$

$$= \left[ \left(\frac{k}{v}\right)^{-r} + \left(\frac{v}{v}\right)^{-r} \right]^{-1/r} \quad (\text{CRS})$$

$$= \left[ \left(\frac{1}{x}\right)^{-r} + 1 \right]^{-1/r}$$

$$q(x) = [1 + x^r]^{-1/r}$$

$$q(0) = 1 \quad q(\infty) = 0$$

$$q'(x) < 0$$

→ less likely to be able to buy in a

Eighten man bet