Public Economics (ECON 131)
Section #7: Externalities

Contents

Page

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1 Externalities

1.1 Key concepts

- **Externality:** Externalities arise whenever the actions of one party make another party worse or better off, yet the first party neither bears the costs nor receives the benefits of doing so.
- **Market failure:** A problem that causes the market economy to deliver an outcome that does not maximize efficiency.
- Private vs. social marginal cost and private vs. social marginal benefit
  - Graphical analysis of externalities
  - Understand which curve will shift and in what direction under different type of externalities
- Production vs consumption externalities
- **Internalizing an externality:** When either private negotiations or government action lead the price to the party to fully reflect the external costs or benefits of that party's actions.
- Coase Theorem (Part I and II)

1.2 Practice problems

1.2.1 Gruber Ch.05, Q.13

Suppose that demand for a product is $Q = 1,200 - 4P$ and supply is $Q = -200 + 2P$. Furthermore, suppose that the marginal external damage of this product is \$8 per unit.

(a) How many more units of this product will the free market produce than is socially optimal?

(b) Calculate the deadweight loss associated with the externality.

1.2.2 Gruber Ch.05, Q.14

The marginal damage averted from pollution cleanup is $MD = 200 - 5Q$*. The marginal cost associated with pollution cleanup is* $MC = 10 + Q$*.*

(a) What is the optimal level of pollution reduction?

(b) Show that this level of pollution reduction could be accomplished through taxation. What tax per unit would generate the optimal amount of pollution reduction?

1.2.3 Gruber Ch.05, Q.4

In the midwestern United States, where winds tend to blow from west to east, states tend to more easily approve new polluting industries near their eastern borders than in other parts of the state. Why do you think this is true?