

International Regulatory Environment

by Sophia Tutorial



WHAT'S COVERED

This tutorial will cover the international regulatory environment, including why and when private firms fail to produce the optimal amount for society and how negative externalities lead to overproduction in the marketplace.

Our discussion breaks down as follows:

1. Optimal Level of Output
2. Market Failure
3. Pollution: Example
 - a. Microeconomic View
 - b. Macroeconomic View
4. Environmental Protection Agency (EPA)
5. Global Initiatives to Address Climate Change
 - a. Copenhagen Consensus
 - b. United Nations IPCC
 - c. UNFCCC

1. Optimal Level of Output

Now, in most cases, free markets function wonderfully without regulation. This is because producers have the profit motive to provide consumers with what they want at prices that they are willing to pay.

They produce something called the optimal level of output, which is produced when producers equate **marginal cost** with **marginal benefit**.

When firms bear the full cost, it is in their best interest to produce this optimal amount, because it will result in what is profit maximizing.

As a reminder, marginal cost is the additional cost incurred when producing one additional unit, while marginal benefit is the amount of utility gained by consuming an additional single unit of product.



TERMS TO KNOW

Marginal Cost

Additional cost incurred when producing one additional product

Marginal Benefit

Amount of utility gained by consuming an additional single unit of product

2. Market Failure and Negative Externalities

Sometimes, though, a market fails to produce this efficient allocation of goods and services, which is known as a market failure in economics.

Often this is due to **externalities**, which are the effects--either costs or benefits--of a good or service, to third parties who do not participate in that particular market.

Externalities can be negative or positive, but today we will focus on the negative externalities, or the costs of a good or service to a third party.



TERM TO KNOW

Externality

The effects of a good or service to a third party; can be negative or positive

3. Pollution: Example

Pollution emitted from a private firm is a good example of a negative externality. So, what is a private firm's incentive to *voluntarily* switch from unsustainable to sustainable inputs?

Using the example of pollution from an industrial plant, suppose a company knows that its production process will emit pollution. They can decide how much to pollute versus how "green" to make their process.

Now, we know that today, at least, it is still more expensive to produce cleanly, using solar power, for instance, than using a non-renewable resource like coal.

Therefore, they weigh costs and benefits to make the most efficient decision for their company.

If they decide to go green and use a renewable source like solar power, this might increase their production costs and anger stockholders. Companies have to be very careful about this, because those stockholders have a vested interest in this.

Unfortunately, this leaves something important out of the equation. The company does not take into consideration how their pollution will impact the people living downwind.

If it does, these people will potentially face higher healthcare costs. They have nothing to do with this market, if they are not buying the product, yet they are faced with the "cost" of its pollution. They are exposed to this

negative externality.

Therefore, the company's decision--and pollution output--will neglect to consider these third-party costs.

3a. Microeconomic View

When we look at this from the standpoint of the individual firm, we are doing a microeconomic analysis. A **microeconomic theory** is a theory underlying the study of the firm in consumer behavior.

So, if we are looking at it from one firm's standpoint, for example, let's assume that the market price of the good they are selling is \$150. This is the marginal revenue, or the additional revenue that the firm is taking in when they sell one more.

Now, let's also assume that the marginal cost to them to produce it is \$100.

Well, you can easily see that they are profiting \$50 per unit.

Market price = \$150 (Marginal Revenue)

Cost to produce = \$100 (Marginal Cost)

Profit = \$50 per unit

Since marginal revenue is greater than marginal cost ($MR > MC$), the logical, or profit-maximizing firm will continue to produce this product to add to profit.

However, what if the production process is emitting pollution, causing \$75 worth of damage per unit produced?

Well, the market price is still \$150, but let's look at it from a societal standpoint, calling it the marginal social benefit. In this case, society is placing a value of \$150 on this good.

Now, we know that the cost to produce for the individual firm is \$100. However, the marginal social cost has now increased to \$175, because of the damage being emitted in terms of pollution.

Market price = \$150 (Marginal Social Benefit)

Cost to produce = \$175 (Marginal Social Cost)

Profit = \$-25 per unit

You can see now that if the firm realized this full cost to society, their profit would actually be negative, and they would not continue producing.

Using this example, you can see why firms are overproducing goods from society's view, in the case of negative externalities.



BIG IDEA

When firms do not bear the full costs of their production decisions, they will overproduce. They will produce greater than the optimal amount for society, since society is burdened with a cost not borne by the firm--which is a negative externality.



TERM TO KNOW

Microeconomic Theory

The theory underlying the study of firm and consumer behavior

3b. Macroeconomic View

Now, if we briefly look at this from a macroeconomic standpoint, it is more concerning.

When many firms make these decisions to overproduce pollution, the impact is significant in society and can actually lead to global climate change.

4. Environmental Protection Agency (EPA)

In this case, the question posed is should governments intervene in the form of regulation?

In our own country, the Environmental Protection Agency, or EPA, is one such group that has initiatives that include regulatory actions with the goal of reducing some of these negative externalities.

They have an **economic justice** initiative, which is the idea that all people, regardless of geographical location, race, gender, and national identity, should be conferred basic quality of life rights that include fair pay, housing, access to medical care, and education, among other characteristics like environmental protection.



TRY IT

On the Environmental Protection Agency's website via this link, you can access their Environmental Justice Initiative, to see how they are taking steps to ensure that people all have equal access to a healthy environment in our own country: <http://www.epa.gov/compliance/ej/index.html>



TERM TO KNOW

Economic Justice

Also economic equity; the concept that all people, regardless of geographical location, race, gender, and national identity, should be conferred basic quality of life rights that include fair pay, housing, access to medical care, and education, among other characteristics

5. Global Initiatives to Address Climate Change

However, due to growing awareness of anthropomorphic, or human-made, climate change, nations worldwide are coming together to discuss plans.

Mitigation focuses on modifying activities to reduce further emissions and climate changing behaviors, to try to stop any further damage from occurring.

Adaptation, on the other hand, is about developing infrastructure to keep people safe from the more volatile climates that we are exposed to because of climate change.

5a. Copenhagen Consensus

The Copenhagen Consensus is one of these organizations. It is a nonprofit organization that commissioned a panel of five economists, four of whom are Nobel laureates, to outline the costs and benefits of each

response to global warming.



TRY IT

Visit their website via this link to see their statement regarding global warming and the need for policy response: <http://www.copenhagenconsensus.com/projects/copenhagen-consensus-on-climate>

5b. United Nations IPCC

The United Nations IPCC, or Intergovernmental Panel on Climate Change, is a global organization that focuses on the impact of climate change.

It was established in 1988 by the U.N. and it includes 2,000 scientists and researchers.

Previously, they were reasonably conservative on their stances, but recently their chairperson has been more vocal in stating that carbon emissions need to be reduced.

This is in response to Dr. James Henson, who testified before Congress in 1988 about dangerous carbon levels and their impact on nonreversible climate change.

He set a threshold for what would basically be beyond dangerous, and in mid-2013, unfortunately, it was exceeded, which is why the IPCC has been increasingly vocal about this issue.

Consequently in 2007, the IPCC and former U.S. Vice President Al Gore won the Nobel Peace Prize for their efforts to increase knowledge on climate change and start to establish a framework for what can be done to counteract it.

5c. UNFCCC

The UNFCCC is the United Nations Framework Convention on Climate Change. It began as an environmental treaty signed in 1992 concerning greenhouse gas emissions.

Although it set no limits and is not binding, it did provide a framework for negotiating future treaties.

The 1997 Kyoto Protocol is the most well-known and most recent. The UN members who signed this make up the COP, or Conferences of the Parties.

The Kyoto Protocol has had a couple of phases to formulate legally binding obligations to reduce greenhouse gas emissions.:

- First phase of reduction: January 2008
- Second phase of reduction: January 2013

The COP meets annually to discuss and assess where we are in dealing with climate change. The U.S. attends but is not a formal member.

The U.S. did not sign the Protocol and has not committed to climate change reductions. Why? Cost, cost, cost. It would require adopting new production techniques which are more expensive than our current methods.



SUMMARY

Today we learned that private firms fail to produce the **optimal level of output** for society, for they do not bear the full cost of their production. We discussed how sometimes, a market fails to produce an efficient allocation of goods and services, which is known as a **market failure** in economics, often due to negative externalities.

We explored an **example** that illustrated how negative externalities like **pollution** can lead to overproduction, looking at both the **microeconomic view** and **macroeconomic view**. Finally, we learned that there are many **global initiatives to address climate change**, including the **EPA**, **Copenhagen Consensus**, **United Nations IPCC**, and the **UNFCCC**.

Source: Adapted from Sophia instructor Kate Eskra.



TERMS TO KNOW

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Externality

The effects of a good or service to a third party; can be negative or positive.

Marginal Benefit

Amount of utility gained by consuming an additional single unit of product.

Marginal Cost

Additional cost incurred when producing one additional product.

Microeconomic Theory

The theory underlying the study of firm and consumer behavior.