

# Quadrant II – Transcript

**Paper Code: ECC 102**

**Module Name: Price discrimination (Meaning and Types)**

**Module No: 12**

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Hello students! I am Rupali Tamuly, Associate Professor, Department of Economics, Parvatibai Chowgule College of Arts & Science, Autonomous, Margao -Goa .

Today I am going to discuss module 12, Price Discrimination (Meaning & Types) from unit 2 Monopoly of Course Micro economics II taught at FYBA in second semester.

Upon completion of this module you will be able to:

- Understand the meaning of price discrimination.
- Distinguish between different types of price discrimination

Introduction:

Monopolist enjoys the status of being single seller and hence is in a position to manoeuvre the market to price discrimination. Price discrimination refers to the practice of a seller selling the same good at different prices to different buyers. Monopolists practices price discrimination between different buyers when it is both possible and profitable to do so. For example: If a seller sells a flat screen television of 15 inches at Rs 1 lakh to one buyer and at Rs 1.5 lakh to another buyer (all conditions of sale & delivery being the same in two cases), this is a case of price discrimination.

Examples of Price discrimination:

- **Airline Travel:** Airlines charge different prices depending on the season, time of the flight and day of the week. During the peak holiday season, the prices will be higher because demand is greater and more inelastic.
- **Quantity Purchased:** Many sellers offer quantity discounts for bulk purchases as a way to get buyers to buy more.
- **Coupons:** Companies often give coupons to selected consumers. For example, Nyka sends coupons to regular customers to get special offers, e.g. 20% off selected items.
- **Age Discounts:** A popular way to segment the market is by age category, e.g., students often get discounts on travel and retail. Students almost always have lower income than working adults and so are more sensitive to changes in price.
- **Choosing Your Seat Early:** Airplanes offer numerous ways to charge different prices for privileges like choosing a seat early or priority check-in. These perks are a way of extracting higher prices from those who want to pay for extras.

- **Three for Two offers:** Bookstores often advertise that you can buy three books for the price of two to encourage consumers to buy a higher quantity.

Type of price discrimination

1. First degree: firm would charge each customer maximum price that the consumer is willing to pay for each unit bought. This is called customers reservation price. The practice of charging each consumer his or her reservation price is called as first-degree price discrimination.

In the given diagram: we can see how this affects firms' profits. Say firm charge single price  $P^*$ . To know the profit earned, the profit on each incremental unit produced and sold until quantity  $Q^*$ . This incremental profit is marginal revenue less than marginal cost for each unit. In the given diagram this marginal revenue is highest and marginal cost lowest for the first unit. At output  $Q^*$  firm marginal revenue is equal to marginal cost.

In the given diagram: we can see how this affects firms' profits. Say firm charge single price  $P^*$ . To know the profit earned, add the profit on each incremental unit produced and sold up to the total quantity  $Q^*$ . This incremental profit is marginal revenue less than marginal cost for each unit.

In the given diagram this marginal revenue is highest and marginal cost lowest for the first unit. At output  $Q^*$  firm marginal revenue is equal to marginal cost.

When profit on each incremental unit produced is added, firms' variable profit is obtained.

Variable profit is given by the light shaded area between marginal revenue and marginal cost curves.

Consumer surplus which is the area between the average revenue curve and the price  $P^*$  that consumers pay is outlined by black triangle in diagram 1.

**Perfect price discrimination:** when firm is able to charge each consumer exactly what he or she is willing to pay, marginal revenue curve is no longer relevant to firms output decisions. Instead incremental revenue earned from each additional unit sold is simply the price paid for that unit and given by the demand curve.

Since price discrimination does not affect the firms cost structure, the cost of each additional unit is again given by firms marginal cost curve. Additional profit from producing and selling an incremental unit is now the difference between demand and marginal cost.

As long as demand exceeds marginal cost, firm can increase its profit by expanding production.

Firm will do so until it produces total output  $Q^{**}$ .

At  $Q^{**}$  demand is equal to marginal cost. Variable profit is given by the area between demand and marginal cost curve. Additional profit is shown by shaded grey colour in diagram 1.

Since every consumer is charged maximum amount each is willing to pay all consumer surplus is captured by the firm.

Perfect price discrimination is almost not possible:

- Impractical to charge each and every consumer different price.
- Firm usually does not know the reservation price for each consumer.

- Even if it knows, the estimation of willingness to pay may still be inaccurate

**Imperfect price discrimination:** Firms can discriminate imperfectly by charging a few different prices based on estimates of customers reservation prices.

This practice is used by professionals such as doctors, lawyers, accountants who know their client reasonably well. Clients willingness to pay is assessed and fees are set accordingly.

Eg. Doctor charging less to poor patients.

Lawyers taking up pro-bono cases.

Colleges charge different tuition fees for students with different income bracket.

Imperfect price discrimination with diagram:

If single price charged it would be  $P^*_4$ . Instead six different prices are charged.

Lowest price is  $P^*_6$  which is about the point where marginal cost intersects the demand curve. Consumers who pay  $P^*_5$  and  $P^*_6$  enjoy more consumer surplus. (Diagram 2)

Second degree Price discrimination

In some markets as each consumer purchases many units of a good over any given period, the reservation price declines with the number of units purchased.

For eg. consumers may purchase few hundred-kilowatt hours of electricity a month, but their willingness to pay declines with increasing consumption.

For eg. in beyond certain point of consumption of electrical units for households, a different rate and higher rate is charged.

Day time taxi charges and night time taxi charges.

Quantity discounts on bulk purchase or two on one free offer.

Block pricing: consumer is charged different prices for different quantities or blocks good.

Second degree price discrimination for a firm with declining average and marginal cost.

If single price is charged, it would be  $P_0$  and quantity would be  $Q_0$ .

Three different prices are charged based on quantities purchased. In the diagram there are three blocks with corresponding price  $P_1$ ,  $P_2$ ,  $P_3$ . ( diagram 3)

Third degree price discrimination

Practice of dividing consumers into two or more groups with separate demand curves and charging different prices to each group.

This is the most prevalent form of price discrimination.

For eg. regular versus special airlines, discount to students and senior citizens.

Consumer groups: some characteristics are used to divide consumer into different groups. Information about their incomes may be readily available like students, senior citizen whose willingness to pay be less on average than the rest of the population.

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Consumers are divided into two groups with separate demand curve for each group.

Optimal prices and quantities are such that the marginal revenues from each group is same and equal to marginal cost.

Group 1 with demand curve  $D_1$  is charged  $P_1$  and group 2 with more elastic demand curve  $D_2$  is charged the lower price  $P_2$ .

$D_1$  for first group of consumers is less elastic than curve for the second group  $D_2$ .

Marginal cost depends on total quantity produced  $Q_T$ .

The total quantity is produced is  $Q_T = Q_1 + Q_2$ .

$Q_T$  is found by summing marginal revenue curve  $MR_1$  and  $MR_2$  horizontally which yields the dashed curve  $MR_T$ . And finding its intersection with marginal cost curve.

Because  $MC$  must be equal to  $MR_1$  and  $MR_2$ , a horizontal line leftward from this intersection to find quantities  $Q_1$  and  $Q_2$ . (diagram 4)

#### **Intertemporal price discrimination**

Consumers are divided into high demand and low demand by charging a price that is high at first but falls later.

eg : Publisher charges high price for hardcover edition of a book and then to release the paperback version at much lower price a year later. The reason is that once the book is edited and typeset, the marginal cost of printing an additional copy whether hardcover or paperback is quite low.

Paper back is sold for much lesser because hardbound edition is already purchased by high demand consumers.

Peak loading pricing.

Involves charging different prices at different points in time.

Objective is to increase efficiency by charging consumers prices that are close to marginal cost.

For some goods and services, demand peaks at particular times.

eg roads and tunnels during rush hours, hill stations during summer, xerox machines during submissions.

#### **As emphasised by Mrs. Robinson:**

“It may happen, for instance, that a railway would not be built, or a country doctor would not set up in practice, if discrimination were forbidden. From the point of view of society, it is only necessary that the concern should make sufficient profits to maintain the efficiency of the plant, and not a profit which would have been sufficient to justify the original investment.”

Thank you students

