

Microeconomic Analysis

Seminar 4

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Price Discrimination

- A firm with market power faces a downward sloping demand curve.
- In the standard case of non-discriminatory pricing, in order to sell one unit more of output, the firm must lower its price. Yet, this means lowering the price not only to the new incremental customer but to all of them.
- Relaxing the restriction against the price-discrimination enables the monopolist to earn more profit...but also to sell more output and thereby come closer to the efficient production level!

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Traditional techniques to solve the two obstacles are classified into three broad types: first-degree, second-degree, and third-degree price discrimination.

More recently these price schemes have been referred to respectively *personalized-pricing*, *menu-pricing*, *group-pricing*.

First-Degree Price Discrimination

Personalized-pricing occurs when the monopolist is able to charge each consumer the maximum price that the consumer is willing to pay, for each unit that the consumer purchases. This is also referred as *perfect price-discrimination*.

It requires that the firm receives a perfect signal of the true “type” and willingness to pay of each of its potential consumers, and that the firm can prevent arbitrage between consumers.

Two-part pricing

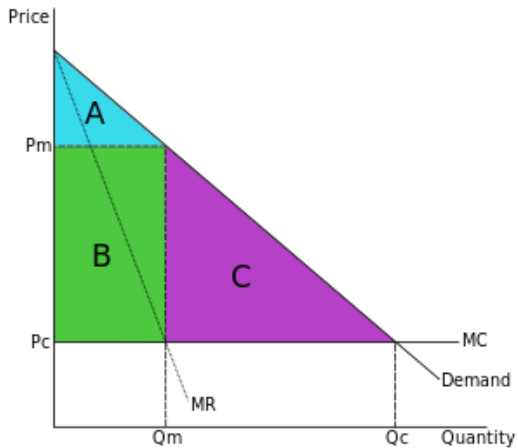


Figure: Two-parts pricing

Two-part pricing

We remark that we can extend the two-part pricing to the case where the consumers are not identical. As long as the firm knows each consumer's type and the willingness of each to pay for quantity sold.

Third-Degree Discrimination

Suppose that the firm can observe some exogenous characteristic or type (sex, age, occupation, etc). Each group has a downward sloping demand curve for the product produced by the monopolist, which is known by this.

The monopolist can prevent arbitrage *between* groups.

However, he cannot price-discriminate *within* a group.

Third-Degree Discrimination

Suppose i and j are two groups. It is possible to derive the following expression

$$\frac{p_i}{p_j} = \left(\frac{\epsilon_i}{\epsilon_i - 1} \right) \left(\frac{\epsilon_j - 1}{\epsilon_j} \right) > 1 \text{ if } \epsilon_i < \epsilon_j$$

or the monopolist should charge more to groups with inelastic demand and less to groups with elastic demand.

Third-Degree Discrimination

Is the Third-Price Discrimination better for the Welfare than the uniform-price discrimination?

It can be shown that a necessary condition for a third-price discrimination to raise welfare relative to uniform pricing is that it must lead to a raise in the firm's total output.

Second-Degree Discrimination

Also referred as *menu-pricing*.

In the first and third-price discrimination the monopolist solved, at least partially, the identification problem.

Suppose that it is not possible. The monopolist needs to design a price-scheme to induce customers to reveal their true type for herself.

The idea is to offer buyers a menu of options or packages

Example 1: Third-degree Discrimination

Many packages available for mobile phone services in US (Verizon, T-Mobile, AT&T, etc):

- Family plan: two lines for fixed monthly fee. After that, each minute of calling is free up to a specified amount.
- Low-levels plans offer 700 minutes for free at a monthly fee
- High-user plans offer Higher fee but more free minutes

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Example 2: Third-degree Discrimination

In New York about 25,000 people, on average, attend Broadway shows each night.

Dr Philip Leslie studied the Broadway ticket price discrimination using data for a 1996 play “Seven guitars”. He found 17 different price categories. Even adjusting for “quality of seats”, the large differences remain (40% of difference in price of two randomly picked tickets).

The average price was 55, the price which would have maximised the profit was 60, while an optimal uniform price would have been 50.