



Stockholm
University

Department of Economics

Course name: **Antitrust and Regulation**

Course code: **EC7114**

Examiner: **Sten Nyberg**

Number of credits: **7,5 credits**

Date of exam: **Sunday 4 December 2016**

Examination time: **3 hours [09:00-12:00]**

Write your identification number on each answer sheet. Use the printed answer sheets for all your answers. Do not answer more than one question on each answer sheet.

Use one cover sheet per question. Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked. **No aids are allowed.**

The exam consists of **4** questions. Each question is worth **25** points, **100** points in total. For the grade E **45** points are required, for D **50** points, C **60** points, B **75** points and A **90** points.

Your results will be made available on your "My Studies" account (www.mitt.su.se) on November **16th** at the latest.

Good luck!

Question 1

Leniency programs provide incentives for firms in a cartel to reveal the cartel to competition authorities. Consider the following scenario. Two symmetric firms form a cartel and the collusive profit per firm is π^* and the competitive profit per firm is π . If no firm applies for leniency the probability that the cartel is revealed is w , and then both firms pay a fine F and damages D . If just one firm applies for leniency then it pays no fine, but it still has to pay damages. If both firms apply they pay $F/2$ in fines plus damages.

- a) Express this as a normal form game.
- b) Derive a condition for when applying for leniency is a dominant strategy.

Question 2

A natural monopoly is operating faces the inverse demand: $P = 10 - Q$ and its unit cost is 4. The firm knows both the demand and its cost but the regulator only knows the demand.

- a) The regulator considers using the Loeb – Magat scheme for regulating the monopoly. Describe how this scheme works and what the outcome of such a regulation is in terms of (i) efficiency and (ii) distribution of welfare.

Suppose the regulator instead uses a cost based regulation, $p(c) = a + bc$ with $a > 0$ and $b > 0$. Demand is constant and equal to one. The accounting cost of producing a unit of output is $c = \theta - e$, where θ is cost parameter, taking the values 3 and 5 with equal probability, and e is the firm's effort to reduce cost. The effort cost is e^2 . Only c is observable by the regulator.

- b) Determine the firm's optimal effort as a function of b .

The regulator maximizes $W = C.S. + \gamma\pi$ where C.S. is consumer surplus, π is firm profit and $0 < \gamma < 1$ is the weight on profit.

- c) Discuss (no need to solve) what the optimal b would be if $\gamma = 1$.

Question 3

A monopoly owns a network and uses it as an input to provide final goods to consumers. It can also sell network access to a competitive downstream industry producing an identical consumer good. The marginal cost of access is $c_A = 3$, the marginal cost of converting access to a final good is $c_C = 3$ for competing firms, and $c_M = 5$ for the monopolist. All marginal costs are constant, there are no fixed costs and the monopoly cannot be subsidized. The final good price is regulated and set to 10. Suppose the regulator sets a retail-priced based access price based on the "efficient component pricing rule" (ECPR).

- a) Discuss how this rule affects the incumbent's incentive to foreclose competition and whether it ensures efficient production downstream.
- b) What is the monopolist's opportunity cost providing access to downstream competitors?
- c) Calculate the access price, a , according to the ECPR.
- d) Suppose the final good price is not regulated, and (contrary to the assumption above) the incumbent has fixed costs that must be covered by revenues from sales of final goods or access. What can we then say about the optimal access price and the ECPR?

Question 4 (Essay question)

Explain Aghion and Bolton's model of exclusive dealing (the one where the entrant is exploited). Why is it rational for the buyer to sign an exclusive contract? How does uncertainty about the potential entrant's cost affect the outcome? To what extent does the model explain foreclosure?