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 mates (# of services sold/purchased)

$$y \quad = \quad \overset{\text{matching function}}{m} \left(\sum_i k_i \; , \; \sum_i v_i \right)$$

$\uparrow$ output, # services sold/purchased

$$\sum_i k_i = k = \text{aggregate supply of services,} \atop \text{capacity}$$

$$\sum_i v_i = v = \text{aggregate # of visits}$$

Selling probability: (proba. to sell one service)

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

market tightness.

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

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

-> household i will sell $\underline{f(x) \cdot k_i}$ service

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 $\underline{q(x) \cdot v_i}$ services