

This exam has 33 points. There are six questions on the exam; you should work all of them. Half the questions are worth 5 points each and the other half are worth 6 points each.

Put your answers to the exam in a blue book or on blank sheets of paper.

Answer the questions using as much precision and detail as the time allows. Correct answers which are unsupported by explanations will not be awarded points. Therefore, even if you think something is “obvious,” do not omit it. If you omit anything, you will not get credit for it. You get credit for nothing which does not explicitly appear in your answer. If you have questions about the adequacy of an explanation of yours during the exam, ask me.

For the question involving a figure, you may either draw on the original figure, then remove it from the exam and include it with your answers; or you may redraw the figure on your answer sheet. If you choose the first option, write your first name on each page (to prevent confusion if the page gets separated from the rest of your exam).

Answer all of the following six questions.

1. **[6 points]** Show with a diagram that the following two statements are true:
 - (a) An unregulated monopolist may produce more pollution than is socially optimal.
 - (b) An unregulated monopolist may produce less pollution than is socially optimal.
2. **[6 points]** Draw the diagram typically used for analyzing simple Coasian bargaining situations. It should have an MEC curve and an MNPB curve. (What do “MEC” and “MNPB” mean? How are the diagram’s axes labeled and why are they labeled that way?)

Suppose pollution victims have the property right to clean air.

 - (a) What does the standard Coase Theorem predict will happen? Why?
 - (b) Now assume that if pollution victims’ incomes go up, their MEC curve changes.
 - i. When pollution victims’ incomes go up, is the pollution victims’ MEC curve likely to go up or to go down? Why?
 - ii. If the pollution victims’ MEC curve behaves as you predict when pollution victims’ incomes go up, would the economy still end up at the position you predicted in part (a) of this question? Why or why not?
3. **[6 points]** Contrast the efficiency of a tax and of a marketable permit scheme, using Figure 1.
4. **[5 points]** Define “contingent valuation” and describe one advantage it has over other valuation methods.
5. **[5 points]** What is the “polluter pays” principle? Is it always true?
6. **[5 points]** Answer *either* part (a) *or* part (b) *but not both*.
 - (a) Some extreme environmentalists hold a consequentialist philosophy and some do not. How could you tell which group a particular extreme environmentalist belonged to?
 - (b) Some extreme anti-environmentalists hold a consequentialist philosophy and some do not. How could you tell which group a particular extreme anti-environmentalist belonged to?

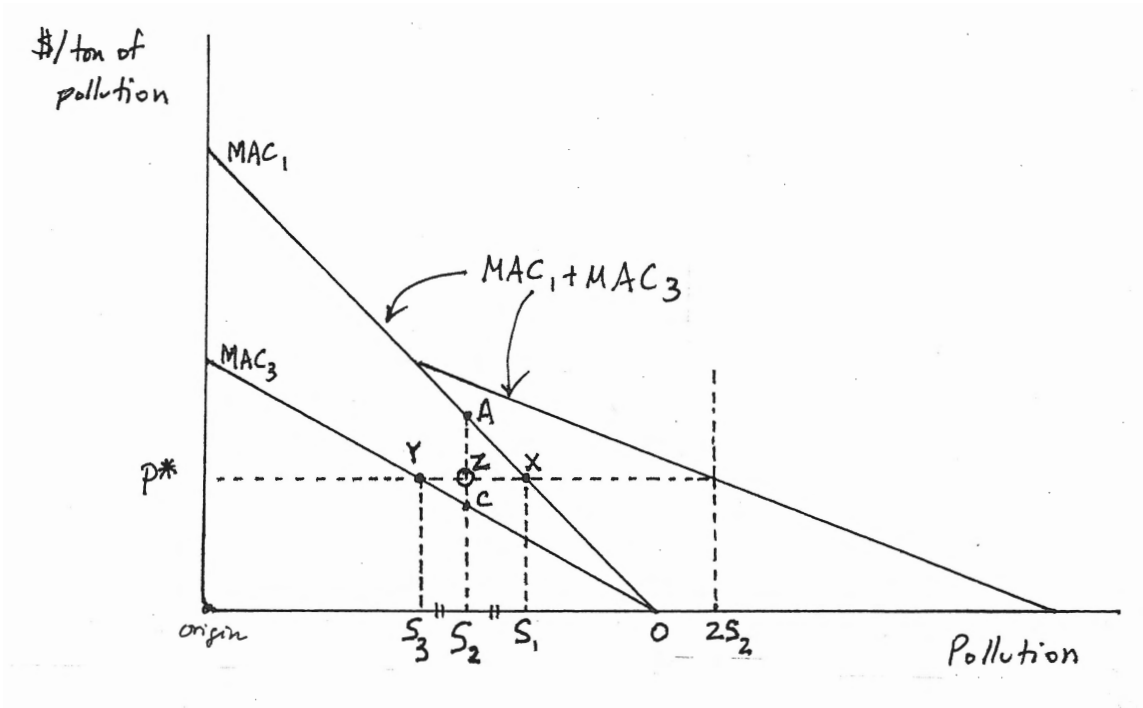


Figure 1

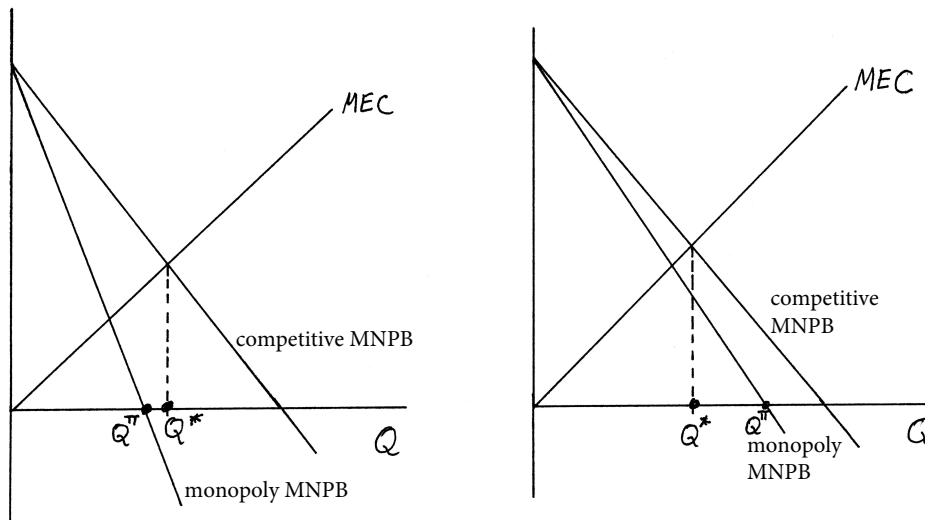


Figure 2

Answers to Exam 1, Econ. 5250, Fall 2019

1. [6 points] ch4; Spr 01 Ex1 Qu1 (no old answer)

The socially-optimal level of output Q , called Q^* , is located where marginal external cost MEC is equal to marginal net private benefit MNPB under perfect competition. The monopolist's output level, called Q^π , is located where the monopoly MNPB is zero (making NPB, net private benefit, a maximum).

MNPB is marginal revenue MR minus marginal cost MC (plus marginal consumer surplus).

When the firm is competitive, MR is equal to price and is equal to the (horizontal) demand curve.

When the firm is a monopolist, MR is less than price. The reason that the monopolist's MR is less than the competitive firm's MR is that when the monopolist increases Q , the monopolist has to lower price, which the competitive firm thinks it does not have to do because the competitive firm thinks the demand curve for its product is horizontal.

Since the monopolist's MR is below the competitive firm's MR, the monopolist's MNPB is below the competitive firm's MNPB. From Figure 2 you can see that whether Q^π is less than or greater than Q^* depends on just how much the monopolist's MNPB differs from the competitive MNPB, which is the MNPB that the social planner uses.

2. [6 points] ch5; Fall 16 Ex1 Qu3
 3. [6 points] ch 7, 8; Fall 12 Ex1 Qu4
 4. [5 points] ch10; Fall 14 Ex1 Qu5
 5. [5 points] ch11; Fall 09 Ex1 Qu5

6. **[5 points]** ch15; Fall 05 Ex1 Qu6