

Practice problem set 25

Regulation under asymmetric info

This problem set constitutes recommended material for the relevant lab. The choice of tasks to be presented instructionally in every lab is in the discretion of the individual teacher. Students are expected to work on practice problems, however, are not required to submit written solutions. It is non-negotiable policy in this course to not provide hand-outs with the solutions of practice problem sets.

1. Consider the Baron & Myerson (1982) framework, where the regulator's problem is to provide sufficient incentives by choosing a price – subsidy combination, so that the monopolist would produce at maximum efficiency. The demand curve faced by the monopolist is $q = 100 - p$. The regulator knows that the industry is characterized by constant returns to scale and the unit cost of the monopolist can be either 2 or 4, each with probability 0.5.

- (a) Explain why the regulator cannot incentivize the monopolist if subsidy is forced to be zero.
- (b) Describe the optimal way for the regulator to provide incentives within the Baron & Myerson framework.

Final Exam – 2015

2. Consider the following regulation framework similar to Armstrong et al. (1994). The firm has an objective function $B = E(\Pi) - 0.5V(\Pi)$. The marginal cost in the industry is c and it is randomly distributed with average μ and variance σ^2 . The firm in this industry has two options: it can either invest an amount of 50 to reduce marginal cost by 1; or it can refrain from investment and keep marginal cost at c . In this setting, first the firm will decide whether to invest 50 or nothing, then c will be observed privately by the firm, then the regulator observes the final cost per unit but he is unable to tell if it includes investment or not.

- (a) What is the attitude of this firm towards risk? Explain.
- (b) What is the price rule used by the regulator in this model in order to influence the decision of the firm? Explain the variables.
- (c) Why is the regulator issuing a price rule and not just a single price?
- (d) This model is assumed to be a dynamic model. Write down and label the stages.
- (e) What is the objective for the regulator in this model? Write down specifically the problem that he tries to address and add any necessary conditions that the model requires for the objective to be valid.
- (f) In this model the IR condition is assumed to be binding. Explain what the IR is in this case and why it makes sense to assume that it is binding.

End-semester 2 exam – April 2016

3. Suppose two operators offer differentiated services and compete in the telecommunications market. Using reaction curves, analyze how a price cap imposed on one of the two firms affects the equilibrium. Discuss, in general, the advantages and disadvantages of price cap regulation.

UoL: 2006 zb / 2011 za

4. Under rate of return regulation, a firm that earns too high a rate of return must give some of it back to rate payers, but a firm that fails to earn the target rate of return bears the shortfall itself. Explain how this asymmetry affects a firm's incentive to innovate. Is rate of return regulation more or less appropriate for an industry undergoing technological change?

UoL: 2008 zb

5. "Price-cap regulation is more efficient than rate of return regulation". Discuss this statement, with reference to an economic analysis of the links between type of regulation, incentives of regulated firms to reduce costs, allocative efficiency, and productive efficiency.

UoL: 2002 zb / 2006 za