Matching in the Heterogeneous-Agent Model

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Matching in HAM model

- Household i visits v_i shops
- Household i has a capacity of k_i services
- Aggregate matching function determines # of trades (# of services sold/purchased).

$$y = m\left(\sum_i k_i, \sum_i v_i\right)$$

(m: matching function)

y: output, # services sold/purchased

$\sum_i k_i = k$ = aggregate supply of services, capacity

$\sum_i v_i = v$ = aggregate # of visits

Selling probability: (proba. to sell one service)

$$f = \frac{y}{\sum_i k_i} = m\left(1, \frac{\sum_i v_i}{\sum_i k_i}\right)$$

market tightness

$$x = \frac{\sum_i v_i}{\sum_i k_i}$$

$$f(x) = m(1, x)$$

→ household i will sell $\underline{f(x) \cdot k_i}$ pieces

Buying probability:

$$q = \frac{y}{\sum_i v_i} = m\left(\frac{\sum_i k_i}{\sum_i v_i}, 1\right)$$

$$q(x) = m(1/x, 1)$$

→ household i will buy $\underline{q(x) \cdot v_i}$ pieces