

ECON 101: Principles of Economics I

Lecture Note 8

University of Michigan at Ann Arbor

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Lecture 8: Externalities

Wednesday, October 5, 2022 12:21 PM

Externalities

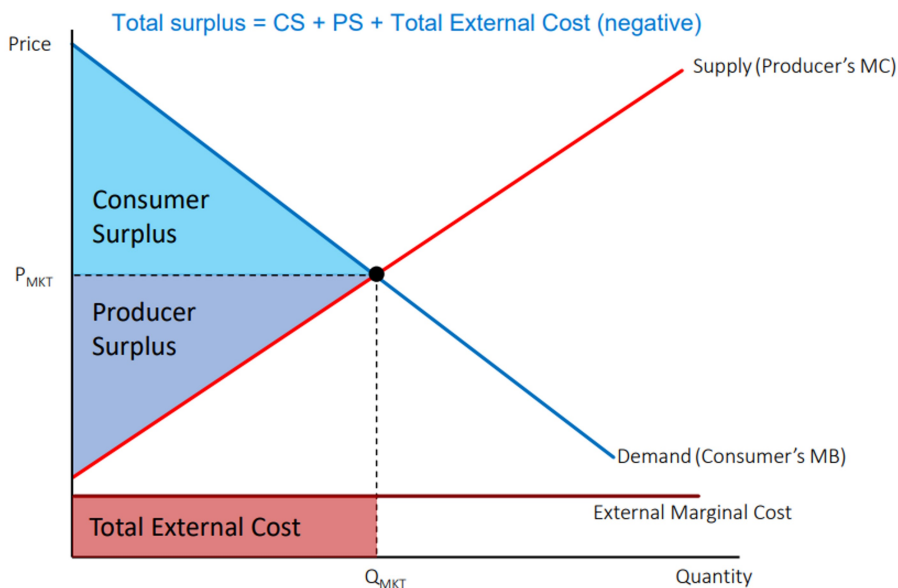
Negative Externality - An **uncompensated cost** that an individual or firm imposes on others. Also known as an External Cost. (ex: Overgrown front yards / pollution)

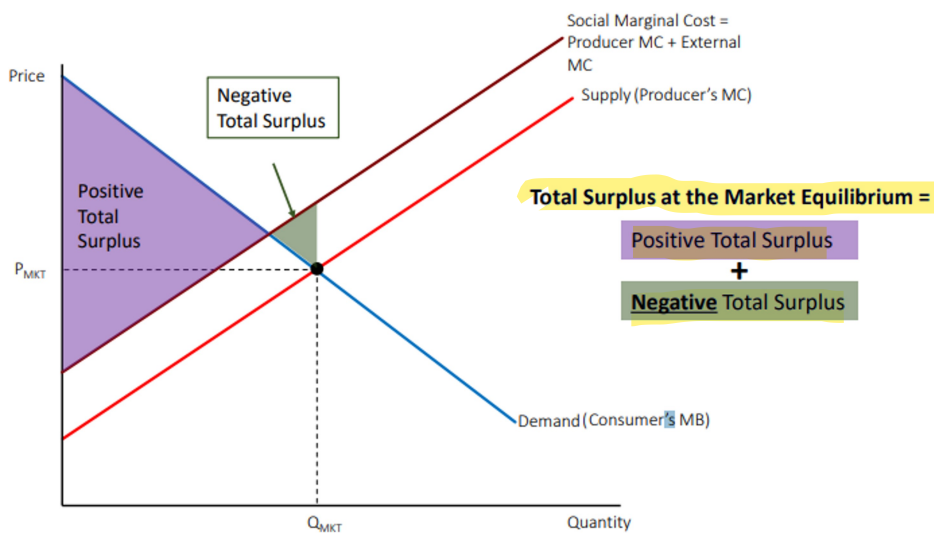
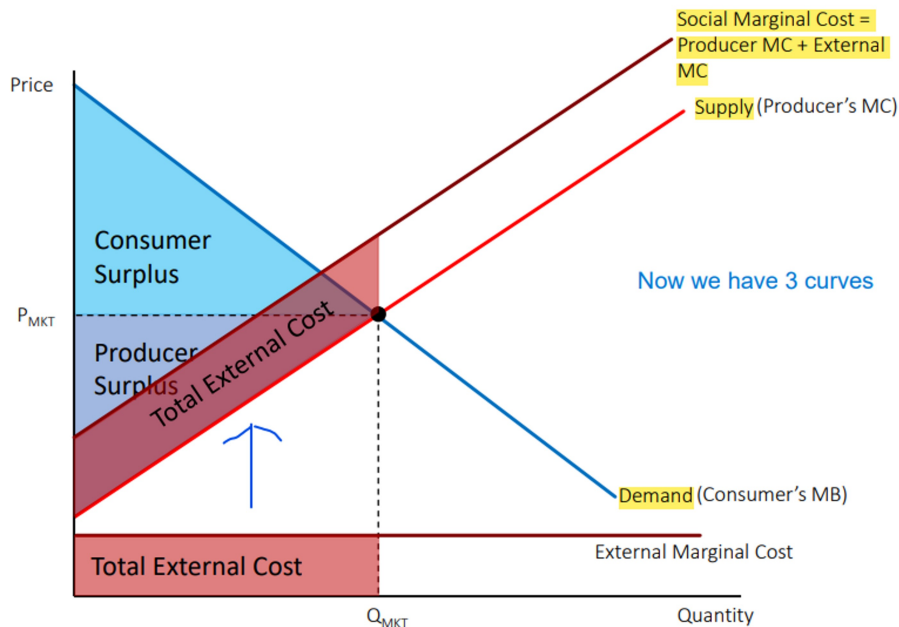
Positive Externality - A **benefit** that an individual or firm confers on others **without receiving compensation**. Also known as an External Benefit. (ex: Nice front yards / vaccinations)

Measuring Market Failure

- How do we know these externalities cause a market failure?
 - First, what does it mean for a market fail?
 - Market failure occurs when, **absent government intervention**, a market **fails to reach the efficient outcome** and fails, therefore, to **maximize total surplus**. (Recall: total surplus is society's net gain from a particular market)
- How do we measure the market's failure?
 - Identify the **market outcome and measure the total surplus**
 - Identify the **efficient outcome** (marginal analysis required)
 - **Compare** the two outcomes (if the two outcomes are the same, then the market is efficient)

Measuring Market Failure (market equilibrium with a negative externality)

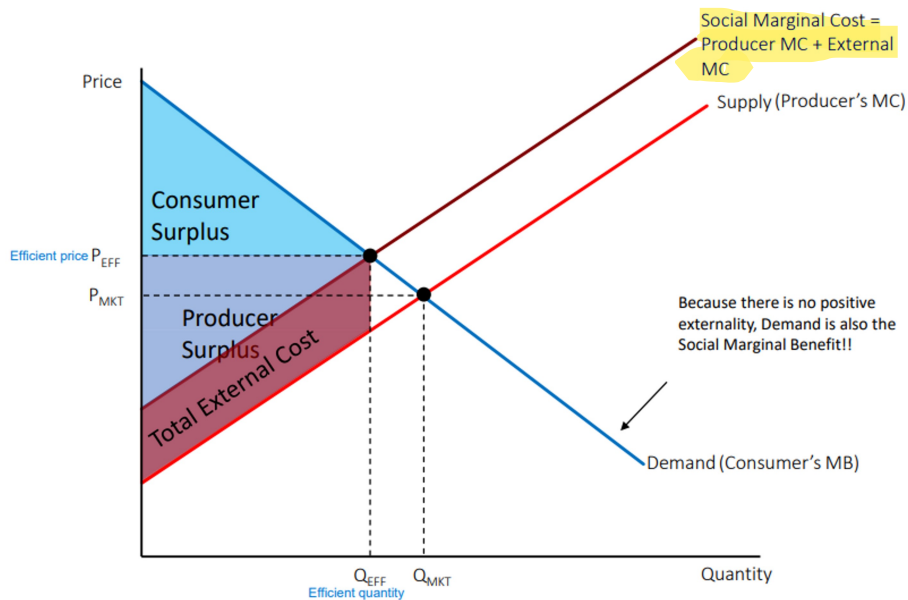


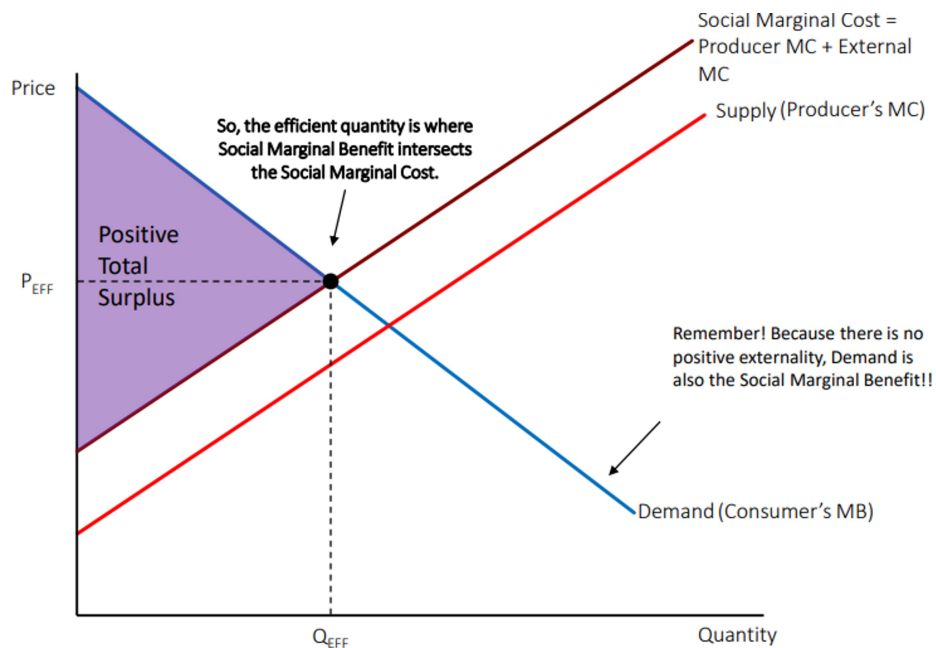


Finding Efficiency with a Negative Externality

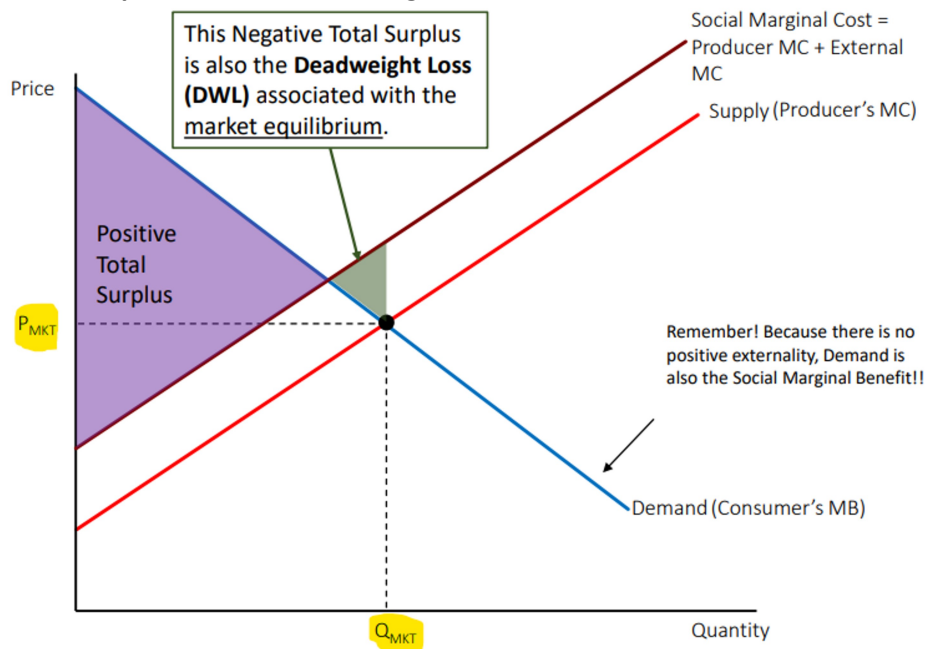
- Efficiency means maximizing total surplus (society's total net gain)
- Marginal Analysis (Chapter 9) taught us that maximize total net gain where marginal benefit intersects marginal cost

For society, this means finding where social marginal benefit intersects social marginal cost



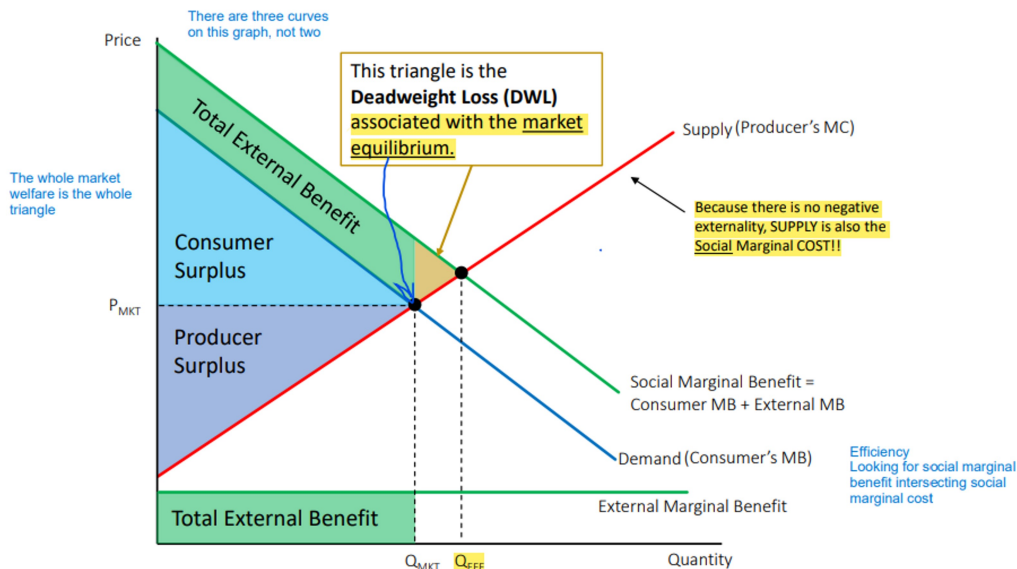


Market Equilibrium and Deadweight Loss



Measuring Market Failure (Positive Externality)

- How is it a market failure when a third party is positive affected?
- How might we represent an external benefit?



Pursuing Efficiency (Can the market fix itself?)

"Coase Theorem"

In the presence of externalities an economy can always reach an efficient solution, provided that the transaction costs (negotiation costs) of making a deal are sufficiently low. (The efficient solution can be negotiated. When the cost is above the suffer, do not transact)

Example: Paper. Forest cannot negotiate, but when there is a proxy between them, for example consumers, says if the paper does not contain 15% recyclable materials, we won't buy it.

When individuals do take externalities into account (when the negotiation works), economists say that they internalize the externality.

Example: Give my neighbor a \$20 head phone to let them not playing music after 10pm.

But that individual cannot always internalize externalities.

The government can help pursuing efficiency

Externality (Ex: Pollution):

- **Environmental Standards**
 - Rules that protect the environment by specifying actions by producers and consumers. (Ex: Burning coal, add some filters.)
- **Emissions Taxes (Pigouvian Taxes - when want to punish people to do less on one thing, tax on that thing)**
 - A tax based on the quantity of pollution emitted.
- **Tradable Emission Permits**
 - Licenses to emit limited quantities of pollutants that can be bought and sold by polluters. (If the price of reduce pollution is lower, I will sell the permit and reduce pollution, vice versa.)

Market for the Good / Service (Ex: Electricity)

- **Environmental Standards**
 - Technology requirements surrounding consumption or production of the good or service. (Ex: Set some standards to limit the production of electricity)
- **Taxes on the good / service (Pigouvian Taxes)**
 - A tax on the good or service knowing that it will reduce the negative externality.
- **Production Quotas**
 - Limiting the quantity of the good or service knowing that it will reduce the negative externality

Solving the Externality using the Market

