Masaryk University

Microeconomics 1

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Lecture

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Public Goods and Common Resources

Chapter 11

In this chapter, look for the answers to these questions

- What are public goods?
  What are common resources?
  Give examples of each.
- Why do markets generally fail to provide the efficient amounts of these goods?
- How might the government improve market outcomes in the case of public goods or common resources?

Introduction

- We consume many goods without paying: parks, national defense, clean air & water.
- When goods have no prices, the market forces that normally allocate resources are absent.
- The private market may fail to provide the socially efficient quantity of such goods.
- One of the Ten Principles from Chapter 1:

  Governments can sometimes improve market outcomes.

Important Characteristics of Goods

- A good is **excludable** if a person can be prevented from using it.
  - *Excludable*: fish tacos, wireless Internet access
  - *Not excludable*: AM/FM radio signals, national defense
- A good is **rival in consumption** if one person's use of it diminishes others' use.
  - *Rival*: fish tacos
  - *Not rival*:
    An MP3 file of RHCP's latest single

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

Club goods: excludable but not rival

Example: cable TV

ACTIVE LEARNING 1

Categorizing roads

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

ACTIVE LEARNING 1

Answers

- Rival in consumption? Only if congested.
- Excludable? Only if a toll road.

<u>Four possibilities:</u>

Uncongested non-toll road: public good

Uncongested toll road: club good

Congested non-toll road: common resource

Congested toll road: private good

The Different Kinds of Goods

- This chapter focuses on public goods and common resources.
- For both, externalities arise because something of value has no price attached to it.
- So, private decisions about consumption and production can lead to an inefficient outcome.
- Public policy can potentially raise economic well-being.

Public Goods

- 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.
- **Cost-benefit analysis**: a study that compares the costs and benefits of providing a public good
- Cost-benefit analyses are imprecise, so the efficient provision of public goods is more difficult than that of private goods.

Some Important Public Goods

- National defense
- Knowledge created through basic research
- Fighting poverty

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

The Tragedy of the Commons

- A parable that illustrates why common resources get used more than is socially desirable.
- Setting: a medieval town where sheep graze on common land.
- As the population grows, the # of sheep grows.
- The amount of land is fixed,
  the grass begins to disappear from overgrazing.
- The private incentives (using the land for free) outweigh the social incentives (using it carefully).
- Result: People can no longer raise sheep.

The Tragedy of the Commons

- The tragedy is due to an externality:
  Allowing one's flock to graze on the common land reduces its quality for other families.
- People neglect this external cost, resulting in overuse of the land.

ACTIVE LEARNING 2

Policy options for common resources

- What could the townspeople (or their government) have done to prevent the tragedy?
- Try to think of two or three options.

ACTIVE LEARNING 2

Answers

- Impose a corrective tax on the use of the land to “internalize the externality.”
- Regulate use of the land (the “command-and-control” approach).
- Auction off permits allowing use of the land.
- Divide the land, sell lots to individual families; each family will have incentive not to overgraze its own land.

Policy Options to Prevent Overconsumption of Common Resources

- Regulate use of the resource.
- Impose a corrective tax to internalize the externality.
  - Example: hunting & fishing licenses, entrance fees for congested national parks
- Auction off permits allowing use of the resource.
  - Example: spectrum auctions by the U.S. Federal Communications Commission
- If the resource is land, convert to a private good by dividing and selling parcels to individuals.

Some Important Common Resources

- Clean air and water
- Congested roads
- Fish, whales, and other wildlife

CASE STUDY:

"You've Got Spam!"

"Spam" email is named after everyone's favorite delicacy.

- Some firms use spam e-mails to advertise their products.
- Spam is *not excludable*: Firms cannot be prevented from spamming.
- Spam is *rival*: As more companies use spam, it becomes less effective.
- Thus, spam is a common resource.
- Like most common resources, spam is overused – which is why we get so much of it!

CONCLUSION

- Public goods tend to be under-provided, while common resources tend to be over-consumed.
- These problems arise because property rights are not well-established:
  - Nobody owns the air, so no one can charge polluters. Result: too much pollution.
  - Nobody can charge people who benefit from national defense. Result: too little defense.
- The govt can potentially solve these problems with appropriate policies.

Summary

- A good is excludable if someone can be prevented from using it. A good is rival in consumption if one person's use reduces others' ability to use the same unit of the good.
- Markets work best for private goods, which are excludable and rival in consumption. Markets do not work well for other types of goods.

Summary

- Public goods, such as national defense and fundamental knowledge, are neither excludable nor rival in consumption.
- Because people do not have to pay to use them, they have an incentive to free ride, and firms have no incentive to provide them.
- Therefore, the government provides public goods, using cost-benefit analysis to determine how much to provide.

Summary

- Common resources are rival in consumption but not excludable. Examples include common grazing land, clean air, and congested roads.
- People can use common resources without paying, so they tend to overuse them. Therefore, governments try to limit the use of common resources.