Product Market and Market Tightness

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- 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.

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

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

(by (RS))

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

- $f'(x) > 0$ $f(0) = 0$

$f(\infty) = 1$

$\rightarrow$ more likely to sell in tighter market

- Buying probability

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

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

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

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

- $q(0) = 1$ · $q(\infty) = 0$

· $q'(x) < 0$

$\rightarrow$ less likely to be able to buy in a

tighter market