

## 7 Lemon Banking

$$\max_q E\pi = (p(q)q - r) F$$

$$p'(q)q + p(q) = 0$$

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

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

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

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

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

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

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

$$\max_q W = (p(q)q - s) F$$

$$p'(q)q + p(q) = 0$$

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

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

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

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

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

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

$$= (\alpha - \beta) (1 - p(q)) s + \alpha \frac{dq}{d\varepsilon} p'(q) (rF - s\varepsilon)$$