Session 6:

Market Failures

Session Description

Students will learn that market failures are caused by a problem within a market that can result in an inefficient use of resources. Policymakers may intervene in an attempt to correct market failures through laws that include regulations and/or programs to alleviate the market failure. Students will also learn that firms will not provide goods and services if they aren't able to earn a profit. If society values these goods and services, government may provide them.

Standards and Benchmarks (see page 6.8)

Talking Points

1. For markets to produce the allocatively efficient quantities of goods, the markets must be perfectly competitive with well-defined property rights.

2. A market failure occurs when the market fails to produce the allocatively efficient quantity of a good or service.

3. Economic power (e.g., a monopoly, as discussed in Session 7) leads to a higher price and a lower quantity of output than is efficient.

4. Economic power can be addressed by the government through regulation, such as the legal restrictions currently placed on utility companies, or antitrust laws, which attempt to limit collusion and restrict mergers that could significantly reduce competition.

5. Barriers to trade (or entry) lead to inefficiency because resources cannot move to their most-valued uses, resulting in too much output produced in some markets and too little produced in others. (NOTE: This is a principal argument for free trade between countries discussed in Session 15.)

6. Commonly owned or unowned resources tend to be inefficiently used because there is no owner to protect them and monitor that they be used in the most-valued way. This is often referred to as the "tragedy of the commons."

7. Governments often take de facto control of common property resources. For example, the Environmental Protection Agency (EPA) makes rules regarding the use of air sheds and waterways, and states control their deer and fish populations through the issuance of hunting and fishing licenses.

8. If property rights are defined for a resource but are not enforced or protected, the resource will be used inefficiently, as if it weren't owned in the first place.

9. Governments define and enforce property rights through the provision of a legal court system and police services.

10. Negative (positive) externalities are costs (benefits) generated from the production or consumption of a good that spill over to people other than the market participants, resulting in markets producing too much (too little) of the good.

11. Negative (positive) externalities can be corrected through government taxes/charges (subsidies).

12. Public goods and services are both
    - non-rival in consumption (one person's use or consumption of the good or service does not affect another person's ability to also consume the good or service) and
    - non-excludable (non-payers cannot be excluded from receiving the benefits of the good or service if it is provided).

13. Examples of public goods include light from a lighthouse, ecological benefits from the Amazon rainforest, levee protection, over-the-air radio/TV broadcasts, and a fireworks display.
    - Public goods offer benefits to people whether they pay for them or not. For example, ships benefit from the light provided by a lighthouse whether they pay to use the lighthouse or not.
    - Because people are able to benefit from public goods without paying, they have an incentive to be "free riders"—that is, to enjoy the benefits without making any payment.
    - Because suppliers are unable to collect payment from free riders to pay for public goods, it isn't profitable to produce these goods. As a result, markets (i) fail to produce the goods or (ii) produce a quantity that is less than efficient.

14. Governments often correct for this market failure by providing public goods. Governments provide many goods and services, but only some of them, such as national defense, are public goods as defined by the characteristics above. That is, only some of the goods governments provide are non-excludable and non-rival.

Resources

NOTE: See p. v for instructions on how to set up an Econ Lowdown account and assign resources found in the Resource Gallery to your students.

Video Q&A

Allow time for students to watch the video and answer the questions:

- Economic Lowdown Video Series—Externalities (15:00)
  https://www.econlowdown.org/resource-gallery/economic-lowdown-episode-5-externalities

Audio Q&A

Allow time for students to listen to the podcast and answer the questions:

- Economic Lowdown Audio Series—Public Goods (15:00)
  https://www.econlowdown.org/resource-gallery/economic-lowdown-audio-series-episode-17-public-goods

Reading Q&A

Allow time for students to read the essay and answer the questions:

- *Page One Economics*®: Economics and the Environment
  https://www.econlowdown.org/resource-gallery/economics-and-the-environment

Lessons

Allow time for students to complete the lessons:

- Lesson 6A: Negative and Positive Externalities (see p. 6.5 in this session)

- *Saving the Environment with Economic Ideas*
  - Lesson 1: Water Rights: Managing the Colorado Water System
    https://www.stlouisfed.org/education/saving-the-environment-with-economic-ideas
  - Lesson 2: Property Rights
    https://www.stlouisfed.org/education/saving-the-environment-with-economic-ideas

- Unintended Consequences
  https://www.stlouisfed.org/education/unintended-consequences

- *Seas, Trees, and Economies*
  - Lesson 5: Eggs-ternal Costs
    https://www.stlouisfed.org/education/seas-trees-economies-unit

- *High School Economics,* 3rd Edition (email acee@economicsarkansas.org to order this book)
    - Lesson 11: Not-So-Private Goods and Services
      Visuals and activities for this lesson can be found at
      https://highschooleconomics.councilforeconed.org/
    - Lesson 12: Third-Party Costs and Benefits
      Visuals and activities for this lesson can be found at
      https://highschooleconomics.councilforeconed.org/

Lesson 6A:

Negative and Positive Externalities

Objective

Students will understand what happens when the exclusive benefits and costs condition provided by property rights is violated.

Time Required

30 minutes

Materials

- Handout 1, one copy for the teacher and (if desired) one copy for each student

Procedure

1. Display *Handout 6A: Positive and Negative Externalities*. If desired, distribute a copy to each student.

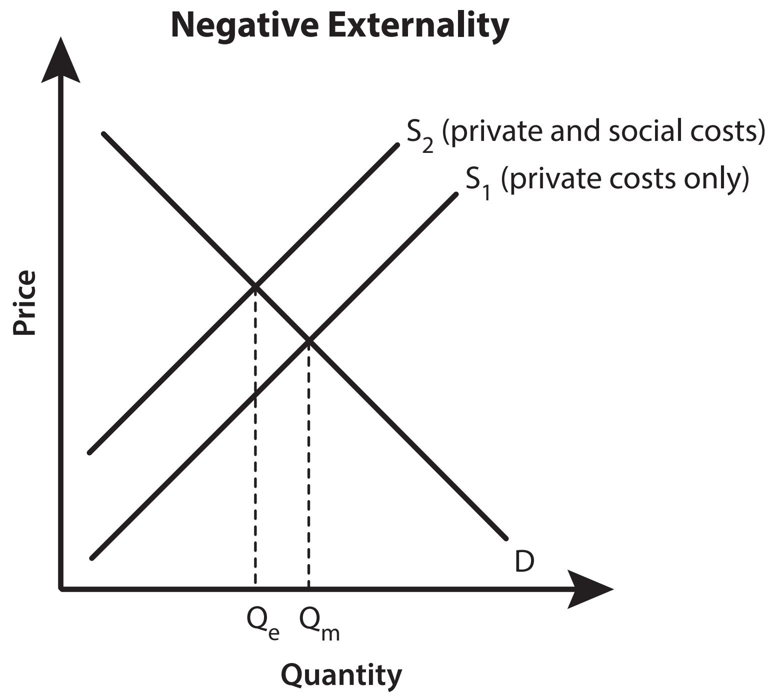
2. Remind students that allocative efficiency implies that resources will be allocated to the production of a good as long as the added value to society of producing one more unit of that good exceeds the added cost of producing one more unit of that good (or in other words, up to the point where the two curves, typically represented by demand and supply, cross). However, the demand curve represents only the value to the buyers in the market, while the supply curve represents only the cost to the sellers in the market. Therefore, if other people who are neither buyers nor sellers of a particular good are affected by the production or consumption of the good, then the demand and supply curves do not show the real value or cost of producing one more unit of the good to society as a whole.

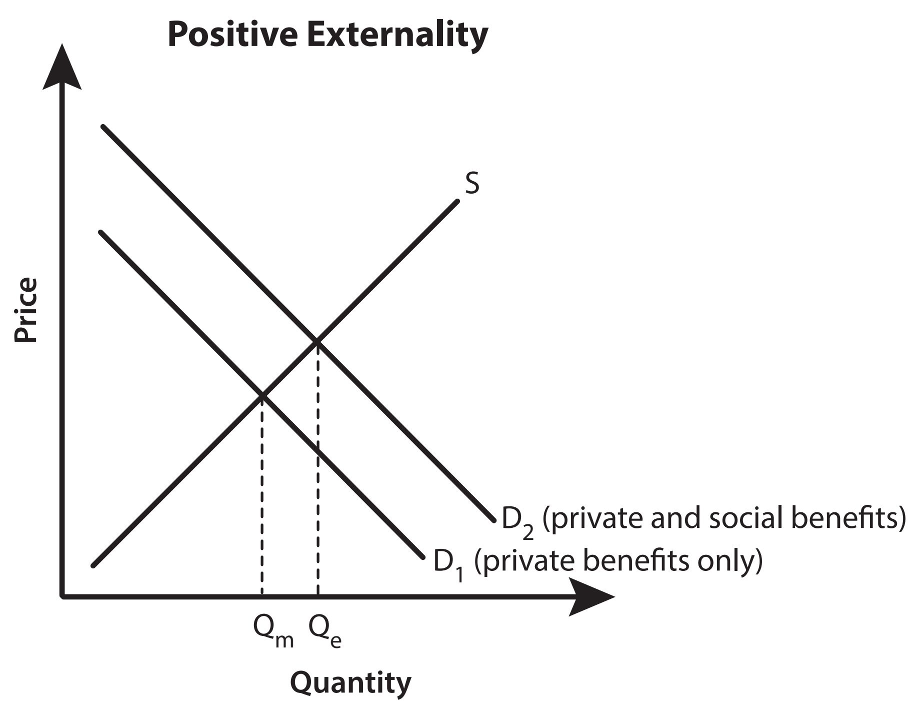
3. Explain that a negative externality exists when people other than those in the market for a good or service suffer costs due to the production or consumption of that good or service. In this case, the cost to society of producing the good is understated by the market because the cost doesn't include these "external" or "social" costs. As a result, the market produces the quantity Q_m based on the private benefits and private costs of the market participants, while the efficient amount of the good to produce for society is the quantity Q_e, where all costs are considered. Examples include pollution generated in the production of a good, secondhand smoke from the consumption of cigarettes, and domestic violence and drunk-driving costs associated with alcohol consumption.

4. Explain that a positive externality exists when people other than those in the market for a good or service enjoy benefits due to the production or consumption of that good or service. In this case, the benefit to society of producing the good is under- stated by the market because the price does not reflect the "external" or "social" benefits. As a result, the market produces the quantity Q_m based on the private benefits and private costs of the market participants, while the efficient amount of the good to produce is the quantity Q_e, where all benefits are considered. Examples include flu shots, flower gardens, research knowledge, and education.

5. Explain that the government can correct for negative externalities (i.e., get the market to produce at Q_e) by taxing producers an amount equal to the social costs (the vertical distance between S_1 and S_2). Similarly, the government can correct for positive externalities by subsidizing producers enough to drop their costs (and S) down to where it intersects demand at Q_e.

Handout 6A: Positive and Negative Externalities





Standards and Benchmarks

Arkansas Economic Standards

Content Standard E.1: Students will understand the impact of economic decision-making. This includes the exchange of goods and services; role of producers, consumers, and government in the marketplace; and growth, stability, and interdependence within a global economy.

Content Standard E.2: Students will understand the impact of economic decision-making. This includes considering the marginal costs and benefits of alternatives.

- **E.2.ECON.2:** Evaluate the roles of scarcity, incentives, trade-offs, and opportunity costs in decision making (e.g., PACED decision making model, cost/benefit analysis)
- **E.2.ECON.3:** Justify various economic solutions to problems affecting an individual or society using marginal cost and marginal benefit analysis.

Content Standard E.3: Students will understand the exchange of goods and services. This includes different allocation methods and changes in supply and demand, the role of producers, consumers, and government in a market economy; and the degree of competition among buyers and sellers in markets.

- **E.3.ECON.1:** Identify various allocation methods used in different circumstances, countries, and economies (e.g., price, auction, lottery, first come, first served, personal characteristics, a contest/performance-based, fiat, or a combination).
- **E.3.ECON.5:** Evaluate intended and unintended consequences of government policies created to improve market outcomes (e.g., regulatory, participatory, supervisory, price floor, price ceiling, minimum wage).