

# ECO2011 Basic Microeconomics

Mankiw Chapter 11 (Public Goods and Common Resources)

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# Motivation

- 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
- ‘Governments can sometimes improve market outcomes’



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# The Different Kinds of Goods

## ■ Excludability

- Property of a good whereby a person can be prevented from using it
- *Excludable*: fish tacos, wireless Internet access
- *Not excludable*: radio signals, national defense

## ■ Rivalry in consumption

- Property of a good whereby one person's use diminishes other people's use
- *Rival*: fish tacos
- *Not rival*: An MP3 file of Lady Gaga's latest single

# The Different Kinds of Goods

- Private goods
  - Excludable & Rival in consumption (food)
- Public goods
  - Not excludable & Not rival in consumption (national defense)
- Common resources
  - Rival in consumption & Not excludable (fish in the ocean)
- Club goods
  - Excludable & Not rival in consumption (cable TV)

# The Different Kinds of Goods

|             |     | Rival?  |  |
|-------------|-----|---|--|
|             |     | Yes   | No   |
| Excludable? | Yes | <p>Private Goods</p> <ul style="list-style-type: none"><li>• Ice-cream cones</li><li>• Clothing</li><li>• Congested toll roads</li></ul>                | <p>Club Goods</p> <ul style="list-style-type: none"><li>• Fire protection</li><li>• Cable TV</li><li>• Uncongested toll roads</li></ul>            |
|             | No  | <p>Common Resources</p> <ul style="list-style-type: none"><li>• Fish in the ocean</li><li>• The environment</li><li>• Congested nontoll roads</li></ul> | <p>Public Goods</p> <ul style="list-style-type: none"><li>• Tornado siren</li><li>• National defense</li><li>• Uncongested nontoll roads</li></ul> |

# 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
  - Very expensive public good
  - \$748 billion in 2014
- Basic research
  - General knowledge
  - Subsidized by government
  - The public sector fails to pay for the right amount and the right kinds

# Some Important Public Goods

- Antipoverty programs financed by taxes
  - Welfare system (Temporary Assistance for Needy Families program, TANF)
    - Provides a small income for some poor families
  - Food stamps (Supplemental Nutrition Assistance Program, SNAP)
    - Subsidize the purchase of food for those with low incomes



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- Government housing programs
  - Make shelter more affordable



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# Common Resources

- Common resources are not excludable
  - Cannot prevent free riders from using
  - Little incentive for firms to provide
  - Role for government: seeing that they are provided
- Common resources: rival in consumption
  - Each person's use reduces others' ability to use
  - Role for government: ensuring they are not overused

# 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.

# 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.

# Discussion Question

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



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# Discussion Questions

# 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



# Examples of Common Resources

- Clean air and water
  - What problem?
  - How to solve the problem?
- Congested roads
  - What problem?
  - How to solve the problem?
- Fish, whales, and other wildlife
  - What problem?
  - How to solve the problem?



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# Case Study “You’ve Got Spam!”

- 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!



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# Importance of Property Rights

- 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 various policy options.

# Can You Answer the Following 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?

End