

Public Goods and Common Resources

Chapter 11

Hussain Hadah

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Introduction

Markets aren't perfect

- As we saw in chapter 10, markets fail sometimes
- In this chapter, we will go over another market failure
- Some services are provided to us, and we enjoy, that people would not pay for it
- Nature, beaches, lakes, oceans, parks and parades are all examples of things that are provided to us and we do not pay a fee to enjoy the benefit
- Free markets work under the condition that goods and services have a price
- When goods are free, the market forces will not work

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Sources of Market Failures

1. Externalities
2. Imperfect Information
3. Public goods
4. Market power

When good don't have a price

In this chapter, we will go over the problem which is caused by goods not having a price

When goods do not have a price, private markets fail to reach an efficient equilibrium

The government would intervene in these circumstances to correct the market failure and increase the economic well-being

The Different Kinds of Goods

Different types of goods

When we want to think about the different types of goods in the economy, we need to understand two terms:

1. **Excludability**: If people can be prevented from using a good, the good is excludable. If it is impossible to exclude a good, it is not excludable.
2. **Rivalry in consumption**: If one person's use of a unit of a good reduces another person's ability to use it, the good is rival in consumption. If one person's use does not diminish another person's use, the good is not rival in consumption.

Different types of goods (cont.)

Figure 1 Four Types of Goods

Goods can be grouped into four categories according to two characteristics: (1) A good is *excludable* if people can be prevented from using it. (2) A good is *rival in consumption* if one person's use of the good diminishes other people's use of it. This diagram gives examples of goods in each category.

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

Public Goods

The free-rider problem

- Consider the town of Smalltown, U.S.A
- The 500 citizens of Smalltown value the Fourth of July fireworks at \$10 each
- The benefit from the fireworks is \$5,000
- The cost of the fireworks is \$1,000, making it efficient for Smalltown to have the celebration

Will the private market produce an efficient outcome?

The answer is probably not

- Zoe is an event planner that wants to sell tickets to firework events
- No one is buying tickets from Zoe because they can see the fireworks without tickets
- Fireworks are not excludable, people have the incentive to free-ride
- A *free rider* is a person who receives the benefit of a good without paying for it

The free-rider problem (cont.)

- Because people do not have an incentive not to be free riders, the market for the fireworks will fail
- The market fails because of externalities. The fireworks have external benefits to those watching them, and private costs to Zoe. Zoe fails to internalize the external benefits and even though the fireworks are socially desirable, Zoe decides to not put on the fireworks display---an inefficient outcome

The solution to the problem is obvious

- The local government can intervene and sponsor the event
- The government can raise everyone's taxes by \$2 and pay Zoe the money needed
- In this case, Zoe will get her costs of \$1,000 covered
- Citizens end up paying \$2 instead (less than what they value the fireworks at)
- Smalltown reaches an efficient outcome!

Can you think of a free-riding example from your school life?

Important public goods

National defense

Basic reserach

Fighting poverty

Cost-benefit Analysis

It is not easy to carry out a cost-benefit analysis

- In our previous example, the government knew what was the cost of the fireworks and what was the benefit to the citizens
- It is not always that clear what are the costs and benefits of a decision

Example: The government is considering building a new highway

- The government should compare the cost of the highway to the benefits of it
- How can the government know how much people value the new highway?
- Asking people?
 - Those that use the highway will exaggerate the benefit
 - Those that are hurt will exaggerate the cost of the highway
- When we conduct a cost-benefit analysis, it will be an approximation of the costs and benefits

Common Resources

Defining common resources

- Like public goods, common resources are not excludable
- Unlike public goods, common resources are rival in consumption
- So, people cannot be stopped from consuming a common resource but when they consume more of it, someone else has less to consume

Example: Hunting and fishing

Common resources causes a new market failure called the *Tragedy of the Commons*

The Tragedy of the Commons

- Consider an example where a town's only source of food is fish from a lake
- No one owns the lake---owned collectively by the whole town---and everyone in town needs to fish to survive
- Anyone can fish for free and there is an unlimited supply of fish
- Everyone in town is happy
- One day, a new type of fish was introduced to the lake that restricted the supply of fish (no longer unlimited)
- As the number of people keeps increasing, the stock of fish will decrease
- At some point, the lake will have no more fish and fishing will be impossible

What caused this problem? Why did people fish until there was no more fish left?

- Social and private incentives differ

The Tragedy of the Commons (cont.)

- To keep fishing at a level that would conserve the stock of fish requires collective action by the whole town
- If all the citizens acted together, they will fish at a level that does not deplete the number of fish
- Since no one citizen has the incentive to stop fishing, there will be no more fish to eat
- The Tragedy of the Commons is caused by a negative externality
- If I fish more, I affect the number of fish someone else might fish
- Because people neglect the cost from negative externalities, the town will end up with an inefficient outcome

Can we solve The Tragedy of the Commons?

Yes! The government can either restrict the number of fish every person can fish or tax how much a person fish

Some Important Common Resources

1. Clean Air and Water
2. Congested Roads
3. Fish, Whales and Other Wildlife