

Lecture 7

Monopoly pricing – part II



microeconomics II
first module

Before we start

* **Homework 3** will be available this evening. ^^

Price discrimination

Second-degree price discrimination

- * Under the second-degree price discrimination the firm offers **different versions** of the product
- * Again **groups** of consumers are formed according to quantity, quality, variety etc.
- * Consumers now **self-select** which consumer group they will join
grouping should be **clever** so that consumers **reveal** their real willingness to pay with their choice of group
- * We will see **several different methods** of this kind of self-selection discrimination. ^^

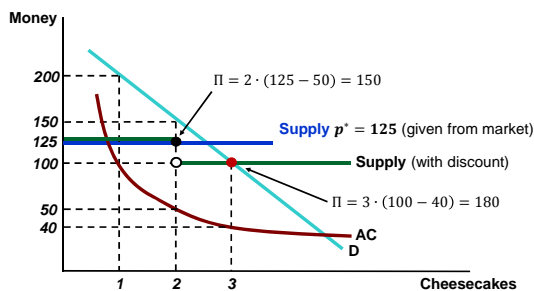
Second-degree PD

Quantity discounts

- * Quantity discounts are an **example** of second-degree price discrimination
- * The firm gives **better prices** to those who **buy more**
- * For **example**:
 - ◆ 1.5 liter **coke** is cheaper per liter than the 330ml can
 - ◆ Buy 2 **pizzas** get 1 free
- * Quantity discounts are **profit maximizing** for the firm
 - ◆ Because for most goods **willingness to pay decreases** significantly with quantity consumed
 - ◆ **Other reasons**: cost efficiency, risk handling. ^^

Second-degree PD Quantity discounts

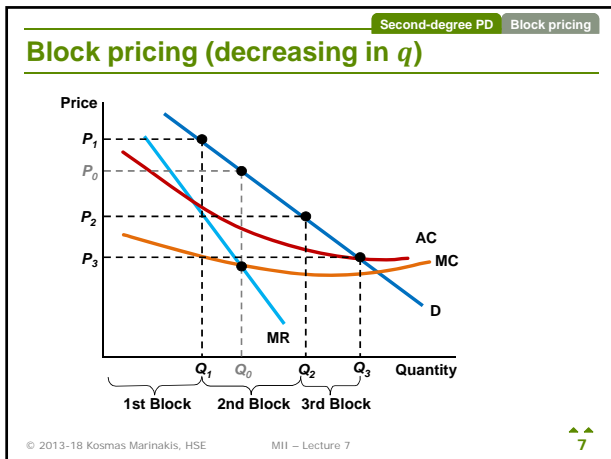
Quantity discounts – example



Second-degree PD

Block pricing

- * Block pricing is **another way** of second-degree PD
- * The seller charges different **prices** for different **blocks** of quantities of the good
- * Examples
 - ◆ **Electric company** pricing per Kw/h
 - ◆ 8 first **dance lessons** for 2400, next 8 lessons for 2700
- * Block pricing is **profit maximizing**
consumers at the high blocks have more **inelastic** demand
- * Block pricing is also effective in **saving resources**. ^^



Second-degree PD

Coupons and rebates

- * Coupons and rebates are used by consumers who exhibit **lower willingness** to pay for the product
consumers who are more price elastic
- * Their use involves **costs**
cost of effort, time, hassle, social cost
- * Coupons and rebate programs allow firms to exercise second degree price discrimination

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Second-degree PD Coupons and rebates

The economics of coupons and rebates

- * Several consumers **plan** to use coupons or rebates
- * Most **forget**, become lazy or fail to follow the process through
- * In the end, **only** 20 – 30% of consumers use them
- * Firms can get those with higher elasticity of demand to purchase a good that **would not normally buy**

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Second-degree PD Coupons and rebates

Users vs. non-users of coupons

Product	Non-Users	Users
Toilet paper	-0.6	-0.7
Shampoo	-0.8	-1.3
Cat food	-0.5	-1.1
Hot dogs	-0.6	-0.8
Cooking oil	-1.2	-1.3

Elasticity of demand is lower for non-users of coupons and rebates

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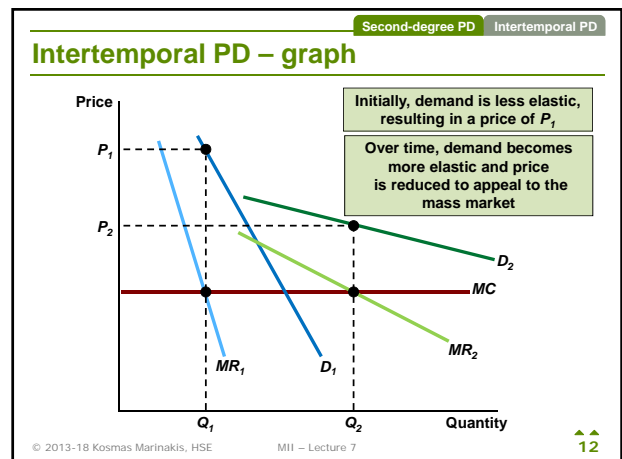
Second-degree PD

Intertemporal price discrimination

- * Consumers are grouped according to their **time preference** in consuming the product
 - ◆ **Enthusiasts:** *Inelastic* demand – they need the product ASAP
 - ◆ **Usual consumers:** *More elastic* demand – they can wait for price to go down

1. Firm releases the product and **initially** charges a **high** price to **target enthusiasts**
2. Once this market has yielded a maximum profit, price is **lowered** to **appeal to the usuals**
examples: books, movies, gadgets

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“Special-edition” pricing

- ★ Enthusiasts are willing to pay **more** for the good than usual customers
- ★ The seller can take advantage of those consumers by releasing **two versions** of the product
 - ◆ An expensive “special-edition”
 - ◆ A cheaper “basic version”
- ★ Those who really **care** will go for the special edition – those who do not really want to pay much will go for the simple one.

Combinations of methods

- ★ Quite often **more than one** pricing methods are used by modern firms
- ★ For instance, “special-edition” pricing may be **combined** with intertemporal PD
 - ◆ Release special edition, first
 - ◆ After a few months, release basic version
- ★ For example, the pricing for **movies** and **novels** usually involves the combination of several methods
 - ◆ For **novels** the special edition comes first
 - ◆ For **movies** the reverse.

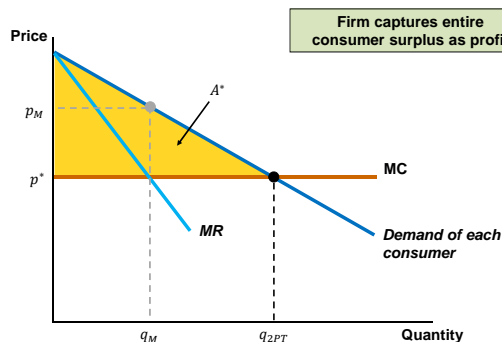
Two-part tariff pricing

- ★ Form of pricing in which consumers are charged both an **entry fee** and a **usage fee**
- ★ The **entry fee**, A , is charged upfront for **right to use/buy** the product
- ★ An additional **usage fee**, p is charged for **each unit** the consumer wishes to consume
 - ◆ **Example:** Night clubs, mobile service, personal printers, bowling alleys
 - ◆ A is renting the shoes and p is the price of each bowling game.

The two-part tariff

- ★ The pricing **scheme** is then $A + pq$
- ★ Pricing decision is **setting A and p** to maximize profit
- ★ First, no matter how you chose A and p , you **cannot make** consumers pay above their **reservation price** thus, there is a **trade-off** between A and p
- ★ If consumers are **similar**, the firm can capture the entire CS
similar means that their **demand curves** look the same.

Two-part tariff – similar consumers

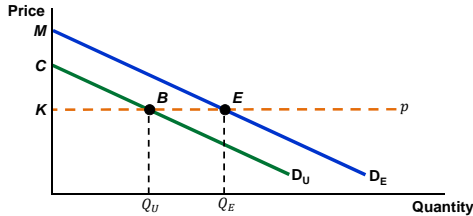


Different consumer types

- ★ Assume now that we have **two types** of consumers each type has a **different demand**
- ★ The firm **cannot identify types** and will set only **one combination** of (A^*, p^*) .

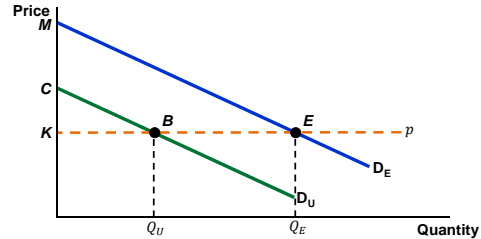
Surplus

- ★ If we set price p :
 - ◆ Surplus for usuals will be $S_U = KBC$
 - ◆ Surplus for enthusiasts will be $S_E = KEM$
- ★ **How** should we **set** A ?



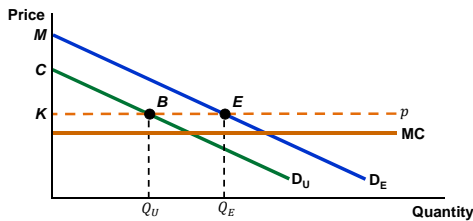
Serve only the enthusiasts

- ★ If $S_E \gg 2S_U$, you **may not** want to serve the usuals
 - ◆ Setting $p^* = MC$ and $A^* = S_U$ results into **losses** from entry fee usuals are willing to pay
 - ◆ Pricing-in usuals **costs more** than what it brings in



Serve both types

- ★ If types are **not too far apart**, you **may** want to serve both
 - ◆ Unit price: p^* will be set **above** MC
 - ◆ Entry fee: A^* is set equal to $S_U = KBC$



Many consumer types

- ★ With many types, there is **no easy way** to determine exactly the optimal p^* and A^*
- ★ Let $n(A)$ be the **number of entrants**
 n is a function of A ($dn/dA < 0$)
- ★ Revenue is

$$R(A, p) = n(A) \cdot A + n(A) \cdot p \cdot \bar{q}$$
- ★ Notice the **trade-off** as A^* increases:
 - ◆ Less revenue from sales, $\partial(n(A) \cdot p)/\partial A < 0$
 - ◆ Ambiguous change in revenue from entry, $\partial(n(A) \cdot A)/\partial A \lesseqgtr 0$

Approximate optimum with many types

- ★ To find **optimum combination** of p^* and A^* we can use **trial and error**
until we find the combination that maximizes profit

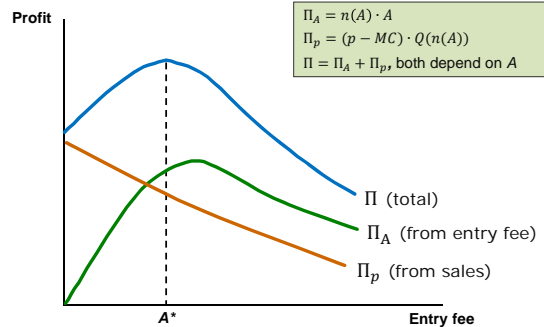
- ★ For this problem the total profit:

$$\Pi = n(A) \cdot A + (p - c) \cdot q(n(A))$$

can be **decomposed** into two parts:

1. $\Pi_A = n(A) \cdot A$
2. $\Pi_p = (p - c) \cdot q(n(A))$

Many different consumer types



The 2PT rule-of-thumb

- * **Similar** demands
choose p *close* to MC and *high* A
- * **Dissimilar** demands
choose *higher* p and *lower* A
- * **Example: theme parks** have a strategy of high entry fee and charge nothing for the rides.

2PT & bundling

- * Entry price (A) **entitles** the buyer to a fixed number of free units
 - ◆ **Razors** sold with several blades
 - ◆ **Printer** comes with free set of inks
 - ◆ **Night club** entrance cover comes with one free drink
- * This way the seller can **set higher** A without losing the **usuals**
while capturing more of **the surplus** of enthusiasts.

Thank you!



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