

ECON 101: Principles of Economics I

Lecture Note 9

University of Michigan at Ann Arbor

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Lecture 9: Types of Goods

Wednesday, October 19, 2022 11:29 AM

Characteristics of Goods

Goods can be classified according to two attributes:

- **Excludable** - the **supplier** of that good can **prevent** people who do **not pay** from consuming it.
- **Rival in consumption** - the same unit of the good **cannot be consumed** by **more than one person** at the same time. (Ex: a seat can only have one person sit) After consume it, it is gone, unavailable.

	Rival in Consumption	Non-rival in Consumption
Excludable	Private Goods Beef Houses	Artificially Scarce Goods Cable Television Digital music
Non-excludable	Common Resources Clean Water Fish	Public Goods National Defense Snow Removal

* Clean water and clean air are common resources

** Artificially Scarce Good: price of the product creates the scarce

How does the characteristic affect the market's allocation?

When goods are **nonexcludable**:

- Consumers **do not have to pay producers** for the good or service
- Therefore some will choose to avoid payment
- **Free-rider problem**

When goods are **nonrival in consumption**:

- There are two different **marginal costs** to consider:
 1. The marginal cost of **producing another unit**:
 - This is the typical marginal cost that we consider
 2. The marginal cost of **giving another person access to the same unit of the good**
 - This marginal cost is **zero** for goods that are **nonrival** in consumption.
 - This implies that once a unit is produced, everyone should have free access to the good, since it is costless to provide access. (Effectively, the supply curve for access to a unit of the good is perfectly elastic at a price of zero.)

Public Goods: How much of a public good should be provided?

Nonexcludable and nonrival in consumption

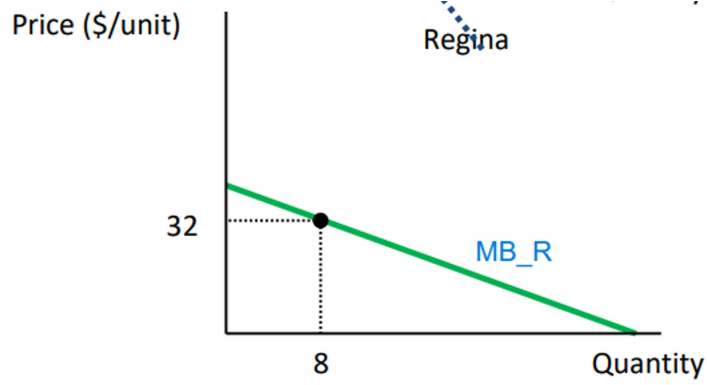
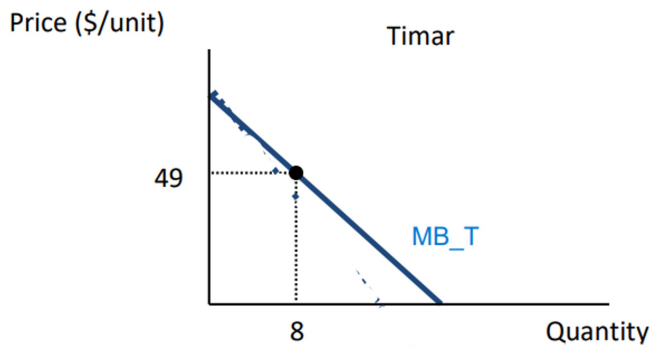
As more individuals enjoy the same unit of a public good, the **marginal benefit** of that unit to society **increases**. Thus the social marginal benefit of an additional unit of a public good is equal to the sum of each consumer's individual marginal benefit from that unit.

At the **efficient quantity**:

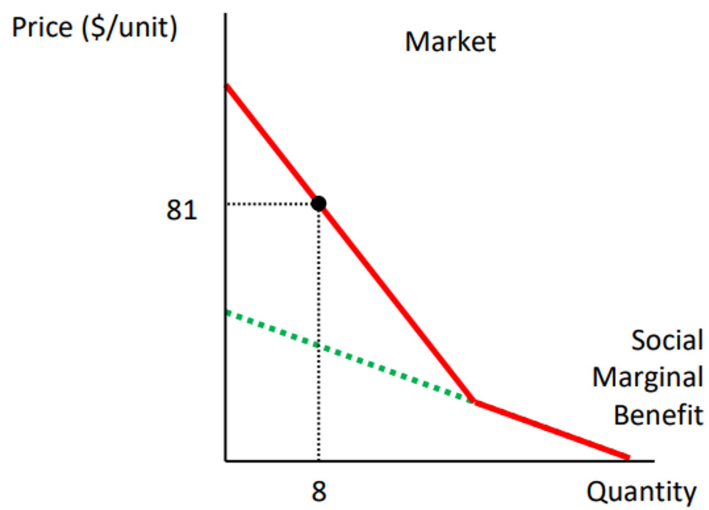
- **The social marginal benefit equals the marginal cost.**

Example of public good: Firework Show
Quantity = number of fireworks in the show

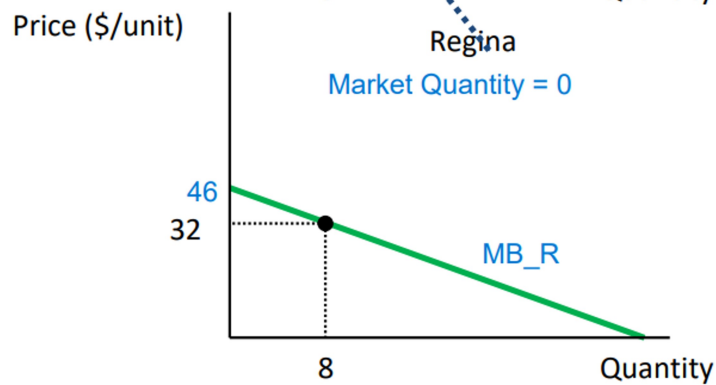
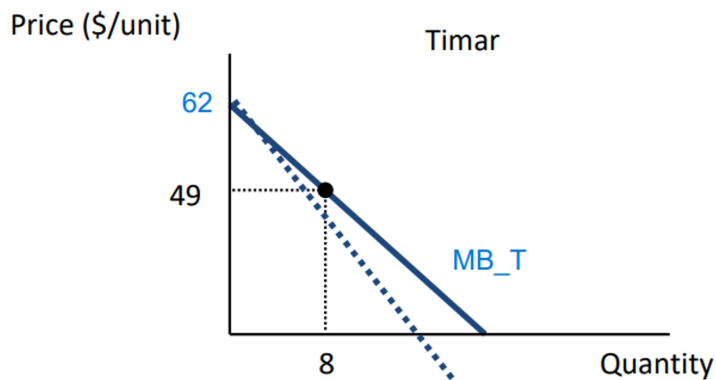
* Simplifying assumption: suppose only two people like fireworks



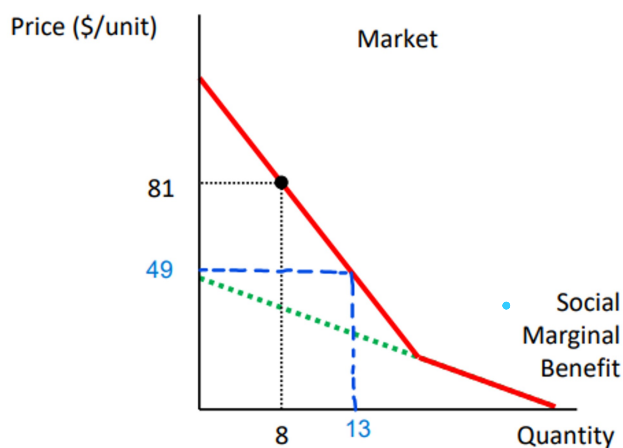
Add up together



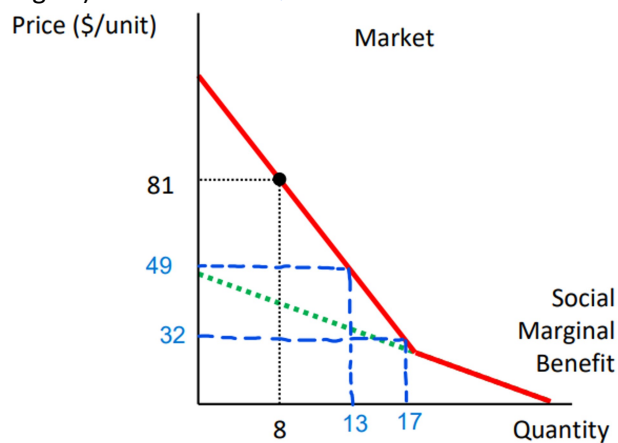
Suppose marginal cost = \$81, efficient quantity = 8, market quantity = 0 + 0 = 0

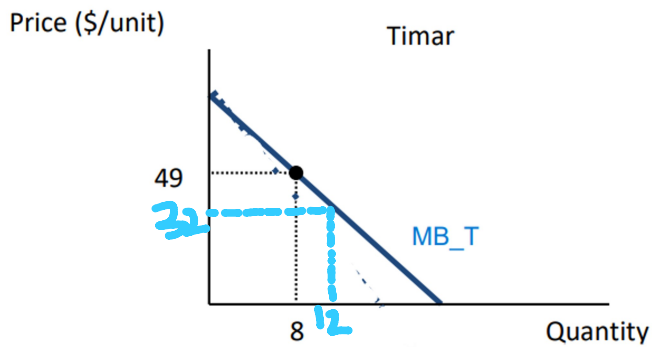


Suppose marginal cost = \$49, efficient quantity = 13, market quantity = $8 + 0 = 8$
 Remember this is nonrival, so Regina can enjoy the same 8 explosions without paying.



Suppose marginal cost = \$32, efficient quantity = 17, market quantity = $8 + 4 = 12$
 If Timar goes first, then market quantity = $12 + 0 = 12$ (since 12 has already more than the MB quantity of Regina)





The market quantity will be some **lower quantity** given the Free Rider Problem.

- The market quantity can be found by comparing the **marginal cost to each** individual's marginal benefit and identifying the single individual who wants the greatest quantity at that marginal cost. That will be the market quantity.

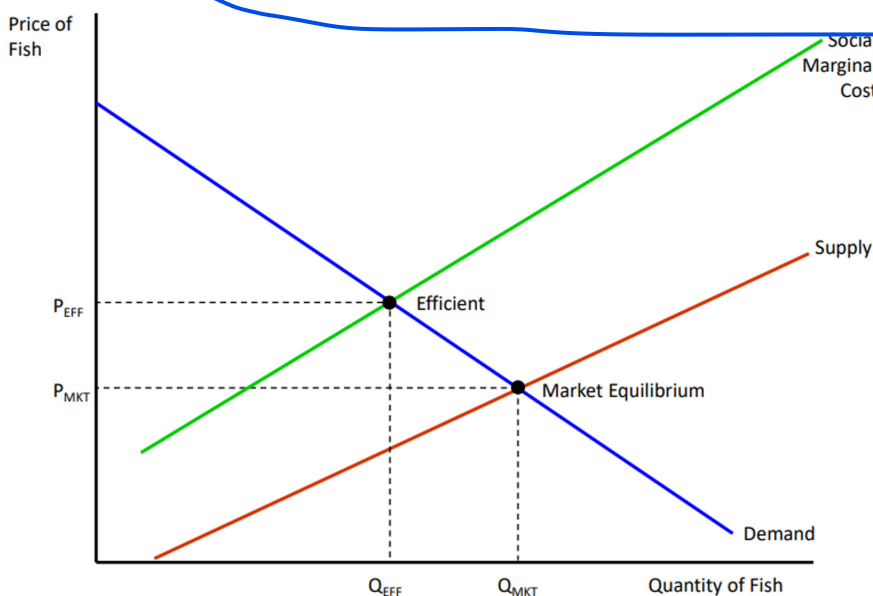
How to solve?

Government **provides and / or subsidizes public goods**

Common Resource (non-excludable and rival consumption)

In the case of a common resource, non-excludable means the user does not have to pay a price, but rivalry means there is a social impact from the user's actions.

Therefore, the **social marginal cost** of using the resource is **higher** than the **private marginal cost** of using the resource.



Efficient use and maintenance of a common resource

A common resource can be efficiently managed:

1. By making **it excludable** and **assigning property rights**
2. By **Pigouvian taxes** (tax or otherwise regulate the use of the common resource)
3. Or by creation of a system of **tradable quotas (licenses)** for the right to use the common resource

Social marginal cost > user marginal cost

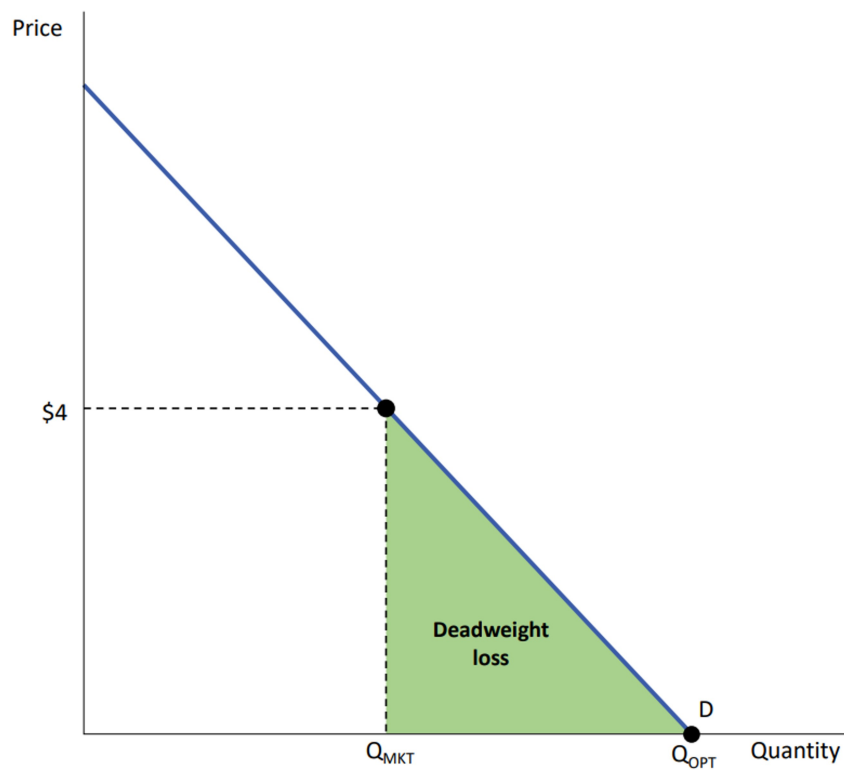
So the market overuses the common resource

We can making the resource excludable by assigning property rights; taxing the use of the resource; creating tradeable license for use

Artificially Scarce Goods (Excludable but non-rival consumption)

Given the good is excludable, and that producers desire to **maximize profit**, producers will charge a **positive price** despite the fact that as a **nonrival good**, the **efficient price** to consumers is zero.

*Artificially scarce goods are often produced by seller with market power



The market equilibrium results in a higher price and lower quantity than the efficient outcome.

The efficient outcome is to allow all consumers to enjoy the good (USUALLY MEANS A 0 PRICE).

This means an alternative revenue stream is necessary to maintain the efficient quantity.

Depending on the alternative revenue stream this may or may not be efficient