

③

$$E_1(A) = p[q(0) + (1-q)3] + (1-p)[q(2) + (1-q)(0)] \\ = 3p(1-q) + 2q(1-p).$$

$$\frac{\partial E_1(A)}{\partial p} = 3 - 3q - 2q = 3 - 5q = \begin{cases} > 0 & q < \frac{3}{5} \Rightarrow p=1 \\ 0 & q = \frac{3}{5} \Rightarrow \text{arb } p \\ < 0 & q > \frac{3}{5} \Rightarrow p=0 \end{cases}$$

$$E_2(\{B, C\}) = p[q(0) + (1-q)2] + (1-p)[q(1) + (1-q)(0)] \\ = 2p(1-q) + q(1-p).$$

$$\frac{\partial E_2(\{B, C\})}{\partial q} = -2p + 1 - p = 1 - 3p = \begin{cases} > 0 & p < \frac{1}{3} \Rightarrow q=1 \\ 0 & p = \frac{1}{3} \Rightarrow \text{arb } q \\ < 0 & p > \frac{1}{3} \Rightarrow q=0. \end{cases}$$

Consistent choices $(q^*, p^*) = (\frac{3}{5}, \frac{1}{3})$

Also $q=0$ & $p=1$

$q=1$ & $p=0$

Sequential equilibrium

$$(p^*, q^*) = (\frac{1}{3}, \frac{3}{5})$$

$$= (0, 1)$$

$$= (1, 0)$$

System of belief

$$\mu_2(B) = \frac{1}{3} \quad \mu_2(C) = \frac{2}{3}$$

$$\mu_2(B) = 0 \quad \mu_2(C) = 1$$

$$\mu_2(B) = 1 \quad \mu_2(C) = 0.$$