

Written Exam for the B.Sc. or M.Sc. in Economics summer 2015

Microeconomics B

Final Exam

10 June 2015

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by “eksamen på dansk” in brackets, you must write your exam paper in Danish.

This exam question consists of 3 pages in total

Problem 1

Consider a market for a good. There is perfect competition in the market which has a supply side characterized by the supply function $S(p)$, and a demand side characterized by the demand function $D(p)$, with both functions being continuously differentiable, with $D'(p)$ always strictly negative and $S'(p)$ always strictly positive.

The market is in equilibrium. The government then introduces a (very) small tax, on each unit of the good traded. In fact, the tax is so small, we may call it $dt > 0$.

- a) Please derive expressions for the tax incidence on the supply side and demand side, respectively, using as parameters:
 - the elasticity of demand with respect to price
 - the elasticity of supply with respect to price(Hint: Use the following equilibrium conditions:
 $D(p_d) = S(p_s)$
 $p_d = p_s + t$
where the price paid by customers is p_d , while the price received by sellers is p_s)
- b) Comment on the expressions.

Problem 2

Consider a private-ownership economy. Two consumers, Arnold and Brian, are born “today” and will have to consume “tomorrow”; today, there is no consumption, but they will be able to trade in contingent goods, as we will soon see.

The economy may end up in two possible states tomorrow. State 1 will occur with probability $(1-\pi)$, while state 2 occurs with probability π .

In state 1, Arnie will own 6 units of the consumption good, while Brian will own 4 units. In state 2, Arnie owns 1 unit of the consumption good, and Brian owns 4 units.

There are opportunities today for the two agents to trade in contingent goods, in markets characterized by perfect competition. Both agents have the utility function $u(x_1, x_2) = (1-\pi) \cdot \ln(x_1) + \pi \cdot \ln(x_2)$, with indices describing the future state in which the good is consumed.

- a) Identify the Walrasian market equilibrium, assuming for simplicity that $\pi = \frac{1}{2}$
- b) Comment on how markets change the distribution of risk in the economy.

Problem 3

The bar “Time Out” is a monopoly serving beer to students who are relaxing on Friday afternoons. The marginal costs of selling and serving a cold beer are 10 DKK. The lower the price, the more beers students will buy. If the price is set at 10 DKK, the students buy 1000 beers. At this price, the absolute value of the elasticity of demand with respect to price is 2, i.e. if there is a marginal price

increase of 1 %, the number of beers sold will fall by 2 %. For simplicity, we assume that fixed costs are zero.

- a) You are informed that the demand curve is linear. What price should the bar charge, how many beers are sold, and how much profit does the bar make?
- b) Suppose instead that you are informed that the demand side is characterized by constant elasticity of demand. What price should the bar charge, how many beers are sold, and how much profit does the bar make?
- c) Compare your answers in a) and b) and comment.

Problem 4

Stiglitz and Weiss have argued that moral hazard may cause rationing in the credit market, i.e. that when there is an excess demand for credit, banks may prefer saying no to potential customers at the current interest rate rather than increasing the interest rate they charge. Please explain the idea behind their argument.

Problem 5

Consider a lake with a high number of residents living in the area around the lake. Many of them enjoy eating fish which can be purchased at the price of 1 \$ (per fish) in the super-market. An alternative way of having fish for dinner is to go fishing in the lake (an activity which in itself provides neither utility nor disutility). To go fishing, however, requires the purchase of a fishing permit which costs 5 \$. If n residents go fishing, the total catch of fish will be $100 \cdot n^{1/2}$. For simplicity, we assume that there is no element of chance, so every resident will catch the same number of fish; likewise, we simplify by allowing the number of residents, as well as the catch of fish, to be real numbers.

- a) How many residents will, in equilibrium, choose to buy a permit and go fishing?
- b) Is the outcome efficient; and if not, how might an efficient outcome be ensured?

Problem 6

Findings in Experimental Economics have, in some ways, questioned the predictions of traditional neoclassical economic theory. This has given rise to Behavioral Economics.

- Provide some examples of how Behavioral Economics contradict the traditional neoclassical view on how economic agents make decisions.