Notater til forelesning 8 –
Sekvensiell konkurranse og Stackelberg modell

Stackelberg modell, kap 11.1

kvantumskonkurranse med sekvensielle valg

Trinn 1: Bedrift 1 (leder) velger q_1

Trinn 2: Bedrift 2 (følger) velger q_2

Etterspørsel: $P = A - BQ$ hvor $Q = q_1 + q_2$

MC: $c_1 = c_2 = c$

T2: maks $\Pi_2 = (P-c)\cdot q_2 = (A - Bq_1 - Bq_2 - c)q_2$

$$\frac{\partial \Pi_2}{\partial q_2} = 0 \Rightarrow RF_2: \; q_2^* = \frac{A - Bq_1 - c}{2B} = \frac{A-c}{2B} - \frac{q_1}{2}$$

T1: maks $\Pi_1 = (P-c)q_1 = (A - Bq_1 - Bq_2^* - c)q_1$

$$\frac{\partial \Pi_1}{\partial q_1} = 0 \Rightarrow q_1^* = \frac{A-c}{2B} \Rightarrow q_2^* = \frac{A-c}{4B} \qquad P^* = \frac{A+3c}{4}$$

Stackelberg likevekt

Eksempel: $P = 200 - q_1 - q_2$ $\quad MC = 60$

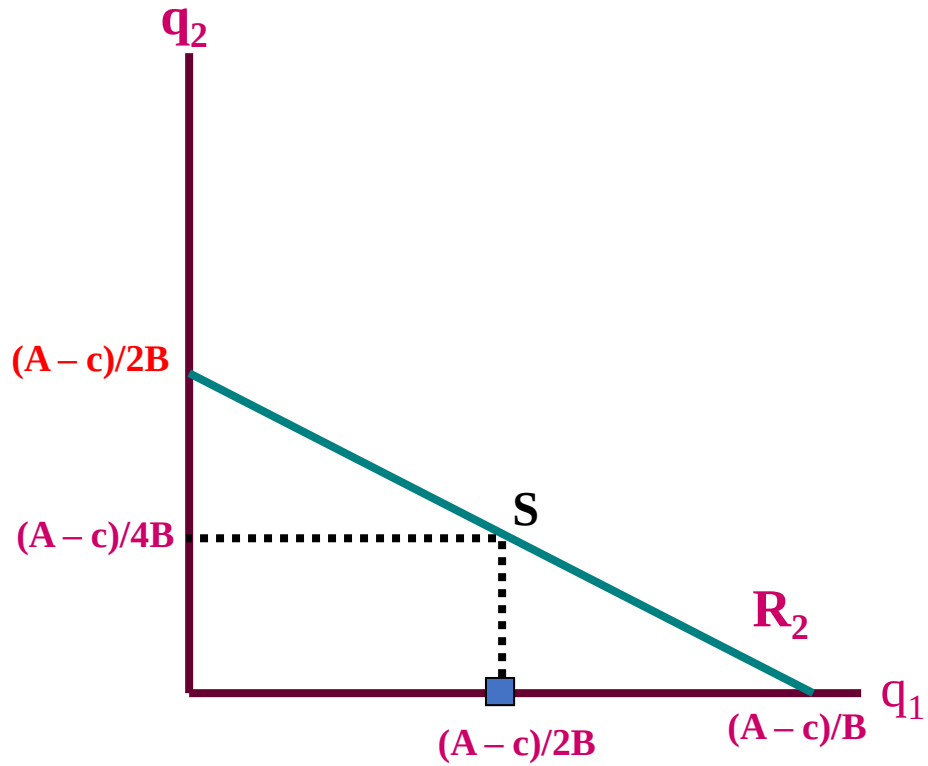
$$q_1^* = \frac{A-c}{2B} = \frac{200-60}{2} = 70$$

$$q_2^* = \frac{A-c}{4B} = \frac{200-60}{4} = 35$$

$$P^* = \frac{A+3c}{4} = \frac{200+3\cdot 60}{4} = 95$$

$$\Pi_1 = (95-60)\cdot 70 = 2450$$

$$\Pi_2 = (95-60)\,35 = 1225$$



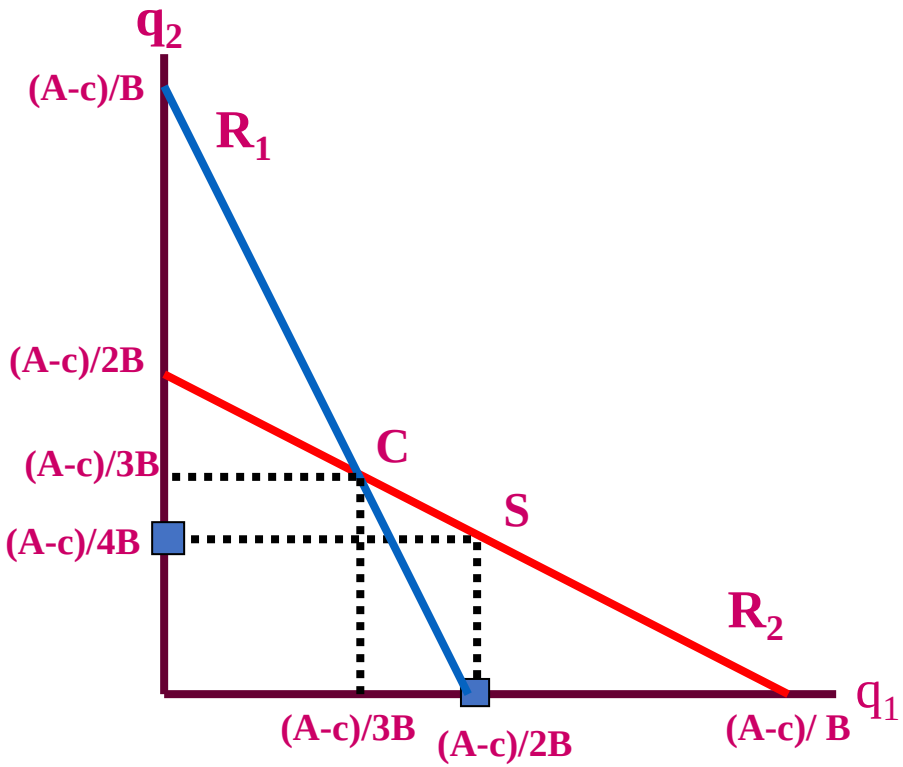
Stackelberg vs Cournot likevekt likevekt

$$Q^S = \frac{A-c}{2B} + \frac{A-c}{4B} = \frac{3(A-c)}{4B}$$

$$Q^C = \frac{A-c}{3B} + \frac{A-c}{3B} = \frac{2(A-c)}{3B}$$

$$Q^S > Q^C$$

$$P^S < P^C$$



Sekvensiell priskonkurranse, kap 11.2

Trinn 1: Bedrift 1 velger p_1

Trinn 2: Bedrift 2 velger p_2

Etterspørsel:

$$B1: D_1(p_1,p_2) = \frac{(p_2 - p_1 + t)N}{2t}$$

$$B2: D_2(p_1,p_2) = \frac{(p_1 - p_2 + t)N}{2t}$$

$$T2: \pi_2(p_1,p_2) = (p_2 - c_1)\frac{(p_1 - p_2 + t)N}{2t}$$

$$\frac{\partial \pi_2}{\partial p_2} = 0 \Rightarrow RF_2: p_2^* = \frac{p + t + c}{2}$$

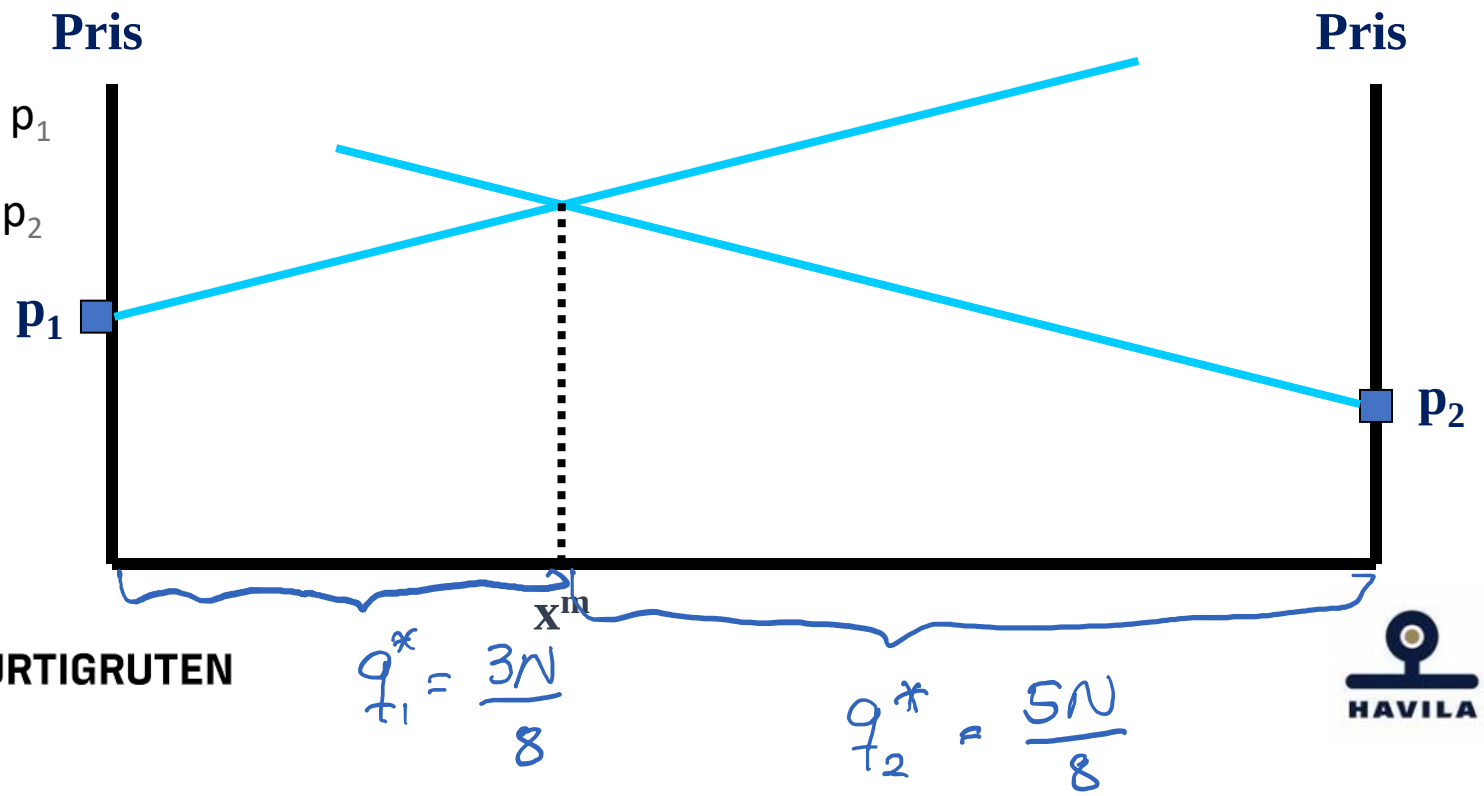
$$T1: \pi_1(p_1,p_2) = (p_1 - c)\frac{(p_2^* - p_1 + t)N}{2t}$$

$$\frac{\partial \pi}{\partial p_1} = 0 \Rightarrow p_1^* = c + \frac{3t}{2} \qquad p_2^* = c + \frac{5t}{4}$$

Sekvensiell priskonkurranse, kap 11.2

Trinn 1: Bedrift 1 velger p_1

Trinn 2: Bedrift 2 velger p_2



$p_1^* = c + \frac{3t}{2}$

$p_2^* = c + \frac{5t}{2}$

$q_1^* = \frac{3N}{8}$

$q_2^* = \frac{5N}{8}$

$\pi_1 = (p_1 - c) q_1 = \left(c + \frac{3t}{2} - c\right) \frac{3N}{8} = \frac{9NT}{16}$

$\pi_2 = (p_2 - c)\left(c + \frac{5t}{2} - c\right) \frac{5N}{8} = \frac{25NT}{32}$