Example State-Dependent Pricing 2

1 Intoduction

- Some comment

2 Model

- Production function

$$y_t(h) = Z_t a_t(h) \ell_t(h) \tag{2.1}$$

- Profits
- Each firm chooses prices $\{\}$ in order to maximize its market value

$$\mathbb{E}_t \sum_{\tau=0}^{\infty} D_{t,t+\tau} \Pi_{t+\tau}(h) \tag{2.2}$$

where nominal profits in period t are given by

$$\Pi_t(h) = p_t(h) y_t(h) - W_t \ell_t(h) - \kappa_t(h) \mathbb{1}\{p_t(h) \neq p_{t-1}(h)\} \tag{2.3}$$

- Value function for the firm

$$V_t\left(a_t(h), \frac{p_{t-1}(h)}{P_t}; \ \cdot \ \right) = \max_p \left\{ \Pi^R\left(a_t(h), \frac{p_{t-1}(h)}{P_t}, \cdot\right) + \mathbb{E}_t\left[D^R_{t,t+1} V_t\left(a_{t+1}(h), \frac{p}{P_{t+1}}, \cdot\right)\right]\right\}$$

- $$v(a, \tilde{p}; \ \cdot \ ) = \int_\xi \max\left\{V^A() - \xi, V^N()\right\}$$

  where

$$\begin{aligned} V^A(a, \tilde{p}_{-1}, \ \cdot \ ) &= \max_{\tilde{p}} \left\{ \Pi^R\left(a, \tilde{p}, \cdot\right) + \mathbb{E}\left[\,\right]\right\} \\ V^N(a, \tilde{p}_{-1}, \ \cdot \ ) &= \Pi^R\left(a, \tilde{p}_{-1}, \cdot\right) + \end{aligned} \tag{2.4}$$

  The firm will choose to pay the fixed cost iff $V^A - \xi \geq V^N$. Hence, there is a unique threshold which makes the firm indifferent between these two options

$$\tilde{\xi}(a, \tilde{p};) = V^A(a, \tilde{p}) - V^N(a, \tilde{p})$$

- The firm value function V , adjusted by the marginal utility of the representative households, is therefore given by