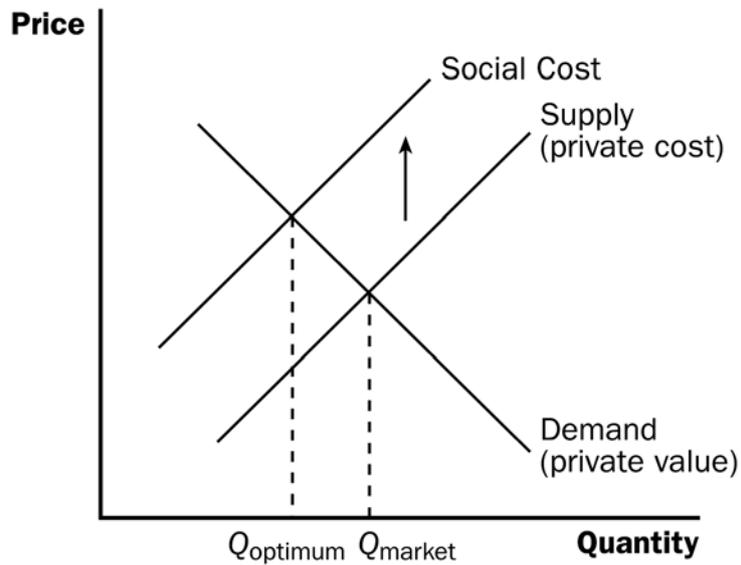


10

EXTERNALITIES

CHAPTER OUTLINE:

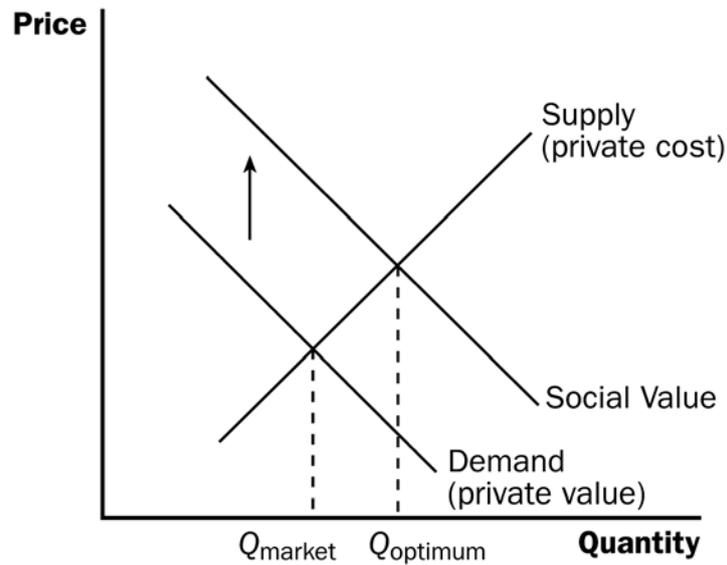
- I. Definition of externality: the uncompensated impact of one person's actions on the well-being of a bystander.
 - A. If the effect on the bystander is adverse, we say that there is a negative externality.
 - B. If the effect on the bystander is beneficial, we say that there is a positive externality.
 - C. Externalities cause markets to be inefficient, and thus fail to maximize total surplus.
- II. Externalities and Market Inefficiency
 - A. Welfare Economics: A Recap
 1. The demand curve for a product reflects the value of that product to consumers, measured by the price that buyers are willing to pay.
 2. The supply curve for a product reflects the cost of producing the product.
 3. In a free market, the price of a good brings supply and demand into balance in a way that maximizes total surplus (the difference between the total value to buyers and the total costs to sellers).
 - B. Negative Externalities
 1. Example: an aluminum firm emits pollution during production.
 2. Social cost is equal to the private cost to the firm of producing the aluminum plus the external costs to those bystanders affected by the pollution. Thus, social cost exceeds the private cost paid by producers.
 3. The optimal amount of aluminum in the market will occur where total surplus is maximized.
 - a. Total surplus is equal to the value of aluminum to consumers minus the cost (social cost) of producing it.
 - b. This will occur where the social cost curve intersects with demand curve.



4. Negative externalities lead markets to produce a larger quantity than is socially optimal.
5. This negative externality could be internalized by a tax on producers for each unit of aluminum sold.
6. Definition of internalizing an externality: altering incentives so that people take account of the external effects of their actions.

C. Positive Externalities

1. Example: education.
2. If there is a positive externality, the social value of the good is greater than the private value.
3. The intersection of the supply curve and the social-value curve determines the optimal output level.
4. Positive externalities lead markets to produce a smaller quantity than is socially optimal.
5. To internalize a positive externality, the government could use a subsidy.

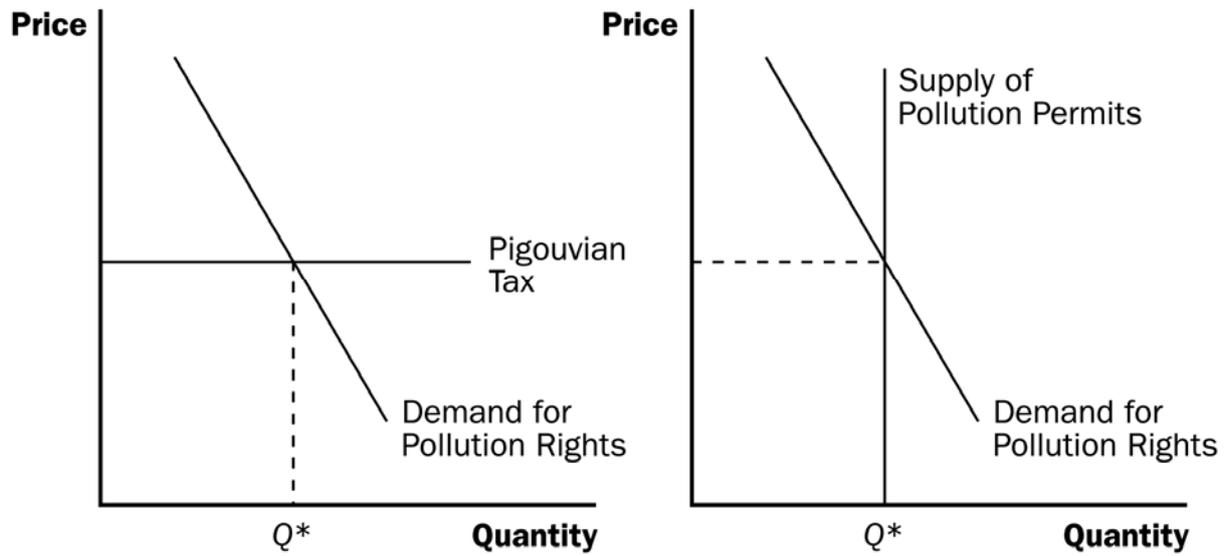


III. Private Solutions to Externalities

- A. We do not necessarily need government involvement to correct externalities.
- B. The Types of Private Solutions
 1. Moral codes and social sanctions.
 2. Charities
 3. Integrating different types of businesses
 4. Contracting between parties
- C. The Coase Theorem
 1. Definition of Coase theorem: the proposition that if private parties can bargain without cost over the allocation of resources, they can solve the problem of externalities on their own.
 2. Whatever the initial distribution of rights, the parties involved in an externality can solve the problem themselves and reach an efficient outcome where both parties are better off.
- D. Why Private Solutions Do Not Always Work
 1. Definition of transaction costs: the costs that parties incur in the process of agreeing and following through on a bargain.
 2. Coordination of all of the interested parties may be difficult so that bargaining breaks down. This is especially true when the number of interested parties is large.

IV. Public Policies toward Externalities

- A. When an externality causes a market to reach an inefficient allocation of resources, the government can respond in two ways: *command-and-control policies* and *market-based policies*.
- B. Regulation
 - 1. Externalities can be corrected by making certain behaviors either required or forbidden.
 - 2. Example: The Environmental Protection Agency (EPA) develops and enforces regulations aimed at protecting the environment.
- C. Pigovian Taxes and Subsidies
 - 1. Externalities can be internalized through the use of taxes and subsidies.
 - 2. Definition of Pigouvian tax: a tax enacted to correct the effects of a negative externality.
 - 3. Pigovian taxes are preferred by economists over regulations as a way to deal with pollution.
 - a. Pigovian taxes can reduce pollution at a lower cost to society.
 - b. Pigovian taxes give the factories incentives to develop cleaner technologies.
 - 4. Unlike other taxes, Pigouvian taxes correct incentives for the presence of externalities and thereby enhance economic efficiency.
- D. Tradable Pollution Permits
 - 1. Tradable pollution permits allow the voluntary transfer of the right to pollute from one firm to another.
 - a. A market for these permits will eventually develop.
 - b. The final allocation will be efficient in this new market, whatever the initial allocation.
 - 2. Tradable pollution permits and Pigovian taxes are similar in effect. In both cases, firms must pay for the right to pollute.
 - a. In the case of a Pigovian tax, the government basically sets the price of pollution and firms then choose the level of pollution (given the tax) that maximizes their profit.



- b. If tradable pollution permits are used, the government chooses the level of pollution (in total, for all firms) and firms then decide what they are willing to pay for these permits.
- c. In some circumstances, selling pollution permits may be better than levying a Pigouvian tax.