
LECTURE TWELVE - PART SEVEN

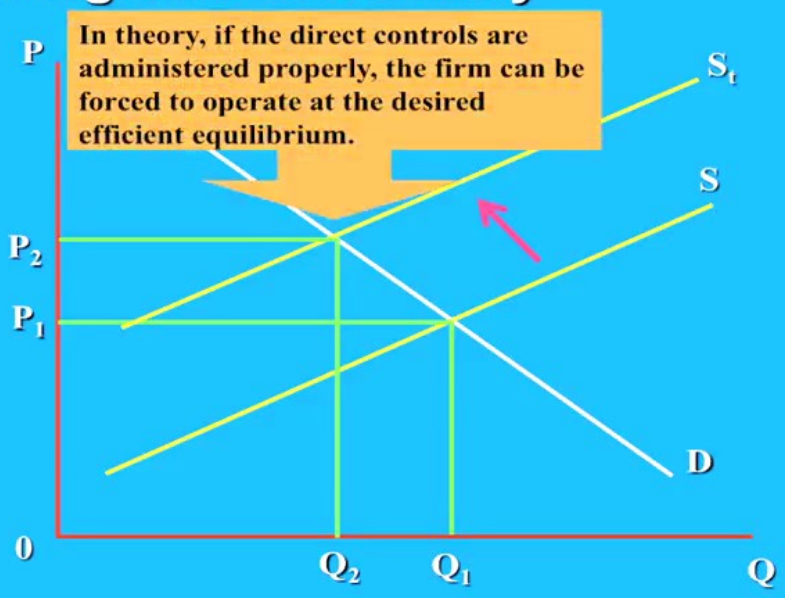
Direct Government Intervention

- Involves placing limits on the amount of pollution a polluter may emit.
- This "command and control" approach has dominated environmental public policy in the United States for decades.

An Example of Pollution Control

- Clean Air Act: Limits the amounts of sulfur dioxide, nitrogen oxide, particulates, and other substances that power plants and factories may emit into the air.
- Clean Water Act: Specifies the amount of heavy metals, detergents, and other pollutants that firms can dump into rivers and bays.
- Violation of these laws means fines and, on occasion, imprisonment.

A Negative Externality



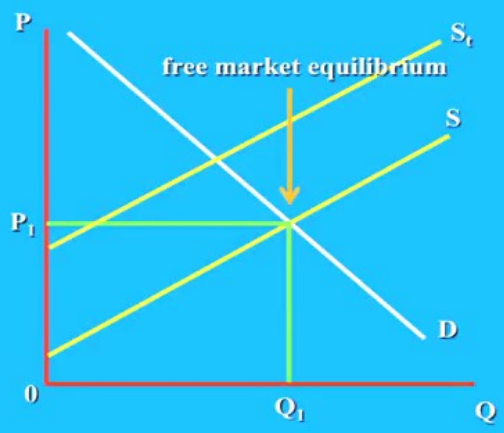
Pigouvian Taxes and Subsidies

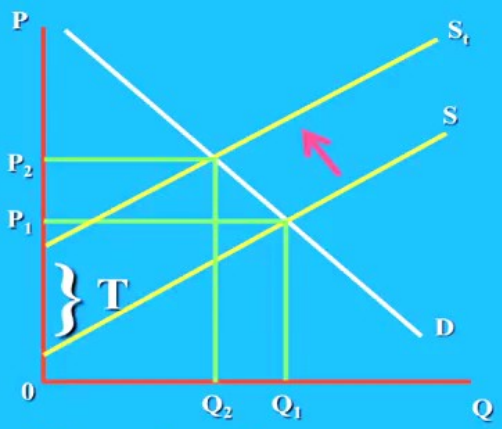
- There is a second way that this same result can be achieved.
- It is a method many economists prefer because it is less intrusive into the market place and relies more upon market and pricing signals.
- This method involves the use of so-called "Pigouvian taxes and subsidies" to tax negative externalities and subsidize positive externalities.

A.C. Pigou

- If you're wondering where the word Pigouvian comes from, it is used in honor of the French economist A.C. Pigou who originally thought up the idea.

Internalizing Negative Externalities





The tax is said to internalize the externality.

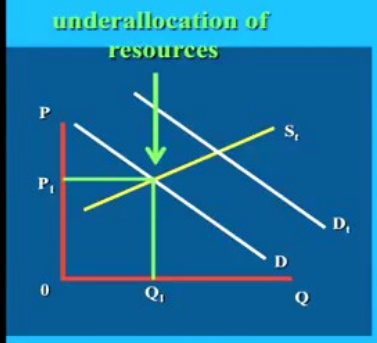
Pigouvian Taxes In Action

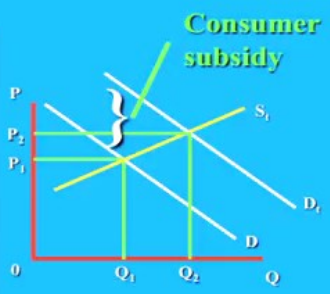
- Pigouvian-like taxes are regularly used by the government to internalize externalities.
- Example: The Federal government placed an excise tax on chorofluorocarbons which deplete the stratospheric ozone layer protecting the earth from excessive solar ultraviolet radiation.

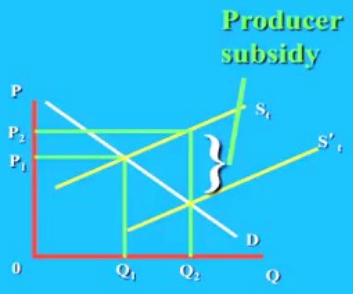
A Pigouvian Tax on CFCs

- CFCs are used as a coolant, a blowing agent, and a solvent.
- Manufacturers must decide whether to pay the tax or expend additional funds to purchase or develop substitute products.
- In either case, the tax will increase the marginal cost of producing CFCs, thereby shifting the private supply curve for this product leftward and presumably closer towards the optimal level.

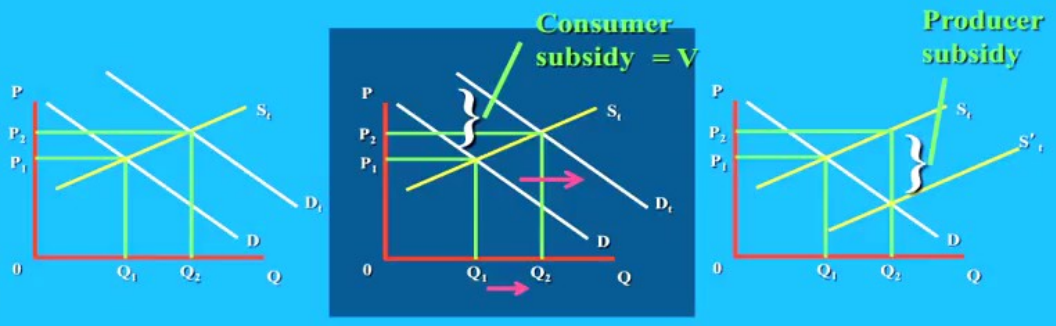
Internalizing Positive Externalities





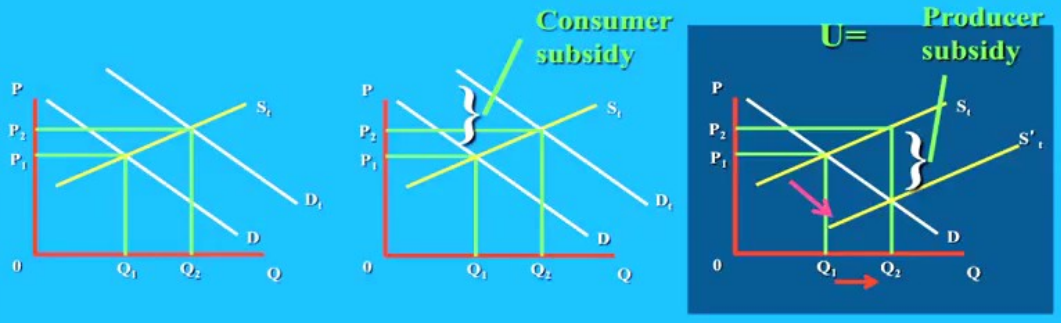


- The government might give each new mother a discount coupon with a value of V to spend on a polio vaccination for her child.



Consumer subsidy

- The government might provide a producer subsidy of U to physicians and medical clinics.



Consumer subsidy

Producer subsidy

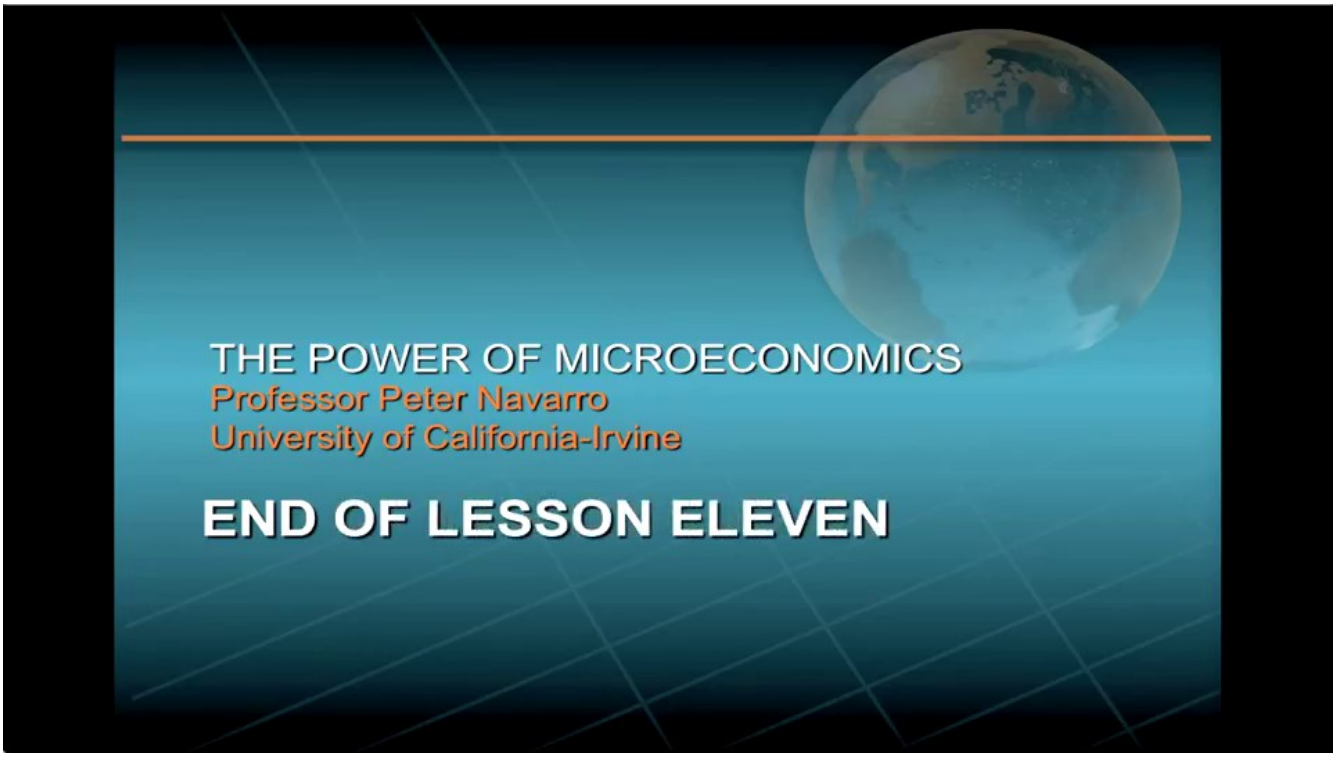
Government Provision

- Where spillover benefits are extremely large, the government may decide to provide the product as a public good as an alternative to subsidization.
- In fact, the U.S. government largely eradicated the crippling disease of polio by administering free vaccines to all children.

Problem	Resource allocation outcome	Ways to correct
Spillover costs (negative externalities)	Overallocation of resources	1 Individual bargaining 2 Liability rules and lawsuits 3 Tax on producers 4 Direct controls 5 Market for externality rights
Spillover benefits (positive externalities)	Underallocation of resources	1 Individual bargaining 2 Subsidy to consumers 3 Subsidy to producers 4 Government provision

Conclusion

- This concludes our discussion of two of the most important market failures in economics: public goods and externalities.


THE POWER OF MICROECONOMICS
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