Externalities: The Coase and Pigouvian Theorems and Their Implications

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Roadmap

- Define externalities
- Ways they can be dealt with through:
  - Pigouvian taxes or subsidies and their criticisms
  - Coase theory and its criticisms
- Implications

Defining Externalities

Externality: a cost or benefit that is not shown in the actual price of something and is incurred by a party who did not agree to the action causing the cost or benefit

- **Negative externality**: second-hand smoking or pollution from a factory
- **Positive externality**: education helps society, use of solar panels yields more electricity on the grid, fireproofing your house helps keep your neighbors safe

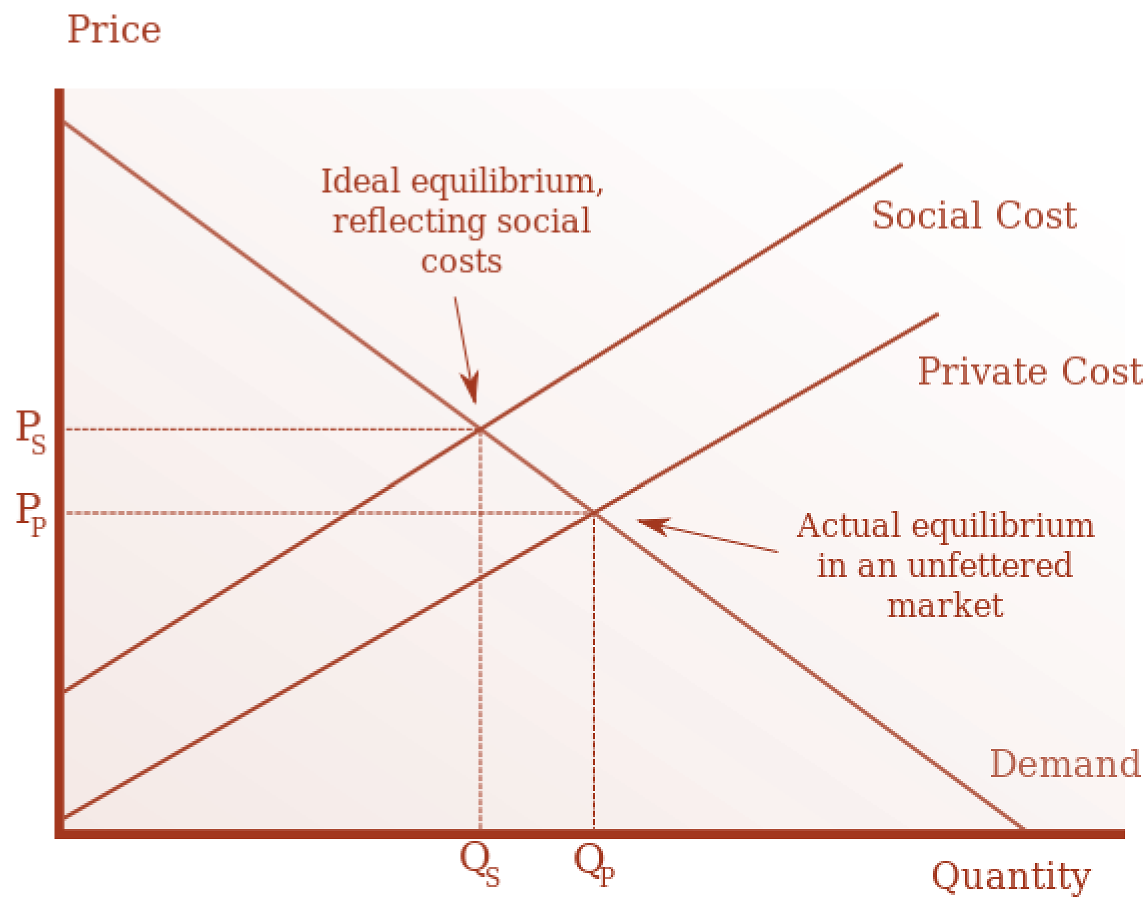
Market Inefficiencies

- The definition of an **efficient market** is a market in which the value of goods produced is equal to the opportunity cost, or value of forgone production.
- The prices in an efficient market reflect the full costs or benefits of producing a good. **Externalities** prevent this.

Market Inefficiencies

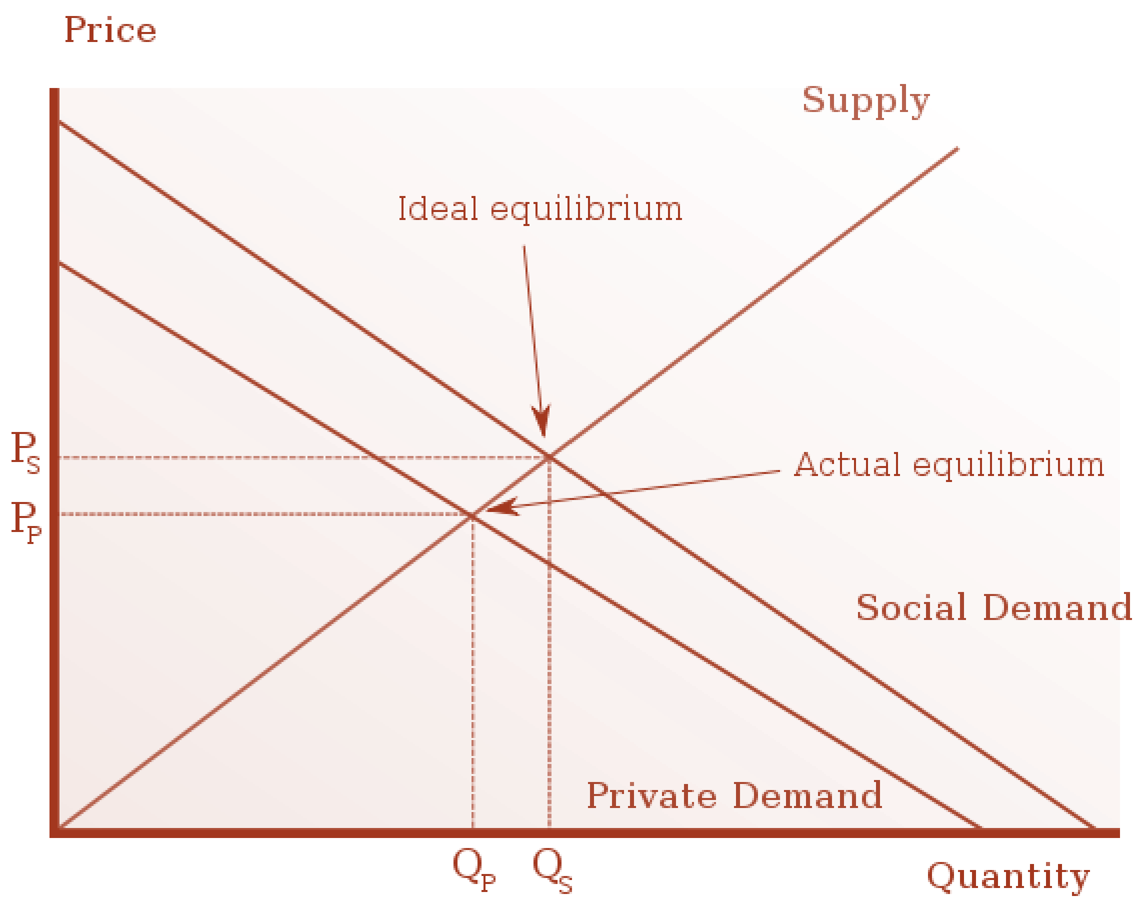
- Usually too much of a negative externality is produced at too low a cost and the opposite is true for positive externalities.
- External costs are put on people involuntarily, and external benefits are reaped by those who don't have to pay for them.

Negative Externality Graph



Demand curve with external costs: If social costs are not accounted for the price is too low to cover all the costs and the quantity produced is unnecessarily high because the producers and their customers are underpaying the total.

Positive Externality Graph



Supply curve with external benefits: When the market does not account for additional social benefits of a good, both the price for the good and the quantity produced are lower than the market could bear.

Questions

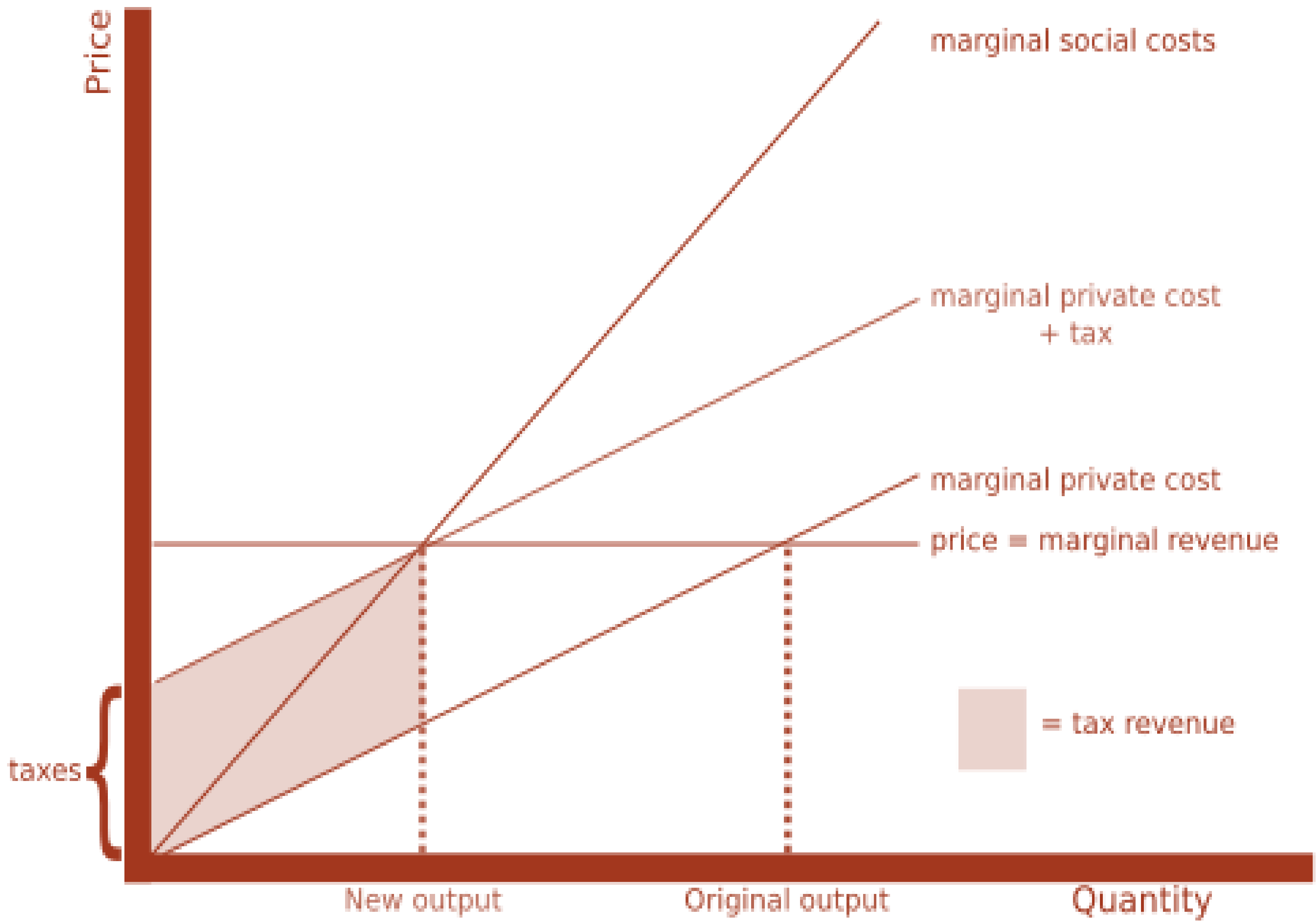
- How should we deal with externalities?
- What theories have been constructed to deal with externalities?
- Externalities have to be internalized or paid for somehow.
  - Criminalization (drugs, health laws protecting workers)
  - Civil tort laws (liability suits)
  - Government provisions (education, national defense)

Pigouvian Theory and Taxes

A **Pigouvian tax** is a tax that is levied to correct the negative externalities of a market activity.

When this tax is levied, producers have an incentive to reduce their output to the socially optimal level.

Pigouvian Tax Effect on Output



Pigouvian Theory and Subsidies

Pigouvian subsidies are also an option. They install a benefit for positive externalities, like donating to non-profits or installing solar panels to avoid pollution.

The positive externalities are then accounted for.

Firms will produce more of the positive externality since they are receiving a beneficial Pigouvian subsidy.

Alternatives to Pigouvian Methods

Direct regulation is one alternative.

- Setting a regulation limit on pollution produced, for example

But once the company gets below this limit, there is no incentive to go even lower and produce less pollution since they already abide by the regulation.

Alternatives to Pigouvian Methods

Creating **new markets**, like a pollution rights market or a carbon market, is another alternative.

- Allow people to buy, sell and trade the right to create pollution or release carbon within certain limits.
- This might not be as efficient as a Pigouvian tax and is more complex.
- It might be more attractive from a policy standpoint since it gives companies or polluters more rights without heavy regulation.
- Establishing these rights means people lose less income if they can play the market right.

Criticisms of Pigouvian Taxes

- Calculating a tax or subsidy can be hard if not impossible.
  - Is there any way to measure with money how secondhand smoke affects the people around you on a large national scale?
- Government calculates the tax, leaving tax levels open to corruption, poor policy makers and special interest group lobbying.
  - Some might calculate the negative utility of the negative externality to be higher than others.
- Leads to a sub-optimal level of production.

Criticisms of Pigouvian Taxes

- If the tax is levied in one country or state but not another, it could create black markets or smuggling between areas.
- If the tax or subsidy increases the purchasing power of consumers, they might spend their extra money on things that produce negative externalities, defeating the cycle.
  - Buying expensive cars that pollute more, for example

Coase Theorem

- Government should restrict its role in correcting for externalities.
- People will make agreements and the government's job is simply to enforce them.
- Mutual agreements that are self-formed will be more beneficial.
- This requires:
  - Property rights to be well defined
  - People to act rationally
  - Transaction costs to be minimal or zero

Coase Theorem

- For example, if company A pollutes company B's stream, we punish company A.
- But who says that we should inflict harm on A? What if A has beneficial services that are hindered by this punishment?
- The specific legal rights, according to Coase, are also irrelevant as long as they are defined. Private negotiations are what matter.

Coase Theorem

- Property rights need to be defined accurately and openly.
- **Tragedy of the Commons**: The commons are not legally defined as private property.
  - Commons with no private property: people are not interested in protecting it.
  - Commons divided as private property: people are more likely to care if they deplete it or not.

Coase Theorem

- Coase also wants to look at the total effect of the system.
- Is the gain from preventing one externality greater than the loss that would be suffered as a result of preventing the externality?

Criticisms of the Coase Theorem

- Today, it is often not feasible to have low transaction costs, since many issues are global.
- To get rid of a pollution externality, you would have to define the problem, its monetary implications, how to solve it and then draw up an agreement (lots of time and money involved).
- Property rights are not as strictly defined as Coase theory requires.
- A Coase system might mean privatizing everything.

Implications

- If we were to begin to correct the economy for all externalities, prices would go up dramatically (price inflation).
- This might mean that those in the most disadvantaged parts of society wouldn't be able to buy items like food or gas.

Implications

- If this is the case, we might need to take a Rawlsian approach: Need to help the worst-off in society and perhaps subsidize their buying power (price difference).
- Ties in with the precautionary principle: We should look at activities with externalities and how they will affect the market before pursuing them.

Further Questions

- Is it possible to internalize all externalities?
- Where would we start? With which goods and services?
- What methods would we have to use?
- How would the public react?