

Extra-exercise of Topic 6

A population of potential consumers is uniformly distributed with density 1 along a segment of length L . Two firms compete to sell a product that is homogeneous except for the location of the firm. Firm 1 is located at a distance of a from the left end of the segment and firm 2 at a distance of a from the right end of the segment. The utility that a consumer j obtains buying the product at firm i is given by $U_{ji} = r - p_i - tx_{ij}$, where p_i is the price set by firm i , x_{ij} is the distance along the segment between the location of consumer j and the location of firm i , and t is the transport cost per unit of distance.

- a. Obtain the demand for each one of the firms
- b. Calculate the own-price elasticity of demand of firm 1. How does this elasticity change when the transport cost changes?
- c. Suppose that the unit cost of production is identical for both firms and equal to c . Obtain the reaction functions for firms 1 and 2.
- d. Obtain the Nash equilibrium in prices.