



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:** Friday 1 December 2017

**Examination time:** 3 hours [15:00-18:00]

**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.**

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The exam consists of 4 questions, 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.

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Your results will be made available on your "My Studies" account 15 working days after the exam occasion, at the latest.

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**Good luck!**

**Question 1 (30p)**

Consider a horizontal merger between two firms, A and B, which does not give rise to any efficiencies. The competition authority has found that firms compete in prices and offer differentiated products. Moreover, all firms have a 40 percent mark-up (= Lerner index).

- The authority defines the relevant market as 4 symmetric firms. Calculate the pre-merger HHI, and the change in HHI induced by the merger.
- Suppose a 10 percent price increase reduces the hypothetical monopolist's demand by 15 percent. Does the authority's market definition pass the Critical Loss test?
- Suppose other firms will keep their prices constant, and that the diversion ratios between the merging parties are symmetric and equal to 1/3. Calculate the indicative price rise under the assumption that demand is linear.

**Question 2 (20p)**

Consider a market where there is a fixed demand for 1000 units and suppose a dominant firm is an unavoidable trading partner for 70% of the market. The incumbent's cost function is  $C = 900 + Q$ . Suppose the incumbent sets  $P = 10$  and offers a retroactive rebate of 20 % if customers buy all their services from it.

- Calculate the effective price for an entrant aiming to capture 30% of the market.
- Would this rebate scheme foreclose an equally efficient competitor?

**Question 3 (25p)**

A regulator faces a natural monopoly and considers different types of regulation.

- One drawback with a rate of return regulation is the so called Averch and Johnson effect. Describe briefly what this means.

Suppose the regulator chooses a linear incentive regulation of price:  $p(c) = a + bc$  with  $a > 0$  and  $0 < b < 1$ . Demand is constant and equals 1, and the production cost is  $c = \theta - e$ .  $\theta$  is a cost parameter taking the values 4 and 6 with equal probability, and  $e$  is the firm's effort to reduce cost, neither of which is observable by the regulator. The cost of effort is  $e^2$ .

- 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,  $\pi$  is firm profit and  $0 \leq \gamma \leq 1$  is the weight on profit.

- Suppose  $b = 0.5$  (which is optimal if  $\gamma = 0.5$ ). What is the expected rent,  $E(\Pi)$ , assuming the regulator sets  $a$  so that the inefficient firm breaks even? (Hint: Use the formula in the lecture notes. Alternatively, calculate  $a$ , given the break-even condition, derive the efficient firm's profit, and weigh this with the probability of having low cost).
- What would the optimal  $b$  be if  $\gamma = 1$ ? (No need to calculate, just explain).

**Question 4 (25p/Credit question)**

A strict price cap regulation provides optimal investment incentives but may leave large rents to the firm. Yardstick competition or franchise bidding could reduce rents.

- Carefully explain the idea behind yardstick regulation, and how it works.
- Explain the idea behind franchise bidding and how it works. Discuss the main points of Williamson's critique of franchise bidding.