

7 Lemon Banking

$$\begin{aligned} \max_q \quad & E\pi = (p(q)q - r)F \\ & p'(q)q + p(q) = 0 \end{aligned}$$

$$E\pi = p(q) [sC + (q - r)F] + (1 - p(q)) \max(sC - rF, 0) - sC$$

$$E\pi = p(q) [sC + (q - r)F] - sC$$

$$E\pi = (p(q)q - r)F + (rF - sC)(1 - p(q))$$

$$\max_{q,C} \quad E\pi = (p(q)q - r)F + (rF - sC)(1 - p(q)) \quad \text{s.t.} \quad C \geq \varepsilon$$

$$(p'(q)q + p(q))F - p'(q)(rF - sC) = 0$$

$$s(1 - p(q)) = \lambda$$

$$\lambda(C - \varepsilon) = 0$$

$$\begin{aligned} \max_q \quad & W = (p(q)q - s)F \\ & p'(q)q + p(q) = 0 \end{aligned}$$

$$\frac{\partial^2 E\pi}{\partial q^2} dq + p'(q)s d\varepsilon = 0$$

$$\frac{dq}{d\varepsilon} = -\frac{p'(q)s}{\frac{d^2 E\pi}{dq^2}}$$

$$\max_{\varepsilon} \quad W = \alpha EU + \beta E\pi$$

$$EU = p(q)rF + (1 - p(q))s\varepsilon - sF$$

$$E\pi = p(q)(q - r)F - (1 - p(q))s\varepsilon$$

$$\begin{aligned} \frac{\partial W}{\partial \varepsilon} &= (\alpha - \beta)(1 - p(q))s + \alpha \frac{dq}{d\varepsilon} \left[p'(q)(rF - s\varepsilon) + \frac{\beta}{\alpha} \frac{dE\pi}{dq} \right] \\ &= (\alpha - \beta)(1 - p(q))s + \alpha \frac{dq}{d\varepsilon} p'(q)(rF - s\varepsilon) \end{aligned}$$