



ECO 650: Dynamic pricing-Exercices

1 Exercice 1: Durable Good

Assumptions

A durable good monopoly, M, with a production cost c . Two consumers who live two periods $t = \{1; 2\}$. Two consumers buy either 0 or 1 unit. C1 has a valuation 1 and C2 v_l with $c < v_l < 1$. δ is the discount factor. M sets p_1 in $t = 1$ and p_2 in $t = 2$.

Questions

1. Determine the price equilibrium p and profit Π if M only sells in $t = 1$.
2. Determine the two period equilibrium (p_1, p_2) and profit $\Pi_{1,2}$ of M.
3. Compare the two profits when $c < v_l < \frac{1}{2}(1 + \frac{c}{1+\delta})$. What happens if $v_l > \frac{1}{2}(1 + c)$?

2 Exercise 2: Poaching

Assumptions Two firms $k \in \{A, B\}$ are located at the extremes of a Hotelling line and compete during two periods, $t \in \{1, 2\}$. Prices are denoted p_k^t . Consumers with a reservation price r uniformly distributed along the line, incur a linear transportation cost $-x$ to travel distance x . No production cost.

Questions

1. Determine the equilibrium of the two period game. Firms now observe consumer's identities and can set personalized prices p_{kA}^2 and p_{kB}^2 for consumers who bought from A or B in $t = 1$.
2. If α is the market share of firm A in $t = 1$, determine the second period equilibrium.
3. Consumers are forward looking. Determine the address of the indifferent consumer α in $t = 1$.
4. Determine the first period equilibrium prices.