

Lecture Note 3

Salanié, B. (1997): Introduction, Chapters 2 and 5

Please answer the following questions:

Chapter 2:

1. Given a seller and consumer what is the:
 - first best solution
 - the second best optimum (under imperfect information)
2. What are the five properties of the optimal mechanism? What is meant by “informational rent”?

Chapter 5:

1. What is meant by “effort”? What is the “problem” with effort resulting in the moral hazard definition?
2. What is the first best situation and contrary the second best? How can the principal deal with the second-best situation?
3. Give a formal description of the “simple example”.

Exercise (see “wine seller” for solution structure):

In the Principal-Agent model, assume that the agents' utilities are given by $U = \theta_i q_i - t_i$, and that the principal has the utility function $W = t_i - S(q_i)$, for $i=1,2,3,4$ with $S' > 0$ and $S'' < 0$. Additionally, assume that θ may take four values, $\Theta = \{\theta_1, \theta_2, \theta_3, \theta_4\}$, with $\theta_1 - \theta_2 = \theta_2 - \theta_3 = \theta_3 - \theta_4 = \Delta\theta$ and respective probabilities v_1, v_2, v_3, v_4 such that $v_1 + v_2 + v_3 + v_4 = 1$. A direct revelation mechanism has the form $\{(t_1, q_1), (t_2, q_2), (t_3, q_3), (t_4, q_4)\}$.

Find:

- a) The incentive restrictions for each agent.
- b) The implementation conditions.
- c) Write the principal's optimization problem with the necessary restrictions.
- d) Find the second-best results in terms of $S'(q_i)$.
- e) The first-best result in terms of $S'(q_i)$.
- f) Compare the second-best results with the first-best results.