

Externalidad y bienes públicos

Clases 22 - 24

Curso: Economía IN2201
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Agenda

1. Fallas de mercado
2. Externalidades
3. Bienes públicos
4. Derechos de propiedad y política de gobierno

CUANDO LA SOLUCIÓN DESCENTRALIZADA FALLA



Cuando fallan los mercados

- Las industrias santiaguinas vierten sus residuos en el río Mapocho.
- El Mapocho vierte sus aguas en el Maipo que desemboca cerca de Llole.
- Los pescadores locales sufren cuantiosas pérdidas debido a la elevada mortandad de peces a causa de la contaminación.
- Exigen compensaciones y regulaciones.
- El representante del gremio de los industriales de Santiago argumenta que actuando las empresas bajo libre competencia, no se debe ninguna compensación porque el mercado siempre es eficiente.
- ¿Quién tiene la razón?

Cuando fallan los mercados

- **Externalidades**: positivas y negativas. Costos y beneficios privados y sociales.
- **Bienes públicos**: rivalidad y exclusión. Bienes privados, monopolios naturales, recursos comunes.
- Derechos de propiedad y la tragedia de los comunes. *Free riders*.

Una externalidad es

Una externalidad ocurre cuando

- La actividad de un agente afecta directamente el bienestar de otro agente,

y

- Este efecto no es transmitido por los precios de mercado

Ejemplos de externalidades

Externalidades:

- Una firma contamina el aire al producir
- El perro de un vecino hace más segura nuestra casa

Sin externalidades:

- Un negocio con música metal debe reducir sus precios para mantener a sus clientes
- McDonalds implementa una oferta, forzando a Burger King a tener una oferta también

Ejemplos de externalidades

Externalidades negativas dañan a otros

- Ejemplo: una planta química contamina un lago afectando su belleza y seguridad para la salud de sus visitantes

Externalidades positivas ayudan a otros

- Ejemplo: un profesor se vacuna contra la influenza y reduce la probabilidad de contagiar a sus estudiantes

Public goods and externalities can be similar

Externalities are *unintended* costs or benefits to the community, whereas public goods have *intended* benefits to the community (Mishan, 1971)

ie: **If you hire security, it has externalities. If your block hires security, it is a public good**

It is still useful to examine them independently in practice

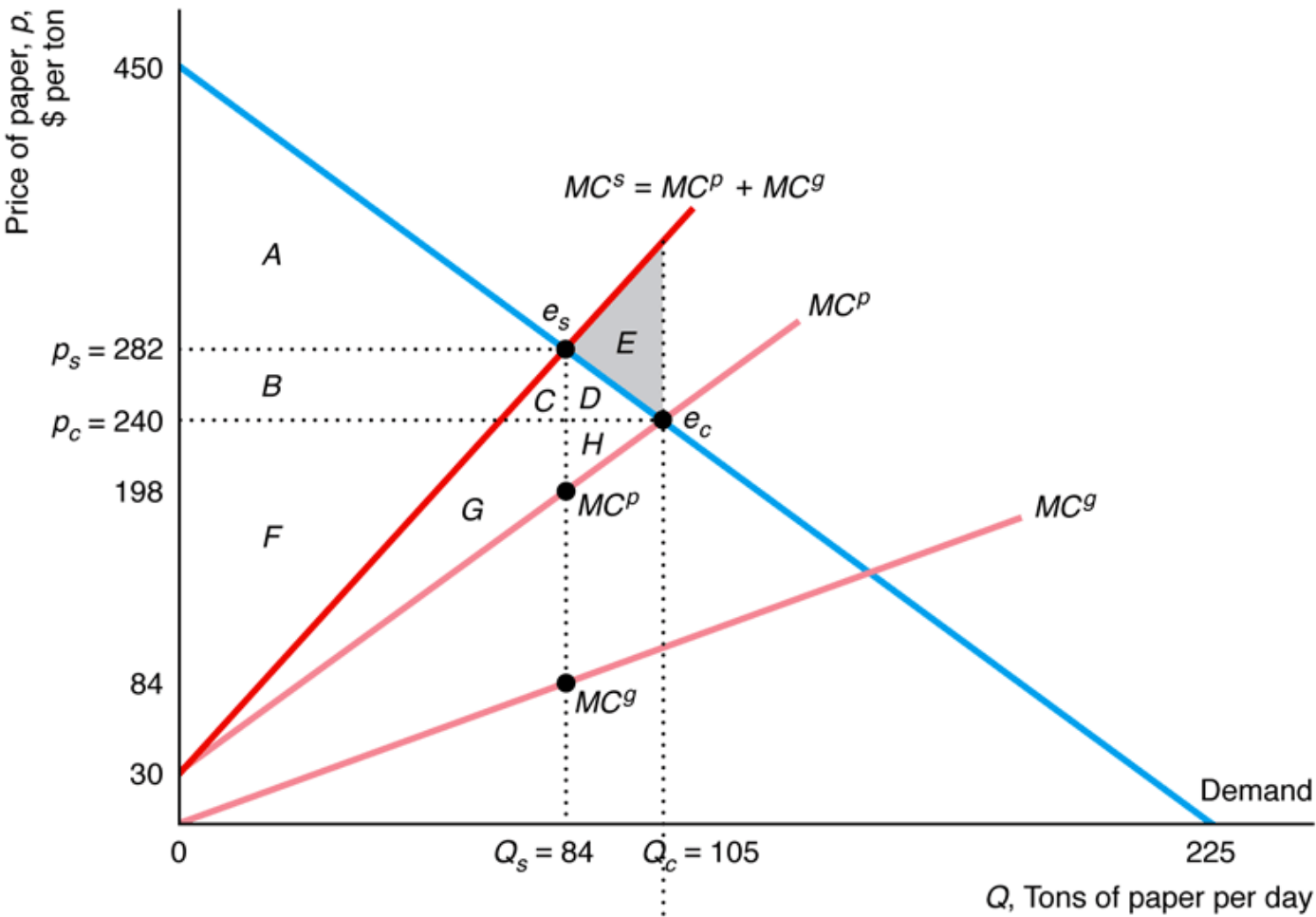
The Inefficiency of Competition with Externalities

- Competitive firms and consumers do not have to pay for the harms of their negative externalities, so they create excessive amounts.
- Producers and individuals are not compensated for the benefits of a positive externality, so too little is produced.
- Nonoptimal production is the primary result of externalities.

The Inefficiency of Competition with Externalities

- Consider a paper mill that produces paper in a way that pollutes the air and water.
- The firm's ***private cost*** is the cost of production only (direct costs of labor, energy, and wood pulp), but not the indirect costs of the harm from pollution.
 - Intersection of private MC and market demand yields the competitive equilibrium.
- The firm's true ***social cost*** is the private cost **plus** the cost of harms from externalities.
 - Intersection of social MC and market demand yields the socially-optimal equilibrium.

The competitive equilibrium, e_c , excludes externalities and involves overproduction & DWL relative to the social optimum, e_s .



	Social Optimum	Private	Change
Consumer surplus, CS	A	$A + B + C + D$	$B + C + D$
Private producer surplus, PS_p	$B + C + F + G$	$F + G + H$	$H - B - C$
Externality cost, C_g	$C + G$	$C + D + E + G + H$	$D + E + H$
Social producer surplus, $PS_s = PS_p - C_g$	$B + F$	$F - C - D - E$	$-B - C - D - E$
Welfare, $W = CS + PS_s$	$A + B + F$	$A + B + F - E$	$-E = DWL$

Regulating Externalities

- Competitive markets produce too many negative externalities, so government intervention may provide social gain.
 - A governmental limit on the amount of pollution that may be released is called an emissions standard.
 - A tax on air pollution is called an emissions fee.
 - The government can also control pollution indirectly through quantity restrictions or taxes on outputs or inputs.

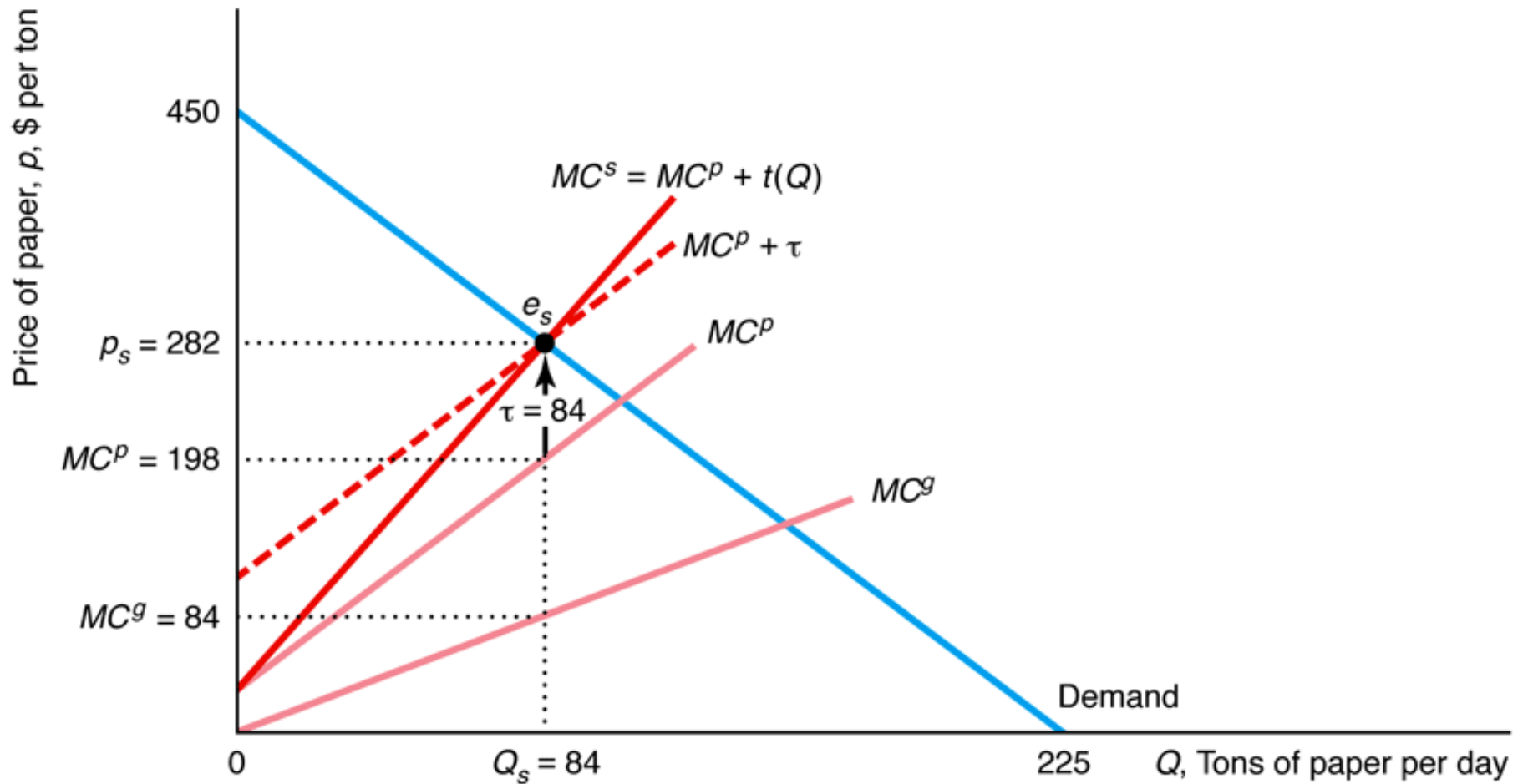
Emissions Standard

- How does the government achieve the social optimum using an emissions standard?
- The government doesn't usually know enough to set quantity restrictions on output optimally.
 - This would require knowledge of how marginal social cost, the demand for the product, and pollution vary with output.
- Even if the government knew enough to set optimal regulation, enforcement would still be difficult.

Emissions fee

- How does the government achieve the social optimum using an emissions fee?
- The government may impose costs on polluters by taxing their output or the amount of pollution produced.
- The output tax causes a firm to internalize the externality or bear the cost of the harm inflicted on others.

- An emissions fee is a tax on output equal to MC of gunk so that after-tax MC induces socially-optimal behavior.



Efectos en bienestar de contaminación en mercado competitivo

- Ver solución algebraica (Tarea voluntaria)

Allocating Property Rights to Reduce Externalities

- A property right is an exclusive privilege to use an asset.
- Instead of emissions fees and standards, an indirect approach to dealing with externalities is for the government to assign a property right.
- If nobody holds a property right for a good or bad, the good or bad is unlikely to have a price.
 - Nobody has property rights to the air we breathe and pollution, a bad, has no price.

Allocating Property Rights to Reduce Externalities

- The Coase Theorem states that the optimal levels of pollution and output can result from bargaining between polluters and their victims if property rights are clearly defined.
- Example:
 - Chemical plant and boat rental company share a small lake
 - Chemical firm dumps by-products that only smell bad, but are otherwise harmless, into the lake
 - Boat rental firm's business is hurt because peoples' dislike for the smell means they are only willing to rent if the price is low.

Un bien público es

Hasta aquí.....

- We have seen that the role of government in promoting efficiency is to intervene in the pricing mechanism of goods that create externalities.
- Now we will investigate a class of goods where it is usually more efficient for the government to supply instead of the private sector.
- Public Goods = (Law and Order, defence, refuse collection, roads, education, public health,...)

Definition

A Public Good has 2 properties:

- (1) If it has been provided to one consumer it is difficult/impossible to stop another from enjoying it too.

“Non-Excludable”

- (2) The amount of the good I enjoy has no affect on the amount you enjoy.

“Non-rival”

Rivalry and Exclusion

Four categories: private good, open-access common property, club good, and public good

	<i>Exclusion</i>	<i>No Exclusion</i>
<i>Rivalry</i>	<i>Private good:</i> apple, pencil, computer, car	<i>Open-access common property:</i> fishery, freeway, park
<i>No Rivalry</i>	<i>Club good:</i> cable television, concert, tennis club	<i>Public good:</i> national defense, clean air, lighthouse

CONSEQUENCES

- Non-excludable:
 - Very difficult for the private sector to provide it and make a profit: Basic Research, Information, R&D
- Non-rivalry:
 - Do not want to exclude people as it is inefficient: The marginal cost of them getting the good is zero and they get positive benefit.

The Free Rider Problem

The fundamental problem of all public goods is I'd rather someone else paid for the public goods I consumed.

This is called the [free-rider problem](#).

Prisoners' Dilemma in Action

Imagine it costs £4 to provide a clean street **outside** my house.

Either I or my neighbour can pay for it. We both value clean streets at £3.

If one of us pays £4 we are both better off.

	He Pays	He Doesn't Pay
I Pay		
I Don't Pay		

Prisoners' Dilemma in Action

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Nota: dos aseadores no cambian el beneficio total vs. un aseador

	He Pays	He Doesn't Pay
I Pay	$(-1, -1)$	$(-1, 3)$
I Don't Pay	$(3, -1)$	$(0, 0)$

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Equilibrio de Nash:
solución privada
sin coordinación

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I Pay	$(-1, -1)$	$(-1, 3)$
I Don't Pay	$(3, -1)$	$(0, 0)$

Prisoners' Dilemma in Action

Ahora, si nos coordináramos y compartiéramos el gasto: contrataríamos un aseo y pagaríamos 2 cada uno, recibiendo 3 de beneficio (beneficio neto = 1 por persona)

Solución privada
con coordinación
(à la Coase)

Equilibrio de Nash:
solución privada
sin coordinación

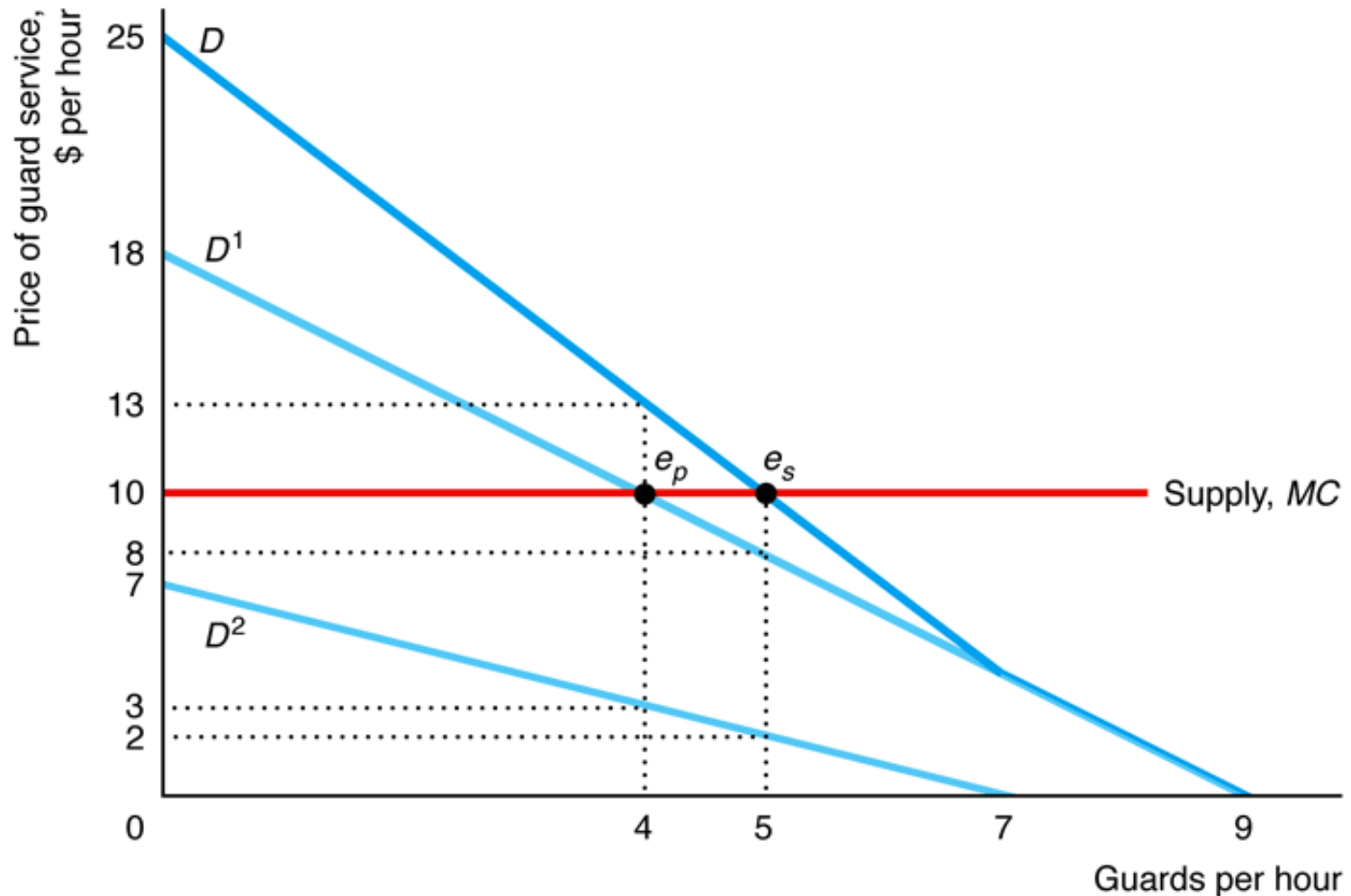
	He Pays	He Doesn't Pay
I Pay	(1,1)	(-1,3)
I Don't Pay	(3,-1)	(0,0)

The Free Rider Problem

Si los costos de coordinación son altos, porque hay muchos participantes, el Estado debe proveer el bien público.

Bienes públicos

Demand for mall security guard services by two mall tenants.



Reducing Free Riding

Free riding can be reduced in several ways:

- Social pressure to contribute reduces free riding and may result in minimal provision of some public goods.
- Firms can merge into a single firm and thereby internalize the positive externality.
- Privatization (exclusion) also eliminates free riding because access to the good is restricted.
- Compulsion to avoid free riding may come in the form of contracts and taxes.