

Public goods

EE211

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.
- **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*: 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 Kanye West'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

Rival in consumption Non-rival in consumption

Excludable	<u>Private goods</u> <ul style="list-style-type: none"> • Wheat • Bathroom fixtures 	<u>Artificially scarce goods</u> <ul style="list-style-type: none"> • Pay-per-view movies • Computer software
	<u>Common resources</u> <ul style="list-style-type: none"> • Clean water • Biodiversity 	<u>Public goods</u> <ul style="list-style-type: none"> • Public sanitation • National defense
Non-excludable		

Public Goods

A **public good** is the exact opposite of a private good: it is a good that is both nonexcludable and nonrival in consumption. Here are some other examples of public goods:

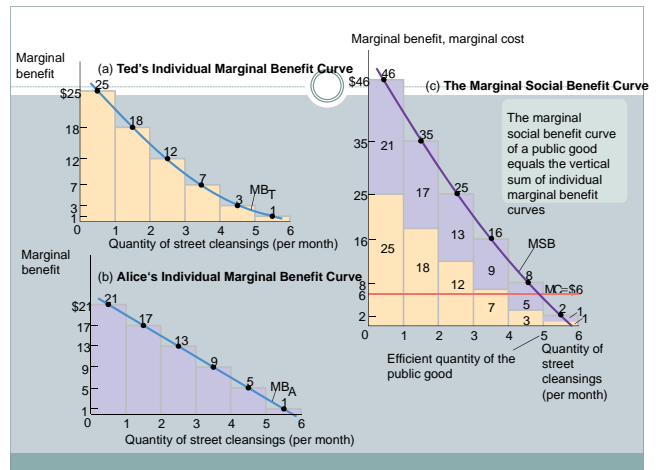
- **Disease prevention**: When doctors act to stamp out the beginnings of an epidemic before it can spread, they protect people around the world.
- **National defense**: A strong military protects all citizens.
- **Scientific research**: More knowledge benefits everyone.

- 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.

- If the benefit of a public good exceeds the cost of providing it, government 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.

Providing Public Goods

- Because most forms of public good provision by the private sector have serious defects, they must be provided by the government and paid for with taxes.
- How much of a public good should be provided?
- The marginal social benefit of an additional unit of a public good is equal to the *sum* of each consumer's individual marginal benefit from that unit. At the efficient quantity, **marginal social benefit equals marginal cost.**



Providing Public Goods

- No individual has an incentive to pay for providing the efficient quantity of a public good because each individual's marginal benefit is less than the marginal social benefit.
- This is a primary justification for the existence of government.

Cost-Benefit Analysis

- Governments engage in **cost-benefit analysis** when they estimate the social costs and social benefits of providing a public good.
- Although governments should rely on *cost-benefit analysis* to determine how much of a public good to supply, doing so is problematic because individuals tend to overstate the good's value to them.

Sources:

- Krugman, P. and Robin Wells (2008)
- Mankiw, N.G. (2012)