

ECON 6090 - TA Section 7

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Exercises

Output market power

A monopolist can produce different versions of a good with different quality levels. The constant marginal cost of producing quality v goods is cv^2 with $c < 1$. The monopolist is selling to a continuum of consumers with types θ distributed uniformly on $[0, 1]$. The types reflect vertical heterogeneity in tastes: a type θ consumer gets utility $\theta v - p$ if she buys one unit of a quality v good at price p and zero utility if she does not buy. (Assume that consumers always buy at most one unit.)

- (a) Suppose first that the monopolist's quality level v is fixed. Solve for the monopolist's price and its profits as a function of c and v .
- (b) What quality level would the firm choose in the model of part (a) if v were a choice variable?
- (c) What quality level would a social planner choose if the social planner had the ability to choose both v and p ? Discuss how this compares with the outcome of part (b) and how we can think about this outcome in light of standard results on a monopolist's choice of product quality.

Input market power

A firm can produce a good with production function $f(x_1, x_2) = \log x_1 + \log x_2$. The output price is p and input prices are w_1 and w_2 , where all prices are fixed to the firm.

- (a) Find the input demand function of the producer.
- (b) Now suppose the firm has market power in input market, and the price vector of inputs is now $(w_1 + x_1^2, w_2 + 2x_2)$ (assume w_1 and w_2 are the same fixed number in part (a)). Write out the equations that input demand must satisfy and compare it with the answer in part (a).