

# ECONOMICS 201: WEEK 7

## MARKET FAILURES

EXTERNALITIES

PUBLIC GOODS

INFORMATION PROBLEMS

# MARKET FAILURES

A **market failure** is a situation in which market forces push in such a way that individual decisions do not lead to socially desirable outcomes

- Externalities
- Public goods
- Imperfect information

# MARKET FAILURES

## This week:

- Externalities
  - Negative Externalities (Chapter 12)
  - Positive Externalities (Chapter 13)
- Public goods (Chapter 13)

## Next Week:

- Imperfect information (Chapter 16)

# EXTERNALITIES

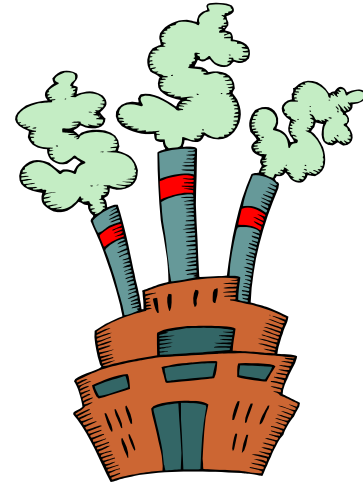
**Externalities are the effects of a decision on a third party that are not taken into account by the decision-maker**

- **Negative** externalities occur when the effects are detrimental to others
- **Positive** externalities occur when the effects are beneficial to others

# EXTERNALITIES AND MARKET INEFFICIENCY

## Negative Externalities

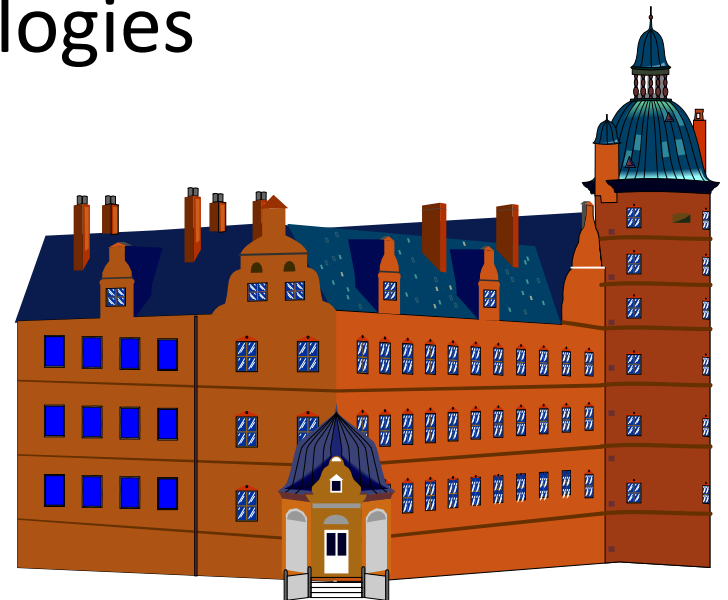
- Automobile exhaust
- Cigarette smoking
- Barking dogs (loud pets)
- Loud stereos in an apartment building



# EXTERNALITIES AND MARKET INEFFICIENCY

## Positive Externalities

- Immunizations
- Restored historic buildings
- Research into new technologies



# EXTERNALITIES AND MARKET INEFFICIENCY

A **market failure** occurs when economic activity produces externalities.

- A **market failure** means that market prices do not reflect the true cost of producing and consuming a good or service.
- The “**wrong**” prices mean that markets will produce the “**wrong**” quantities.
- And the market, if left alone, will not remedy the imbalance.

# NEGATIVE EXTERNALITIES

The **private cost** of producing a good is the cost paid *by the firm* that produces and sells it.

The **social cost** of a good is the total cost to *everyone* in the society, including people who do not produce or consume it.

**A negative externality occurs when the social cost of a good exceeds its private cost.**

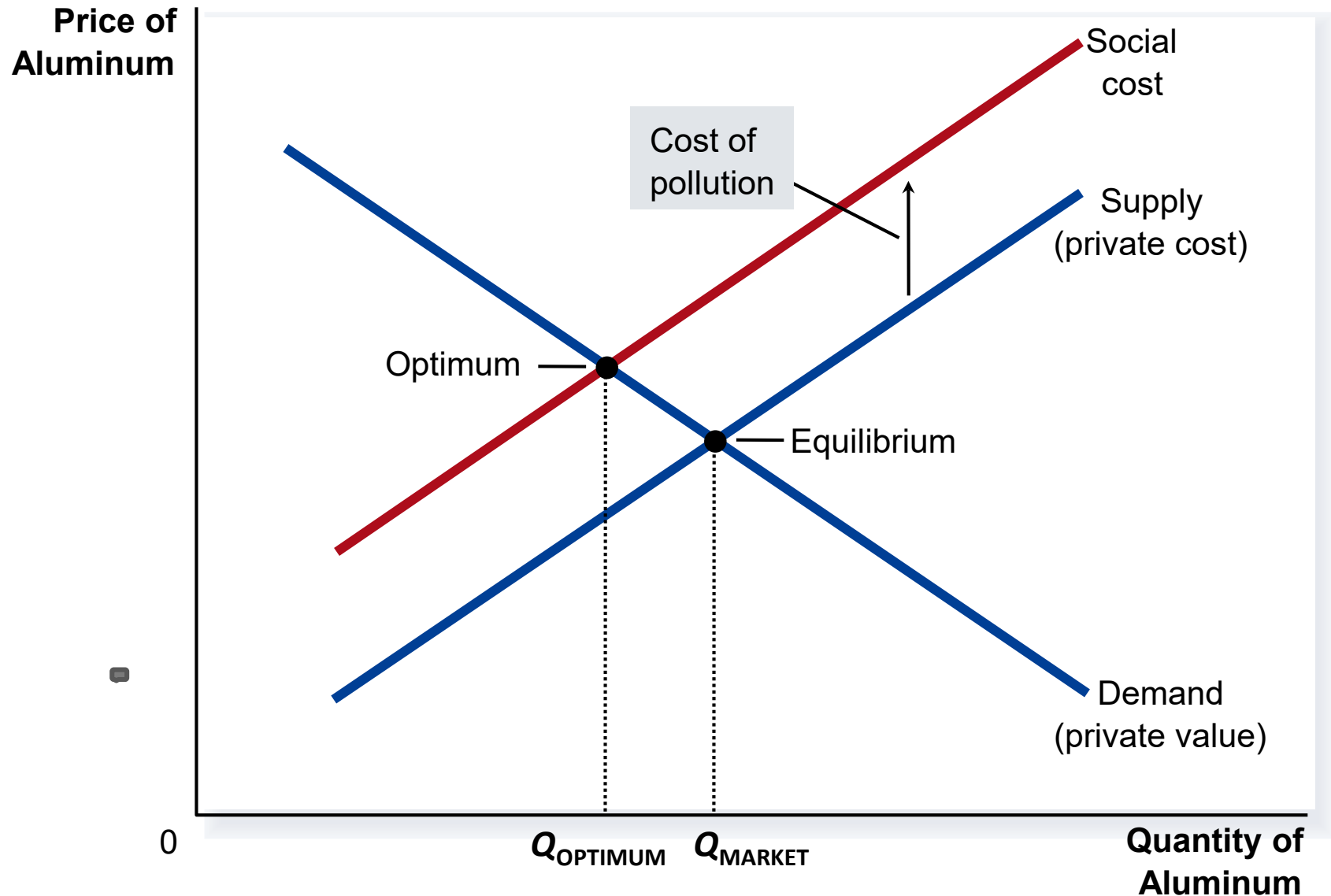


# EXTERNALITIES AND MARKET INEFFICIENCY

**Negative** externalities lead markets to produce a **larger** quantity than is socially desirable.

- Production costs do not include the costs of pollution abatement and treatment, so the firm produces too much.

# NEGATIVE EXTERNALITY: MARKET PRODUCES *MORE* THAN IS SOCIALLY OPTIMAL.



# NEGATIVE EXTERNALITY: EXAMPLE

- In the video, “Poisoned Waters,” producers of chicken do not pay for the proper disposal of the waste.
- Since the cost of producing the chicken is less, it can be sold for a lower price.
  1. The producers of the “cheap chicken” benefit from the larger quantity sold.
  2. The buyers of the “cheap chicken” benefit from the lower price in their grocery bills or at a chicken restaurant.

# NEGATIVE EXTERNALITY: EXAMPLE

- Who pays for the costs of the untreated chicken waste?
  1. Chicken producers who do pay for the disposal of chicken waste face a lower demand resulting in a higher price.
  2. Consumers who want to buy chicken produced in an environmentally safe manner have to pay higher prices.
  3. The pollution from the chicken waste affects the Chesapeake Bay and affects fish, shellfish and other sea life.

# NEGATIVE EXTERNALITY: EXAMPLE

- Who pays for the costs of the untreated chicken waste?
  4. Fishermen (and women) have to work harder to find enough fish to sell. So the price of seafood rises.
  5. Consumers who like seafood have to pay a higher price. Fish becomes an “expensive” item compared to the “cheap chicken.”
  6. Individuals who like to fish, water ski, or sail in the Chesapeake Bay are doing so in a polluted water.

# POSITIVE EXTERNALITIES

A **positive externality** occurs when the **social benefit** exceeds the **private benefit**.

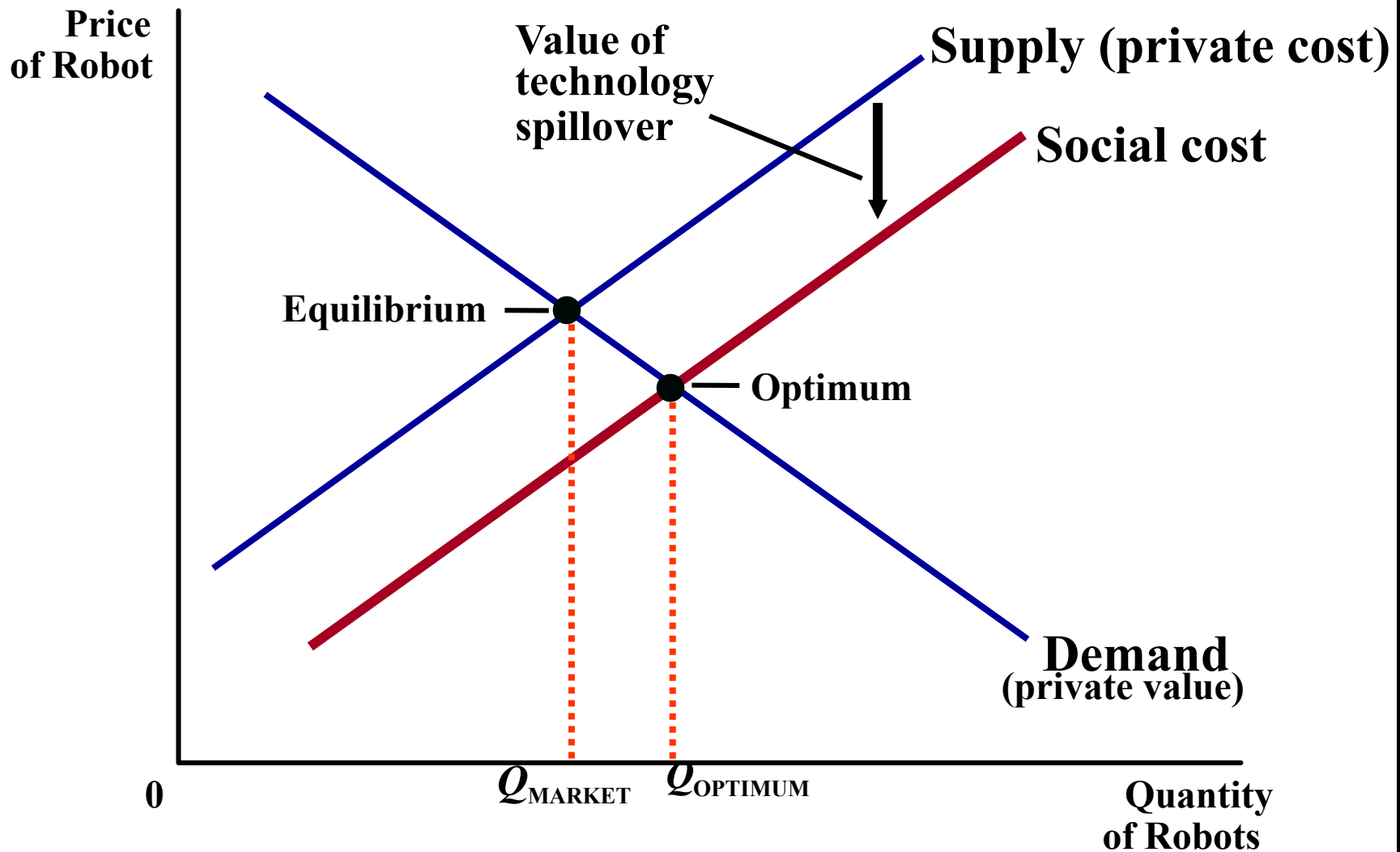
- The **private benefit** of consuming a good is benefit to the people who buy and consume it.
- The **social benefit** is its total benefit to everyone in the society.

# EXTERNALITIES AND MARKET INEFFICIENCY

**Positive** externalities lead markets to produce a **smaller** quantity than is socially desirable.

- The firm pays for the full cost of new technologies, but the technology also benefits other firms and/or the public.
- However, other firms and the public do not pay part of this cost.
- So the higher costs will lead the firm to produce less than the socially desirable amount.

# POSITIVE EXTERNALITIES





# POSITIVE EXTERNALITY

## EXAMPLE

**Education is a good example of a positive externality.**

- Education is beneficial to the person who is receiving the education. This is the **private benefit** from education.
- Education is also **beneficial to society**. Educated individuals are more likely to make positive contributions through their employment, taxes, or volunteer work, etc.
- For this reason, education (at least Kindergarten through 12<sup>th</sup> grade) is supported by public taxes.
- In some states, community colleges are also supported by public taxes providing lower costs for individual students (low tuition or, in some cases no tuition).

# PUBLIC GOODS & COMMON RESOURCES

# **WILL PRIVATE MARKETS PROVIDE US WITH DESIRABLE AMOUNTS OF:**

**Safe streets**

**Fire protection**

**Flood control**

**Safe food**

**Useful medicines**

**Historical preservation**

**Protection of streams, rivers,  
ocean habitats**

**Well-run prisons**

**Effective foreign policy**

**Clean drinking water**

**Clean air**

**Water for irrigation**

**National security**

**Good roads**

**Education**

**National Parks**

**Good television programs**

**Airport security**

**Fireworks on the fourth of  
July**

# MARKET FAILURE

**Public goods** and **common resources** have characteristics that typically lead to market failure.

**Market failure = when the market does not supply the optimal amount on its own.**

# NON-RIVAL VS. RIVAL GOODS

**Private goods are rival.**

- A good is **rival in consumption** if the same unit of the good cannot be consumed by more than one person at the same time.

**Public goods are non-rival.**

- A good is **nonrival** if the quantity available for other people does not fall when someone consumes it.

# RIVAL VS. NON-RIVAL CONSUMPTION

## **Rival Consumption:**

- Sandwich.
- Clothing.

## **Non-rival Consumption:**

- Street lights
- Radio broadcasts
- National defense

# EXCLUDABLE VS. NON-EXCLUDABLE GOODS

Private goods are **excludable**.

- A good is **excludable** if the supplier of that good can prevent people who do not pay from consuming it.

Public goods are **non-excludable**.

- When a good is **nonexcludable**, the supplier cannot prevent consumption by people who do not pay for it.

# EXCLUDABLE VS. NON-EXCLUDABLE CONSUMPTION

## Excludable Consumption:

- Toll Road

## Non-excludable Consumption:

- Public highway



# EXAMPLE OF PUBLIC GOODS

The term, “public good,” refers to the characteristics of the good or service.

Example: A **lighthouse**.



- The light from a **lighthouse** is **nonexcludable**. The light can be enjoyed by any ship whether or not they pay for it.
- The light also **non-rival**. One ship passing the lighthouse does not “use up” the light or prevent any other ship from benefitting from the light.

# THE FREE-RIDER PROBLEM

A *free-rider* is a person who receives the benefit of a good but avoids paying for it.

- True public goods are both non-excludable and non-rival.
- Public goods will not be provided by the market.

# **PRIVATE SUPPLY OF PUBLIC GOODS**

**Firms devise methods to reduce the free-rider problem.**

**The high costs associated with achieving excludability reduces the incentive for firms to develop and produce new products.**

# PUBLIC GOODS

Public goods are often provided by governments, because the private sector will not normally provide a good that can be consumed without being paid for.

However, in some cases the private sector will provide a **non-excludable, non-rival** good if it can figure out how to make money from doing so.

- In some cases, the firm can make a good “excludable.” Example: Cable TV.
- In other cases, the firm finds another way of making money from providing the good. Example: Broadcast TV paid for by advertising.

# COMMON RESOURCES

**Common resources are rival, but they are not excludable.**

- Examples: public parks, hiking trails on public land, beaches, fishing streams, lakes for boating recreation, etc.
- They are “rival” in the sense that the “consumption” of the good is not the same if too many people use them at the same time.
- But, they are not excludable, since they are available free of charge to anyone who wishes to use them.

# THE DIFFERENT KINDS OF GOODS

## Private Goods

- Are both excludable and rival.

## Public Goods

- Are not excludable and non-rival.

## Common Resources

- Are rival but non-excludable.

## Natural Monopolies

- Are excludable but non-rival.

Rival

Non-rival

Excludable

Pure Private Good

Marketable  
Public Goods

Non-  
Excludable

Common Resources

Pure Public Good