Product Market and Market Tightness

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https://www.pascalmichaillat.org/t5.html

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

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

$\gamma > 0$

- Market tightness:

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

- Selling probability:

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

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

(by CRS)

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

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

$f(\infty) = 1$

→ more likely to sell in tighter market

- Buying probability

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

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

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

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

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

. $q'(x) < 0$

→ less likely to be able to buy in a

tighter market