

Existence of Nash-Bertrand equilibrium in duopoly games with pollution treatment cost

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ABSTRACT. In this paper we will formulate Bertrand duopoly without product differentiation and with pollution treatment cost sharing.

Firm i 's profit is given by

$$H_i(x_1, x_2) = g(x_1, x_2)(x_i - c) - \frac{x_i}{\sum_{j=1}^2 x_j} T \left(\sum_{j=1}^2 x_j \right), \quad i = 1, 2,$$

where x_i is firm i 's output, c is constant marginal cost.

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