EE211

PRINCIPLES OF MICROECONOMICS

Topic 10:

Market Failures

Topics

- Externalities
- Public goods
- Market power - Monopoly
- Asymmetric information

EXTERNALITIES

What is externality?

- **Externality** is the uncompensated impact of one person's actions on the well-being of a bystander
  - **Negative externality**: the effect on bystanders is adverse
  - **Positive externality**: the effect on bystanders is beneficial

Negative Externality - Pollution

- Air pollution from a factory.
  - The firm does not bear the full cost of its production, and so will produce more than the socially efficient quantity.
- How govt may improve the market outcome:
  - Impose a tax on the firm equal to the external cost of the pollution it generates.

Negative Externalities

- In the presence of a negative externality, the **social cost** of a good includes
  - **private cost** – the direct cost to sellers
  - **external cost** – the value of the negative impact on bystanders
- The socially optimal ***Q*** maximizes welfare:
  - At any lower ***Q***, the value of additional unit exceeds its cost.
  - At any higher ***Q***, the social cost of the last unit is greater than its value.

Example: Market for Gasoline

Positive Externalities from Education

- A more educated population benefits society:
  - *lower crime rates*: educated people have more opportunities, so less likely to rob and steal
  - *better government*: educated people make better-informed voters
- People do not consider these external benefits when deciding how much education to “purchase”
- Result: market equilibrium quantity of education is too low.
- How govt may improve the market outcome:
  - subsidize cost of education

Positive Externalities

- In the presence of a positive externality, the **social value** of a good includes
  - **private value** – the direct value to buyers
  - **external benefit** – the value of the positive impact on bystanders
- The socially optimal ***Q*** maximizes welfare:
  - At any lower ***Q***, the social value of additional units exceeds their cost.
  - At any higher ***Q***, the cost of the last unit exceeds its social value.

Example: Vaccination

“Internalizing the Externality”

- **Internalizing the externality**: altering incentives so that people take account of the external effects of their actions
  - Imposing tax on goods that produce negative externalities
  - Subsidizing goods that produce positive externalities

PUBLIC GOODS

Characteristics of Goods

- A good is **excludable** if a person can be prevented from using it.
  - *excludable*: food, wi-fi internet
  - *not excludable*: FM radio signals, national defense
- A good is **rival in consumption** if one person's use of it diminishes others' use.
  - *rival*: food, clothes
  - *not rival*: information on billboards

The Different Kinds of Goods

Private goods: excludable, rival in consumption

example: food

Public goods: not excludable, not rival

example: national defense

Common resources: rival but not excludable

example: fish in the ocean

Natural monopolies: excludable but not rival

example: cable TV

Example: Road

- A road is which of the four kinds of goods?

Public Goods

- Public goods are goods that are non-excludable and non-rival.
- Public goods are difficult for private markets to provide because of the *free-rider problem*.
- **Free rider**: a person who receives the benefit of a good but avoids paying for it
  - If good is not excludable, people have incentive to be free riders, because firms cannot prevent non-payers from consuming the good.
- Result: The good is not produced, even if buyers collectively value the good higher than the cost of providing it.

Public Goods

- If the benefit of a public good exceeds the cost of providing it, govt should provide the good and pay for it with a tax on people who benefit.
- Problem: Measuring the benefit is usually difficult.
- Important public goods:
  - National defense
  - Road
  - Street lights
  - Knowledge created through basic research

Common Resources

- Like public goods, common resources are not excludable.
  - cannot prevent free riders from using
  - little incentive for firms to provide
  - role for govt: seeing that they are provided
- Additional problem with common resources: rival in consumption
  - each person's use reduces others' ability to use
  - role for govt: ensuring they are not overused
- Policy options:
  - Regulate use of the resource
  - Impose a corrective tax to internalize the externality

MONOPOLY

Introduction

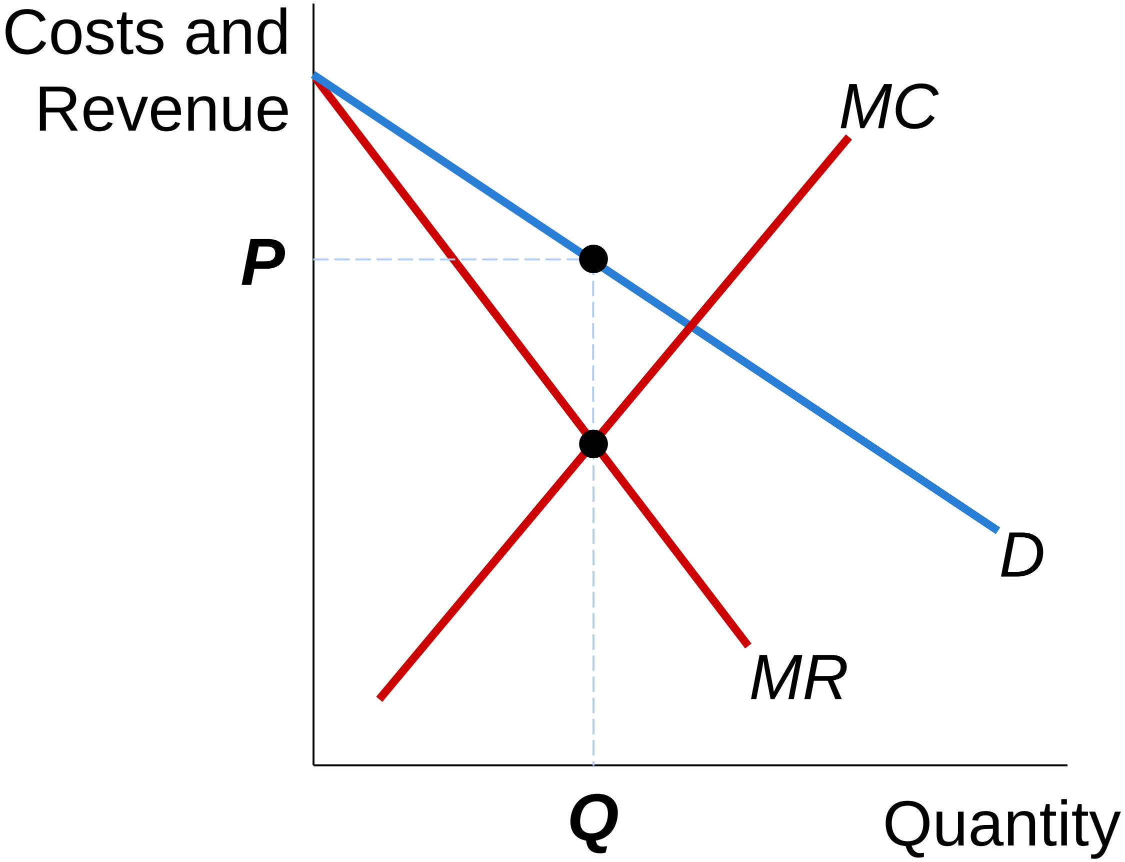
- A monopoly firm has **market power**, the ability to influence the market price of the product it sells. A competitive firm has no market power.

- The main cause of monopolies is **barriers to entry** – other firms cannot enter the market.

- Sources of barriers to entry:
  - A single firm owns a key resource.
  - The govt gives a single firm the exclusive right to produce the good.
  - Natural monopoly

Monopoly vs. Competition: Demand Curves

Monopolist's Profit-Maximization



A Monopoly Does Not Have an S Curve

A competitive firm

- takes ***P*** as given
- has a supply curve that shows how its ***Q*** depends on ***P***

A monopoly firm

- is a "price-maker," not a "price-taker"
- ***Q*** does not depend on ***P***; rather, ***Q*** and ***P*** are jointly determined by *MC*, *MR*, and the demand curve.

So there is no supply curve for monopoly.

Case Study: Monopoly vs. Generic Drugs

The Welfare Cost of Monopoly

- Recall: In a competitive market equilibrium, ***P*** = *MC* and total surplus is maximized.
- In the monopoly eq'm, ***P*** > *MR* = *MC*
  - The value to buyers of an additional unit (***P***) exceeds the cost of the resources needed to produce that unit (*MC*).
  - The monopoly ***Q*** is too low – could increase total surplus with a larger ***Q***.
  - Thus, monopoly results in a deadweight loss.

The Welfare Cost of Monopoly

ASYMMETRIC INFORMATION

Asymmetric Information

- **Information asymmetry**: a difference in two or more parties' access to relevant knowledge
- Two types:
  - **Hidden actions** – one person knows more than another about an action he or she is taking.
  - **Hidden characteristics** – one person knows more than another about the attributes of good he or she is selling.

Hidden Actions and Moral Hazard

- **Moral hazard**: the tendency of a person who is imperfectly monitored to engage in dishonest or otherwise undesirable behavior
  - Workers sometimes shirk their responsibilities because their employer cannot continually monitor their effort and performance.
  - Someone whose property is insured may not try as hard to protect it from theft/damage.

The Principal-Agent Problem

- **Agent**: a person who is performing a task on someone else's behalf (*e.g.,* a worker)
- **Principal**: is the person for whom this action is being performed (*e.g.,* an employer)
- Example - When the principal cannot perfectly monitor the agent's behavior, there is a risk ("hazard") that the agent may do something undesirable ("immoral").

How Principals May Respond

Better monitoring

Parents plant hidden cameras in the home to increase the chance of detecting undesirable behavior.

Higher wages

Employers pay workers **efficiency wages** (wages above the equilibrium level) to increase the penalty for being caught shirking.

Delayed payment

Firms delay payment (*e.g.*, year-end bonuses) to increase the penalty for being caught shirking.

Hidden Characteristics and Adverse Selection

Adverse selection arises when the seller knows more than the buyer about the good being sold.

Example 1: The market for used cars

- The seller knows more than the buyer about the quality of the car being sold.
- Owners of “lemons” more likely to put their vehicles up for sale.
- So buyers are more likely to avoid used cars.
- Owners of good used cars less likely to get a fair price, so may not bother trying to sell.

Hidden Characteristics and Adverse Selection

Example 2: Insurance

- Buyers of health insurance know more about their health than health insurance companies.
- People with hidden health problems have more incentive to buy insurance policies.
- So, prices of policies reflect the costs of a sicker-than-average person.
- These prices discourage healthy people from buying insurance.

In both examples, the information asymmetry prevents some mutually beneficial trades.

Market Responses to Asymmetric Information

Signaling: action taken by an informed party to reveal private information to an uninformed party

- Individual selling a good used car provides all receipts for work done on car.
- Firms spend huge sums on advertising to signal product quality to buyers.
- Highly competent workers get college degree to signal their quality to employers.

Screening: action taken by an uninformed party to induce informed party to reveal private information

- Health insurance company requires physical exam before selling policy.
- Buyer of a used car requires inspection by a mechanic.