Gwinnett School of Math, Science, and Technology

Macroeconomics Yearlong Notes

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Infinite Possibilities

GWINNETT SCHOOL OF MATHEMATICS, SCIENCE, AND TECHNOLOGY

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1 Types of Goods (01/08)

1.1 Characteristics of the Four Types of Goods

- **Rivalrous** goods are those that can only be consumed by one person at a time.
- **Non-rivalrous** goods are those that can be consumed by multiple people at the same time.
- **Excludable** goods are those that can be restricted to certain people.
- **Non-excludable** goods are those that cannot be restricted to certain people.
- If a public good is overcrowded enough, it can become a common resource

1.2 The Four Types of Goods

	Non-rivalrous	**Rivalrous**
Non-excludable	*Public Goods* (e.g. Sunset, Common Knowledge)	*Common-Pool/Common Resources* (e.g. Irrigation Systems, Libraries)
Excludable	*(Toll/Club/Artificially Scarce) Goods/Natural monopolies* (e.g. Day-Care Centers, Country Clubs)	*Private Goods* (e.g. Donuts, Personal Computers)

1.3 Examples

Case Scenario	Type of Good/Service
A college education	Artificially scarce
A manicure or pedicure	Private good
Stone Mountain park	Artificially scarce
State park campgrounds	Artificially scarce
National defense	Public good
Peach Pass lane on I-85	Artificially scarce
Fish in the ocean	Common resource
Street lights	Public good
Netflix/Hulu	Artificially scarce
Flu shot	Private good
Tornado safety shelter	Public good

Case Scenario	Type of Good/Service
Bottled water in a tornado safety shelter	Common resource
Hearing a tornado siren	Public good
Going to an almost empty public beach	Public good
Going to an overcrowded public beach	Common resource
St. Lawrence SeaWay	Natural monopoly
Flying on a commercial airplane	Natural monopoly
Flying a single seat private airplane	Private good
Wedding guests eating a slice of the wedding-cake	Common resource
Cake sold at a bakery	Private good

2 Introduction to Externalities (01/09-01/10)

2.1 Overview

- An **externality** is a cost/benefit that affects a *third party* who did not choose to incur that cost/benefit.
- They are a type of **market failure** because they are *not* accounted for in the price of the good/service.
- The deadweight loss (DWL) of positive externalities will point to the right and vice-versa for negative externalities.
    - Which means the DWL triangle always points to the social optimum quantity.

2.2 Internalizing an Externality (aka ***how to fix an externality***)

2.2.1 Problems with externalities

1) Private individuals won't take into account the external costs/benefits
2) Public goods and common pool resources tend to lack property rights

2.2.2 Coase Theorem (the fix!)

"We can fix externalities without the government if we..."

1) Give property rights to people
2) Minimize transaction costs

2.2.3 Examples

Methods the government can employ to internalize an externality in a free market:

- Pollution or emission limits
- "Pollution credits" for private firms to buy and sell in the market

2.3 Positive Externality in Consumption

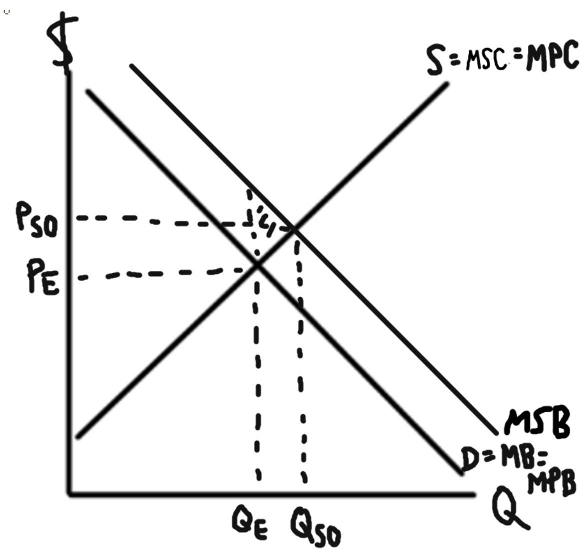

Figure 1: Positive Externality in Consumption

2.3.1 Examples

- Consumption of education
- Consumption of health care
- Advertisement can lead to an increase of demand in the free market $\therefore MPB$ goes up and moves the market toward MSB.

2.3.2 Spillover Effect

- The spillover effect is $MEB = MSB - MPB$.
- $MPB < MSB$
- $MPC = MSC$

2.3.3 Internalizing the Spillover Effect

- The external **benefits** can be internalized by **subsidizing** the product/service to the consumers of the good/service.
- The government intervention will move the private market to **social optimum** where $MSB = MSC$.

2.4 Negative Externality in Consumption

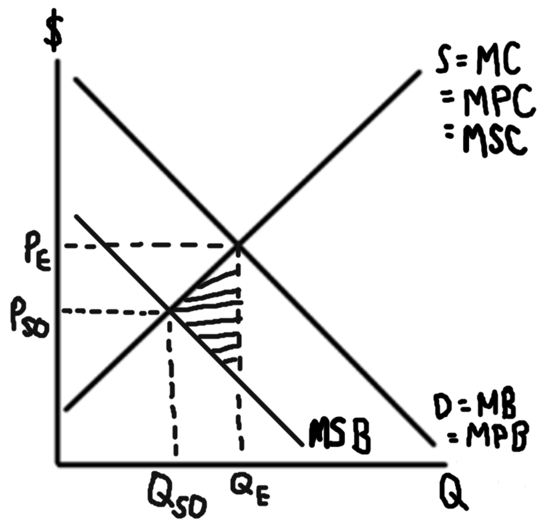

Figure 2: Negative Externality in Consumption

2.4.1 Examples

- Smoking in public/passive smoking
- Pollution due to fossil fuels
- Playing loud music
- Discarding garbage in public places

2.4.2 Spillover Effect

- The spillover effect is $MEB = MSB - MPB$.
- $MPB > MSB$
- $MPC = MSC$

2.4.3 Internalizing the Spillover Effect

- The external **benefits** can be internalized by **imposing a tax** on the product/service to the consumers of the good/service.
- The government intervention will move the private market to **social optimum** where $MSB = MSC$.

2.5 Positive Externality in Production

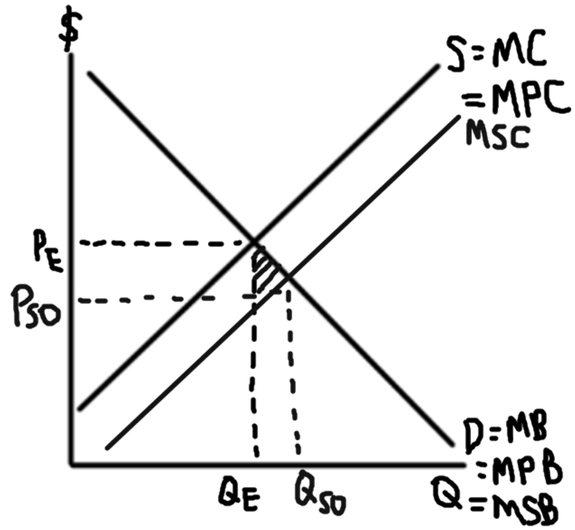

Figure 3: Positive Externality in Production

2.5.1 Examples

- Companies invest in training/professional development of their employees.
- Firms invest in research and development (R&D).

2.5.2 Spillover Effect

- The spillover effect is $MEC = MSC - MPC$.
- $MPB = MSB$
- $MPC > MSC$

2.5.3 Internalizing the Spillover Effect

- The external **costs** can be internalized by **subsidizing** the product/service to the producers of the good/service.
- The government intervention will move the private market to **social optimum** where $MSB = MSC$.

2.6 Negative Externality in Production

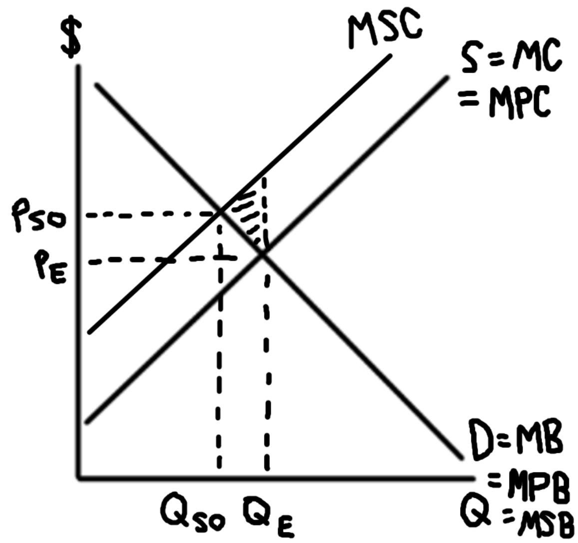

Figure 4: Negative Externality in Production

2.6.1 Examples

- Firms produce chemicals that cause pollution ∴ local fisherman cannot catch fish.
- Construction of roads lead to change of landscape and parks
- Coal fired power plants

2.6.2 Spillover Effect

- The spillover effect is $MEC = MSC - MPC$.
- $MPB = MSB$
- $MPC < MSC$

2.6.3 Internalizing the Spillover Effect

- The external **costs** can be internalized by **imposing a tax** on the product/service to the producers of the good/service.
- The government intervention will move the private market to **social optimum** where $MSB = MSC$.