Thursday, Nov 18, Lecture 20
Monopoly Price Discrimination

This is the last lecture before Thanksgiving week. There are no recorded lectures or discussion sections for EC101DD/EE during Thanksgiving week (Nov 22 to Nov 26).

A problem set will be posted on Friday, Nov 26, for the week of Nov 30.

Price Discrimination

When can a monopoly *price-discriminate*? (charge different prices to different consumers)

- **Answer:** when it has information about differences in the WTP of individual or groups of consumers.

A monopoly without information about the WTP of individual or groups of consumers will be *nondiscriminating* and charge the same price to all consumers.

- Suppose that the monopoly knows the demand curve it faces (market demand)…

- …but has no information about where different consumers are located on it.

- Then the monopoly has no basis to treat consumers differently from one another.
The nondiscriminating monopolist earns profits \((MR - MC)\) on every unit up to 5 tons...

but she would lose profits on units between 5 tons and 10 tons.

So she will sell 5 tons (and charge $600/ton).

But society would have benefited from the next 5 tons, because \(WTP > MC\).

The next 5 tons, not produced, represent unexploited gains of trade \((DWL)\).

In our example,

- The cost of each ton of sugar \((MC)\) is $200.
- the monopolist wants to sell 5 tons, because \(MR \geq MC\) for each of the first 5 tons.
- She sets the price at $600 (on the WTP curve, NOT on the MR or MC curve). Why?

The monopoly’s economic rents are \(5(600 - 200) = \$2000\).

Deadweight loss = $1000. (How is it calculated?)

In this example, the monopolist lacks information that would enable her to price-discriminate \([sell to different consumers at different prices]\).

What if she could price-discriminate?
**Example: Price Discrimination**

- **Story of a lobster shop in Maine**
  - Visitors must take a road along a hillside, down to the lobster shop near the beach.
  - The lobster-seller can see each car coming down the hillside long before it gets to his shop.
  - If the car is expensive 😊, he writes a high price on the chalk-board in his shop,…
  - …but if the car is junk 😞, he writes a low price on the board .

- He has information about individual consumers.

---

**Perfect Price-Discrimination**

- Suppose De Beers is the only seller of diamonds,…
- …and suppose it has an instrument that can measure every customer’s *WTP* for diamonds.
- Then De Beers could set a “special” price for each customer, equal to the customer’s *WTP*.
- How much consumer surplus will the customers get?
- If the firm wanted to sell an additional diamond, it could charge the next customer his own *WTP* as well,…
- without having to lower prices charged to other customers.
If a consumer doesn’t agree to be measured by the instrument,…

…De Beers would say “bye, bye.”

We show: If De Beers follows such policies,…

…the firm will maximize profits by producing the same quantity that would be produced in a perfectly-competitive equilibrium.

Why? Because the firm profits from every unit with $WTP > MC$.

---

**Perfect Price-Discrimination**

Suppose that a perfectly discriminating monopolist sells $q - 1$ units.

If the firm wants to sell one more unit, it must charge the next customer price $p$ (his $WTP$).

Because the firm can charge different prices to different buyers,…

…it doesn’t have to reduce prices to other buyers.

Therefore, $MR$ is always the same as $p$ and $WTP$.

So profits on that unit are $P - MC$.

The firm will continue to increase sales as long as $p > MC$,…

and will stop just before $p < MC$.

At $q_M$, social surplus is maximized, but the monopoly gets all of the surplus as producer surplus, and consumers get none 🙁.
Other forms of Price Discrimination

- In the real world, firms cannot perfectly identify an individual’s WTP,…

- …but they can test people and put them in groups with different WTP ranges 😞.

  - Age-based discounts on movies, airline tickets
  - Airfares with Saturday-night stay-over
  - Sellers like the lobster seller in the example
  - “Local resident” discounts in coffee shops
  - Use of obstacles: coupons in newspapers, mail-in rebates

When is Price-Discrimination Effective?

- Price discrimination is difficult when goods can be resold with low transaction costs.

- In the case of De Beers, people with low WTP could buy diamonds and resell them to those with high WTP.

- Price discrimination is more effective in the case of services.

  - **Example:** Student discounts for haircuts. [It is difficult to resell a haircut.]

  - **Example:** Lower tuition for poor university students. [Hard to sell your education.]
Should Price Discrimination be legal?

- **Example:** Medication for treating Covid-19.

- *Pfizer* has promised to allow poor nations to buy generic Covid medicine.

- Price discrimination allows Covid medication to be more expensive in rich countries than in poor ones.

- Price discrimination increases social surplus, because
  - more medicine will be produced, and
  - consumers in poor countries will be able to buy them.

- But with price discrimination,
  - pharmaceutical companies can make huge profits in rich countries…
  - at the expense of rich-country consumers.

Suppose price-discrimination were outlawed.

- Pharmaceutical companies might charge close to the rich-country price everywhere,…

- and medicines could become less available in poor countries.
Regulating Monopolies

- Some monopolies are regulated by government agencies.
  - Utilities: electricity, gas, water, etc.
  - Local telephone service.
  - Long-distance telephone service (in the past).

- Regulators often apply **price ceilings**.
  - When used in competitive markets, price ceilings tend to reduce output and social surplus,…
  - …and induce nonprice rationing.
  - What effect does a price ceiling have on a monopolized market?

---

Monopolies and Price Ceilings

- When a nondiscriminating monopoly faces demand and marginal cost $MC$,…
- the competitive price is $p^*$. 
- But the monopoly will set the price to $p_M$ and restrict the quantity to $q_M$. 
- But if a price ceiling $p_C$ is enacted at the competitive level $p^*$,…
- then $MR$ becomes $p_C$. Why?
- So the monopoly will increase output to $q^*$ (the competitive output level).
- Social surplus is maximized,…
  - the monopoly gets some producer surplus,
  - consumers get consumer surplus.
- **Difficulty:** in order to set an efficient price ceiling, the regulator needs to know both $D$ and $MC$. 

---

EC101 DD & EE / Manove  Monopoly>Regulation  p 13

EC101 DD & EE / Manove  Monopoly>Price Ceilings  p 14
Price-Discriminating Monopolists and Price Ceilings

- When monopolies cannot price-discriminate, price ceilings at the competitive level:
  - improve efficiency,
  - and redistribute the social surplus
    (For each unit, $WTP - P_{ceiling} = CS$.)

- Price-discriminating monopolists are already reasonably efficient,…

- so price ceilings at the competitive level do not raise efficiency very much, BUT…

- they do change the distribution of surplus in favor of the consumer.

Monopoly Rent-Seeking and Theft

- Monopolies engage in various kinds of rent-seeking.

- The most obvious is that they restrict production to create artificial scarcities.

- But some of the other things that monopolies do are similar to the kinds of things that thieves do when they steal bicycles or laptops, etc.

- We will begin the next section by discussing rent-seeking by thieves.
Theft, Rent Seeking and Social Surplus

**Example:** The Bicycle Thief *[	extit{Ladri di biciclette}]*

![The Bicycle Thief Film Poster](image)

*Film: 1948*

*Dir: Vittorio de Sica*

What happens to social surplus if someone steals your bicycle?

- You lose an amount of surplus equal to your WTP for the bicycle.
- The thief gains surplus equal to his WTP.
- Net gain in total surplus?

Theft (stealing) is a form of rent seeking! Why?

What are the social costs of the bicycle-theft activity?

- **Static costs**
  - Thief’s time and effort.
  - Owner’s effort and expense in order to avoid theft (e.g., the cost of locks).

- **Dynamic costs (over time)**
  - The thief will have less incentive to work if he can steal.
  - The owner will have less incentive to work if the goods he buys are often stolen.
The rent-seeking costs of stealing a bicycle are likely to be higher …

…than the gain in surplus created by a thief who values the bicycle more than the owner does.

Besides, if the thief really values the bicycle more than the owner, he could buy it, right?

Or maybe not. **Why not?**

---

**Clicker Question**

A thief breaks your car window and steals $100 from a handbag you left in the car. You decide to be more careful with valuable things in the future.

Which of the following does **NOT** represent a loss of social surplus?

a. the broken car window
b. the thief’s labor
c. the stolen $100
d. your additional care
Monopoly Rent-Seeking

- Nondiscriminating monopolies create *artificial scarcities* and inefficiency by restricting output.

- But perfectly discriminating monopolists do not create artificial scarcities.

- However, all monopolies tend to waste resources to protect their monopoly status.

- And firms that want to become monopolies tend to waste resources in trying to gain monopoly status.

- Rent-seeking costs may include:
  - managers’ time and/or legal expenses,
  - political campaign contributions and bribery,
  - setting prices below costs to punish competitors.

The costly attempt to obtain or maintain monopoly status is a form of rent-seeking.

- **Examples:**
  - gangsters, drug cartels
  - NCR
  - De Beers 😞

- When monopoly status is conferred as a *legally enforceable intellectual property right* (patents and copyrights),…

- …rent-seeking behavior may be discouraged, but certainly not eliminated—as we shall see.
After restricting production, the monopoly can raise its price and obtain monopoly rents.

But this strategy can work only if the monopoly can prevent potential competitors from entering the market at a lower price.

To maintain its monopoly position, the monopolist must pay rent-seeking costs,…

…which reduce its own surplus and social surplus.

Potential competitors are also likely to pay rent-seeking costs,…

which reduce social surplus more.

Price-discriminating monopolists have exactly the same problem.

Patents and copyrights create legally owned monopolies.

Yet, costly disputes over intellectual property rights are common.

Example: Apple vs. Samsung mobile phones*

- Apple and Samsung sued each other for patent infringement in the US, Korea, Japan, Germany and 6 other countries,…
- …with more than 50 lawsuits worldwide.
- On August 24, 2012, a US jury awarded Apple more than $1 billion in damages to be paid by Samsung.
- In the Korean lawsuit, the verdict was mixed.
- It seems likely that Apple and Samsung spent hundreds of millions of dollars on lawyers and expert witnesses.
- These lawsuits are costly rent-seeking activities with little or no social value.

Example: Awards of mobile-phone radio spectrum create legally owned monopolies.

- In some countries (e.g. US, UK and Germany), spectrum for the use of mobile phones was allocated by auction.

- In other countries (e.g. France, Spain, Italy), spectrum was allocated by what economists call “beauty contests.”

- Auctions force companies to pay for the spectrum they want,…

- …but beauty contests encourage rent seeking.

- Applicant firms spent €€€ [$$] on beauty contests, but the money spent created no social surplus.

Clicker Question

What types of firms are most likely to engage in costly rent-seeking in order to protect their market positions?

a. competitive firms
b. monopolies
c. small businesses
d. industrial firms
End of Lecture 20

Happy Thanksgiving!