

Market Structure, competition and firm strategies

Dr. Ernil Sabaj

Warwick Summer School
International Business and Finance

24 July 2025

- Familiarize ourselves with Market Structure and Competition.
- Models of product differentiation.
- What tests can we run to measure the level of competition in a market?
- Recognise how prices are determined in practice.
- Explain why firms sometimes charge different prices to customers for the same product.
- Recognise how pricing varies with each stage in the life of a product.

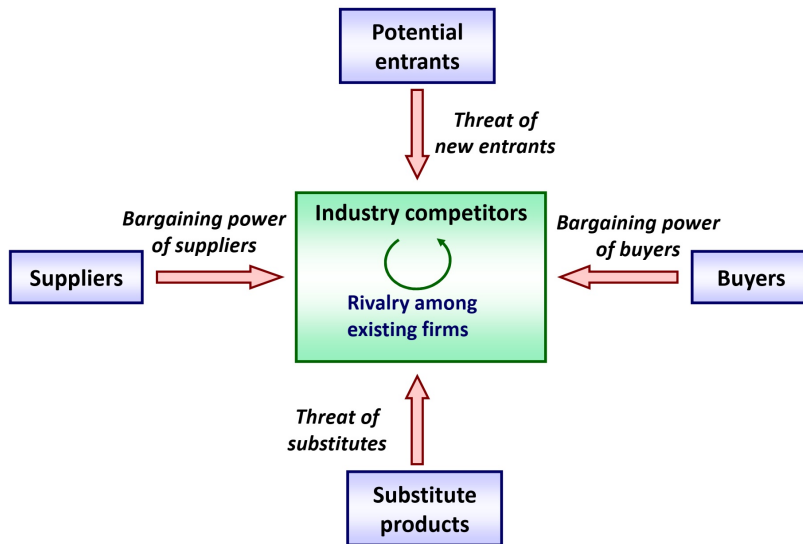
- **Textbooks**

- **Chapters 14, 16, 17** in John Lipczynski, John Goddard and John O.S. Wilson, *Industrial Organization: Competition, Strategy and Policy*, 5th Edition, Pearson Education, 2017
- Chapter 14, 17, in Sloman, John, et al. *Economics for Business Enhanced*. Available from: VitalSource Bookshelf, (9th Edition). Pearson International Content, 2024.
- Chapters 12,13,14 and 15 in Michael Parkin, *Microeconomics*, Global Edition, 14th Edition, Pearson Education, 2022

Today's class



Porter's Five Forces Model



Source: Michael E. Porter Competitive Strategy: Techniques for Analyzing Industries and Competitors, (The Free Press, 1980)

Porter's Five Forces: Horizontal

- A good place to start in order to understand the horizontal forces in Porter's model is to consider economic theories of market structure since they provide insights and outcomes relating to:
 - Number of competitors
 - Entry of competitors and barriers to entry
 - How firms compete (price versus quantity)
 - Product differentiation and market segmentation
- In order to understand the nature of rivalry between firms it is useful to understand the nature and outcomes of competition.
- The nature and intensity of competition will determine whether entry into a given market is likely to be profitable, in both 'short run' and 'long run'.
- The nature and intensity of competition can frequently be determined by the 'structure' of the market – the number of firms, degree of differentiation, and 'barriers to entry'.

The neoclassical theory of the firm: typology of market structures

- We will look at four different structures – understanding the characteristics of these archetypal markets can help form predictions over long and short-term profitability:
 - Perfect Competition (most competitive, least market power)
 - Monopolistic Competition
 - Oligopoly
 - Monopoly (least competitive, most market power)
- The degree of competitiveness of a market is inversely related to the market power of individual firms within that market

	No. of firms	Entry conditions	Product differentiation
Perfect competition	Many	Free entry	Identical products
Imperfect competition			
Monopolistic competition	Many	Free entry	Some differentiation
Oligopoly	Few	Barriers to entry	Some differentiation
Monopoly	One	No entry	Complete differentiation

Product Differentiation: Can you provide some examples?

To keep making an economic profit, a firm in monopolistic competition must be in a state of continuous product development. New product development allows a firm to gain a competitive edge, if only temporarily before competitors imitate the innovation.

- **Location**

- If firms (or shops) choose to locate away from each other, then the lack of localized competition enables firms to raise their price a little. We can also think of 'travel costs' as 'search costs' if consumers need to expend effort to locate or learn about a product.

- **Product features**

- If similar products differ in their features, they become imperfect substitutes for each other. While many customers may be indifferent between two slightly differentiated products, there may be a very small subset who have specific preferences – this gives firms a degree of 'market power' over these customers.

In the economics literature, it is customary to distinguish between vertical and horizontal product differentiation (Beath and Katsoulacos, 1991).

- First, **vertical product differentiation** means one product or service differs in overall quality from another.
 - For example, one brand of fruit juice may have higher fruit content and lower sugar content than another brand, and as such is recognised as a higher-quality brand by all consumers.
- Second, **horizontal product differentiation** means products or services are of the same or similar overall quality, but offer different combinations of characteristics.
 - For example, Ford Focus, Vauxhall Astra, Honda Civic, Volkswagen Golf and Toyota Corolla are all similar brands or models of car, but each one offers a slightly different package of attributes.

- With **natural product differentiation**, the distinguishing characteristics arise from natural attributes or characteristics, rather than having been created through the deliberate actions of suppliers.
- With **strategic product differentiation**, the distinguishing characteristics are consciously created by suppliers; for example, through a decision to create a new brand and promote it by means of advertising or other types of marketing activity.
- Sometimes, however, the distinction between natural and strategic product differentiation is not clear-cut.

Natural product differentiation

- **Geographic variation.** In this case, the location of a seller automatically differentiates a product or service in the minds of consumers. Clearly the corner shop and the out-of-town superstore offer competing services that are differentiated in the minds of consumers on the basis of location.
- **New technology.** New technology can be used to differentiate a product; for example, through the addition of internet and email features to a mobile telephone.
- **Brands and trademarks.** Trademarks are words or symbols used to identify particular brands. In many cases, a firm that has developed a trademark will also hold exclusive property rights to use the trademark. Eg. Lacoste, Armani or Ralph Lauren clothing.
- **Community or national differences.** The country or community of origin might be the defining attribute that differentiates goods and services. In other words, products and services from certain parts of the world are deemed to be different and of higher quality. Examples include Russian vodka, Scottish whisky, Swiss watches.
- **Consumer tastes and preferences.** Consumers themselves have different attributes, tastes and preferences. Consequently, the product characteristics that are most desired vary from one consumer to another. Examples include the colour of cars and the style of clothes.

Strategic product differentiation

- **Additional services.** Additional services can often be used to differentiate products. Even if the same product is available from two suppliers, the conditions surrounding the sale might be different. Suppliers might differentiate their products by offering cheaper credit, faster delivery times or a more comprehensive after-sales service.
- **Rate of change of product differentiation.** Products with a short natural lifespan can be subjected to planned obsolescence, especially in cases where the product accounts for a relatively small proportion of most consumers' budgets.
- **Factor variations.** Factor inputs such as labour and capital are rarely homogeneous. This creates opportunities for final outputs produced using differentiated factors of production to be marketed as distinct from those of other firms. For example, a supplier might claim its employees are more highly skilled, better trained or less prone to make errors.
- **Consumer ignorance.** Ignorance on the part of consumers can allow firms to exaggerate the extent of differentiation of their products and services. Suppliers sometimes exploit consumer ignorance through misleading advertising. Sometimes suppliers attempt to convince consumers that higher prices reflect higher quality.

Models of product differentiation

Models of product differentiation

In the economics literature, there are two basic approaches to the specification of consumer preferences and the modelling of firm behaviour in the case of horizontal product differentiation (Waterson, 1994).

● Representative consumer models

- Consumers choose based on their preferences.
- Firms compete by offering different products.
- Demand depends on the firm's price and competitors' prices.

● Spatial or location models

- Consumers prefer certain product characteristics.
- Small price changes affect demand if products are similar.
- But be independent of small changes in the price set by a third firm, whose product characteristics are further removed

- Consider the high-street food chains McDonald's, Burger King and Pizza Hut.
- Burger King's price cut affects McDonald's demand.
- Pizza Hut's small price cut doesn't affect burger demand.
- Large price cut by Pizza Hut might make burger consumers switch to pizza.

- **Lancaster's product characteristics model**

- Consumers derive utility not from the goods they consume but from the characteristics that are embodied in those goods. Goods are viewed as bundles of characteristics, and differentiated goods or brands are goods that contain the same characteristics in different proportions. For example, when you decide which car to buy, you consider an array of characteristics.

- **Hotelling's location model**

- The products themselves are identical, but if all firms were charging the same price, all consumers would prefer to purchase from their nearest supplier. This means each firm has a certain amount of market power. A firm that raises its price does not automatically lose all its customers to its competitors.

- **Salop's location model**

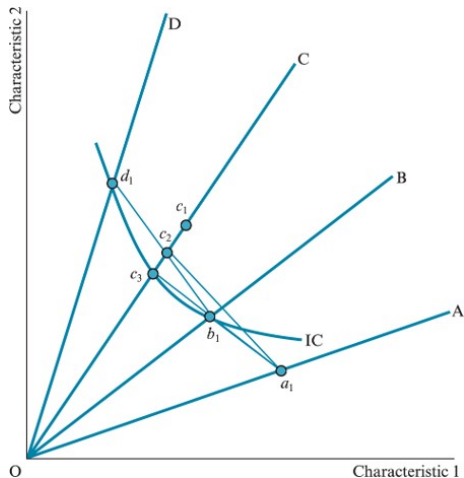
- A modified version of the Hotelling model, in which the firms and consumers are located around the circumference of a circle. Eg. A group of rival airlines offering flights on a particular route at different hours of the day and night, around a 24-hour clock. Each airline offers a flight at a particular time, and each passenger has a preferred departure time, which varies between passengers (and which might be anytime, day or night).

Lancaster's product characteristics model: Examples of products and their characteristics

Product	Characteristic 1	Characteristic 2
Breakfast cereals	Crunchiness	Fruitiness
Curry sauces	Flavour	Hot, medium or mild
Musical acts	Beat	Melody
Cars	Spaciousness	Manoeuvrability

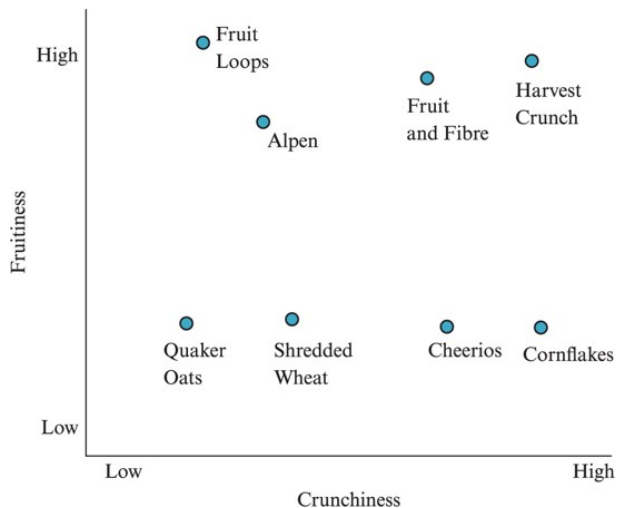
Lancaster's product characteristics model

A product with preferred characteristics (i.e., a product whose characteristics match the consumer's ideal point) is always more preferred.



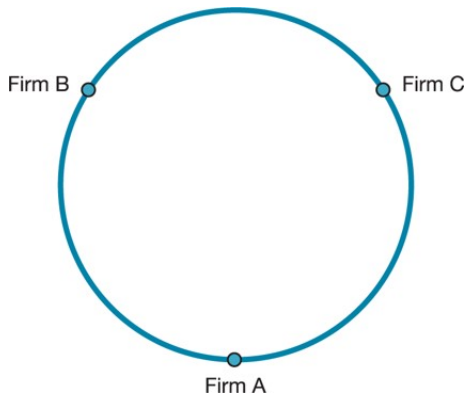
Hotelling's location model

The product with features closer to your location is more preferred.



Salop's location model

In this model each firm's market segment becomes narrower, and the preferences of the consumers each firm retains become more closely aligned with the characteristics of that firm's product. Although consumers pay a higher price, they obtain a product with characteristics closer on average to their ideal product specification.



Advertising

- A firm with a differentiated product needs to ensure that customers know that its product differs from its competitors.
- Firms use advertising and packaging to achieve this goal.
- A large proportion of the price we pay for a good covers the cost of selling it.
- Advertising expenditures affect the firm's profit in two ways: They increase costs, and they change demand.

Advertising as a percentage of gross domestic product (at market prices)

Country	1996	1998	2000	2002	2004	2006	2008
Austria	0.72	0.83	0.97	0.90	0.94	0.94	1.05
Belgium	0.65	0.74	0.81	0.83	0.85	0.85	0.79
Denmark	0.82	0.87	0.77	0.68	0.77	0.77	0.72
Finland	0.87	0.91	0.93	0.90	0.92	0.92	0.81
France	0.65	0.64	0.71	0.63	0.66	0.66	0.57
Germany	0.89	0.93	1.00	0.84	0.80	0.79	0.78
Greece	0.79	0.85	1.02	0.95	0.81	0.80	0.81
Ireland	0.96	0.95	1.13	0.96	0.88	0.86	0.85
Italy	0.49	0.55	0.69	0.60	0.69	0.70	0.58
Japan	0.76	0.75	0.79	0.73	0.81	0.81	0.85
Netherlands	0.90	0.95	0.97	0.84	0.76	0.74	0.75
Norway	0.81	0.85	0.73	0.73	0.67	0.70	0.58
Portugal	0.76	0.87	1.14	1.08	1.48	1.49	1.32
Spain	0.83	0.83	0.89	0.75	0.78	0.78	0.64
Sweden	0.75	0.85	0.83	0.67	0.78	0.84	0.79
Switzerland	0.93	0.94	1.07	0.97	0.85	0.83	0.76
UK	1.16	1.24	1.30	1.12	1.23	1.18	1.00
United States	1.28	1.30	1.39	1.21	1.40	1.35	1.09

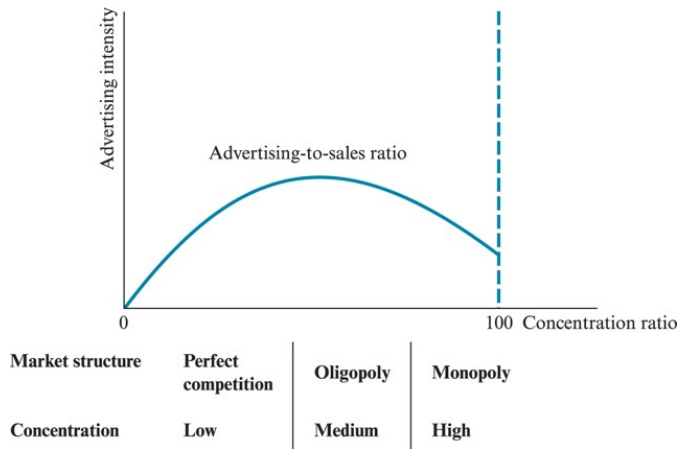
Note: Data are net of discounts. They include agency commission and press classified advertising expenditure but exclude production costs.

Source: The European Advertising and Media Forecast, National Data Sources, NTC Publications Ltd. Reproduced from Advertising Association (2003) Advertising Statistics Yearbook 2003, Table 19.4, p. 183; and Advertising Association (2009) Advertising Statistics Yearbook 2009, Table 19.4, p. 221. Oxford: NTC Publications. Reprinted with permission

Advertising-to-sales ratios of selected UK product groups, 2008

Product group	Advertising-to-sales ratio
Airlines	3.85
Babycare products	39.70
Bath and shower additives	1.55
Beer	0.05
Blu-ray disc	5.28
Carbonated soft drinks	8.48
Cars	0.03
Cereals	7.11
Cheese	14.95
Chocolate bars	2.43
Cinema	0.30
Coffee	3.11
Deodorants	8.64
DVD players	0.68
Hair colourants	16.48
Internet service providers	21.84
Magazines	6.66
Mobile telephones	9.18
Motor insurance	8.79
Rail travel	0.97
Shampoos	2.59
Sportswear	0.26
Tea	2.49
Televisions	0.58
Vitamins	9.62

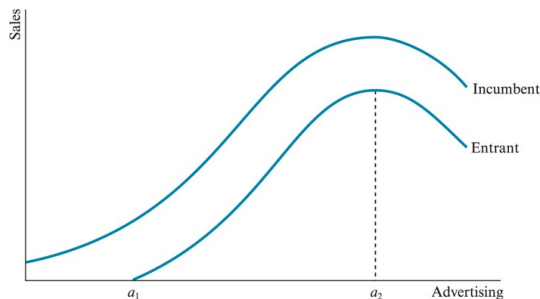
Advertising, market structure and concentration



Source: Adapted from Advertising Association (2009) Advertising Statistics Yearbook 2009, Table 18.1, pp. 206–12, researched and compiled by WARC (<http://www.warc.com>).

Advertising response functions

- For the entrant, assumed to be advertising its product or brand for the first time, a threshold level of advertising expenditure of a 1 must be achieved before its advertising begins to have any positive effect on sales.
- Saturation point is reached at an advertising expenditure level of a 2. Any further advertising beyond a 2 has a harmful effect on sales: consumers become fed up with receiving the firm's advertising messages, and stop buying the product or brand.
- The incumbent benefits from name recognition so doesn't have the same problems.



Measuring competition

Herfindahl-Hirschman Index (HHI)

- Measures market concentration by summing the squares of the market shares of all firms in the market.



$$HHI = \sum_{i=1}^N s_i^2$$

where s_i is the market share of firm i and N is the number of firms.

- **Interpretation:**

- HHI < 1500: Competitive market.
- 1500 < HHI < 2500: Moderately concentrated market.
- HHI > 2500: Highly concentrated market.

- Indicates the level of competition and potential for market power abuse.

Rosse-Panzar Revenue Test

- The Rosse-Panzar test is used to assess the level of competition in a market.
- It is based on the relationship between a firm's revenue and its input prices.
- The test involves estimating the following regression:

$$\log TR_{i,t} = \beta_0 + \beta_1 \log W_{1,i,t} + \beta_2 \log W_{2,i,t} + \beta_3 \log W_{3,i,t}$$

where $TR_{i,t}$ is the revenue of firm i in year t , $W_{i,j,t}$ are the input prices, for example, labour, capital and land.

- The sum of the estimated coefficients $H = \beta_1 + \beta_2 + \beta_3$ is known as the H-statistic.
- $H = 1$: Perfect competition.
- $H < 0$: Monopoly or collusive oligopoly.
- $0 < H < 1$: Monopolistic competition.
- Helps determine the nature of competition in an industry. Assesses the competitive behavior of firms based on revenue response to input price changes.

- The Bresnahan-Lau test measures the degree of market power by estimating the markup over marginal cost.
- It involves estimating the following demand and supply equations to identify the market structure.:

$$Q = a - bP + u$$

$$MC = c + dQ + v$$

where Q is quantity, P is price, and $u, v =$ Error terms.

- The markup is given by:

$$\lambda = \frac{P - MC}{P}$$

Pricing in Practice

Is there a unique equilibrium price?

- in most cases, no

Factors determining price

- **The degree of competition:** Firms operating under monopoly or collusive oligopoly are likely to charge very different prices from firms operating in highly competitive markets.
- **Information on costs and demand:** Firms in the real world may have very scant information about the elasticity of demand for their product and for the products of their competitors, and how demand is likely to change.
- **The aims of the firm:** Is the firm aiming to maximise profits, or is it seeking to maximise sales or growth, or does it have a series of aims?
- **The life cycle of a product:** When a firm launches a product, it may charge a very different price from when the product has become established in the market.
- **past practices**

Cost Plus Pricing Formula

- In a highly influential study, Hall and Hitch (1939) report the results of interviews with the managers of 38 businesses, 30 of whom reported the use of some form of cost plus pricing formula.

Under cost plus pricing, the firm calculates or estimates its *AVC* (average variable cost), and then sets its price by adding a percentage markup that includes a contribution towards the firm's fixed costs, and a profit margin:

$$\text{Price} = \text{AVC} + \% \text{markup}$$

or

$$P = (1 + m)\text{AVC}$$

where P denotes price, and the markup (expressed as a percentage) is $100 \times m$ percent.

Advantages of Cost Plus Pricing

- The cost plus pricing formula is simple to understand, and can be implemented using less information than is required for profit-maximizing pricing.
- Cost plus pricing may produce greater price stability than profit-maximizing pricing.
- Cost plus pricing appeals to a sense of fairness: in determining its markup, the firm can claim to allow for a reasonable profit margin, rather than the maximum profit.

How are prices determined? 2012 Bank of England Survey of 693 companies

	Not important	Slightly important	Important	Very important
Price is primarily determined by your competitors' price	4.9	16.3	35.6	32.6
Price is based on direct cost per unit plus a percentage mark-up that varies	8.9	14.9	25.2	32.9
Price is based on direct cost per unit plus a fixed percentage mark-up	15.9	19.3	19.0	24.7
Price is primarily specified by your principal customer	22.5	20.5	17.7	9.5
Price is primarily determined in other ways	15.6	3.0	4.3	12.8

Source: Jennifer Greenslade and Miles Parker 'New insights into price-setting behaviour in the UK: Introduction and survey results' The Economic Journal, February 2012, Vol. 122, Issue 558

How UK firms set their prices

Pricing method	All	Manufacturing	Construction	Retail	Other services
Reference to market conditions	39	41	51	18	48
Competitor prices	25	26	11	30	23
Direct cost + variable markup	20	20	22	21	17
Direct cost + fixed markup	17	16	19	24	14
Customer set	5	6	3	0	6
Regulatory agency	2	1	0	0	3

Note: Data are percentages of sample firms reporting use of the method shown in the left-hand column. Percentages may exceed 100 per cent because firms are permitted to indicate more than one choice.

Source: Adapted from Hall, S., Walsh, M. and Yates, A. (1996) How do UK companies set prices? Bank of England Quarterly Bulletin, May, 36, 180–92, Table A, 13.

How firms set prices in various European countries

	Bel	Ger	Sp	Fr	It	Nl	Pt	Eurozone
Mark up	46	73	52	40	42	56	65	54
Competitors' price	36	17	27	38	32	22	13	27
Other (mainly customer and regulator set)	18	10	21	22	26	21	23	18

Source: Based on data in The Pricing Behaviour of Firms in the Euro Area: New Survey Evidence (Eurosysteem Inflation Persistence Network, Working Paper series, No. 535, European Central Bank, October 2005).

Price-setting strategies of firms in the euro area

Country ¹	Cost plus pricing	Rivals' prices	Other
Belgium:			
All firms	45.9	36.4	17.7
Low competition	–	–	–
High competition	–	–	–
France:			
All firms	40.0	38.0	22.0
Low competition	49.8	24.4	25.9
High competition	36.0	47.6	16.4
Germany:			
All firms	73.0	17.0	10.0
Low competition	78.9	9.4	11.7
High competition	69.8	22.5	7.6
Italy:			
All firms	42.4	31.7	25.9
Low competition	57.6	14.5	27.9
High competition	33.6	42.6	23.7
Netherlands:			
All firms	56.4	22.3	21.3
Low competition	56.6	15.3	28.2
High competition	56.5	25.4	18.1
Portugal:			
All firms	64.5	12.6	22.9
Low competition	78.7	2.9	18.4
High competition	59.9	17.6	22.4
Spain:			
All firms	51.9	26.6	21.5
Low competition	61.3	11.8	27.0
High competition	44.1	40.5	15.3
Euro area			
All firms	54.3	27.1	18.7
Low competition	63.6	14.7	21.7
High competition	49.8	35.1	15.1

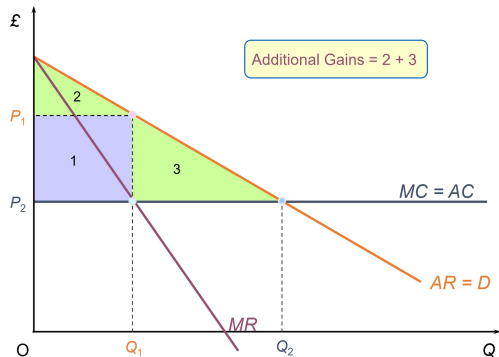
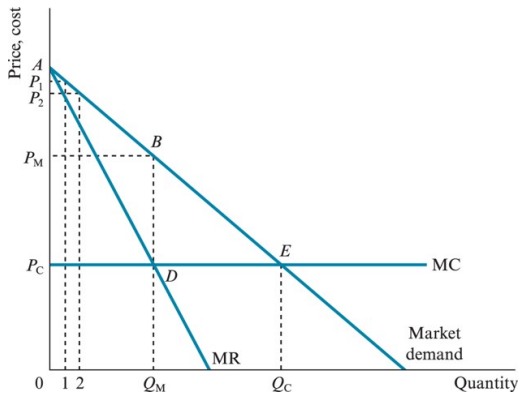
Source: Álvarez, L.J. and Hernando, I. (2006) Competition and price adjustment in the euro area, Bank of Spain Working Paper, No. 0629, p. 14. Data derived from individual country level studies of price setting strategies for Belgium (Aucremanne and Druant, 2005); France (Baudry et al., 2004); Germany (Heffman and Kurz Kim, 2005); Italy (Veronesi et al., 2005); Netherlands (Lasker et al., 2004); Portugal (Dias et al., 2004); Spain (Dias et al., 2004).

Price Discrimination

- **Meaning of price discrimination**
- **Types of price discrimination**
 - first degree
 - charging consumers the maximum each is prepared to pay **Whats the difficulty here?**
 - third degree
 - characteristics, traits or attributes used to 'group' different consumers
 - second degree
 - offering a range of different pricing options for the consumer to choose from
- **Conditions for price discrimination**
 - **Firm must have some market power**
 - Faces a downward sloping demand curve
 - **Re-sale of the product between customers must be difficult/impossible**
 - I.e. consumed at time of purchase/perishable/high transaction costs
 - **Demand elasticity must vary between customers at any given price**

- **First-degree price discrimination**
 - **perfect price discrimination**
 - difficult to establish the maximum people are willing to pay
 - asymmetric information
 - **personalised or person-specific pricing**
 - approaches pure first-degree price discrimination
 - more likely when there is scope for bargaining and the seller is a skilful haggler
 - **the impact of digital markets**
 - capturing consumers' characteristics
 - tracking browsing behaviour
 - evidence of personalised pricing
 - constraints on the use of personalised pricing
 - **a model of first-degree price discrimination**
 - revenue equals area under the demand curve
 - captures all the consumer surplus

First-degree Price Discrimination



- **Third-degree price discrimination**
 - **firms discriminate according to some consumer characteristic**
 - e.g. age or location
 - **the characteristic must be:**
 - relatively easy for the firm to observe
 - provide some information about the consumer's willingness to pay
 - are not illegal to use (e.g. discrimination by ethnicity or gender)
 - acceptable to the consumer
 - **should be impossible or costly for consumers to change characteristic**

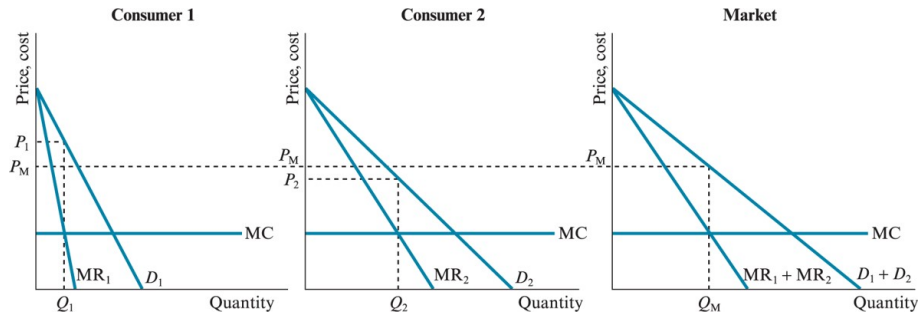
Examples of third-degree price discrimination

Characteristic	Example
Age	16–25 or senior rail card; half price children's tickets in the cinema.
Gender	'Ladies' night' in a bar or club where men pay the full price for drinks while women can get the same drinks at a discounted price.
Location	Pharmaceutical companies often charge different prices for the same medicine/drug in different countries. Consumers in the USA are often charged more than those from other countries.
Occupation	Apple, Microsoft and Orange provide price discounts to employees of educational institutions.
Business or individual	Publishers of academic journals charge much lower subscription rates to individuals than university libraries.
Past buying behaviour	Firms often charge new customers a lower price than existing customers for the same product or service as an 'introductory offer'.

- **A model of third-degree price discrimination**
 - **profit maximisation for a single-price firm**
 - horizontal summation of the demand curves
 - discontinuity in the MR curve
 - **profit maximising under third-degree price discrimination**
 - split customers into market H and market L
 - equate MC with MR in each separate market

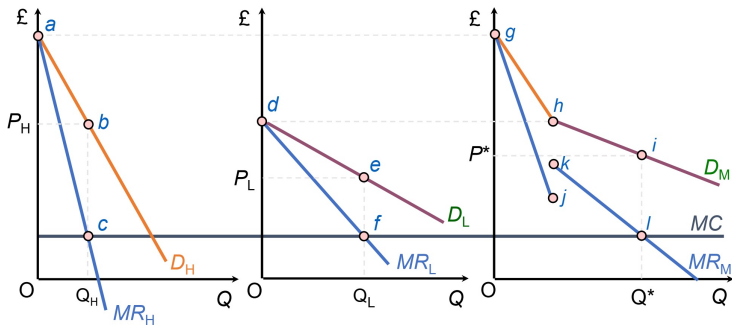
Examples of third-degree price discrimination

The third one is the case with no price discrimination.



Examples of third-degree price discrimination

The third one shows how with price discrimination the total of the market would look like.



(a) Market H

(b) Market L

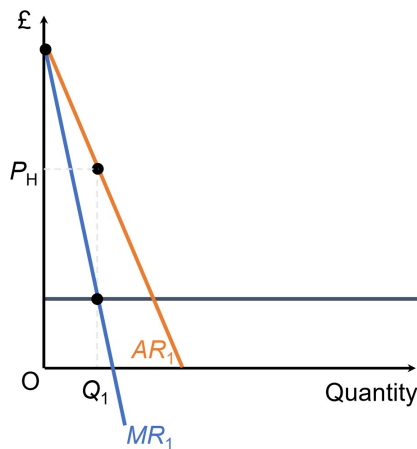
(c) Total market
(markets H + L)

Which one of the following conditions is NOT necessary for (third-degree) price discrimination to take place?

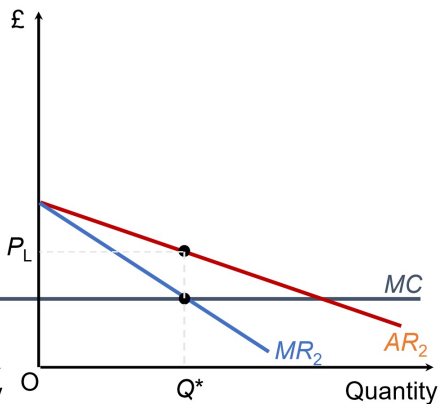
- 1 The firm must be a monopoly.
- 2 Price elasticity of demand must differ in each market.
- 3 The firm must not be a price taker.
- 4 The markets must be separate.
- 5 People buying in the low-price market must not be able to sell to those buying in the high-price market.

- **Second-degree price discrimination**
 - **discounts for greater purchases**
 - eg. quantity discounts
 - eg. block declining tariff (e.g. electricity companies)

Second-degree price discrimination: a quantity discount

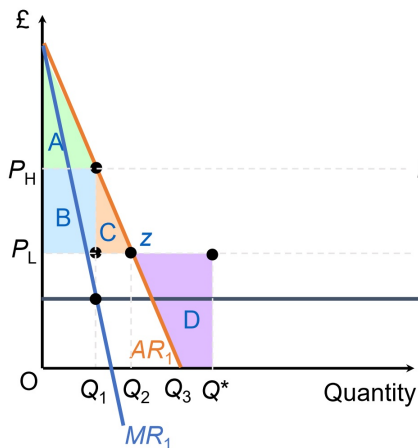


(a) Type 'I' consumer

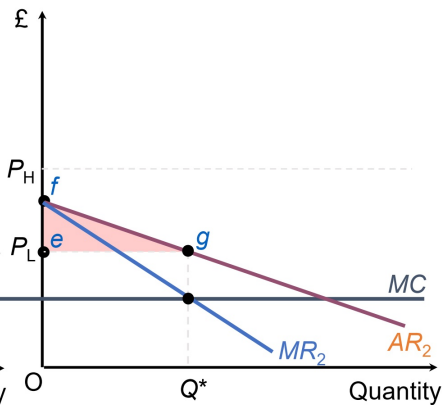


(b) Type 'E' consumer

Second-degree price discrimination: a quantity discount



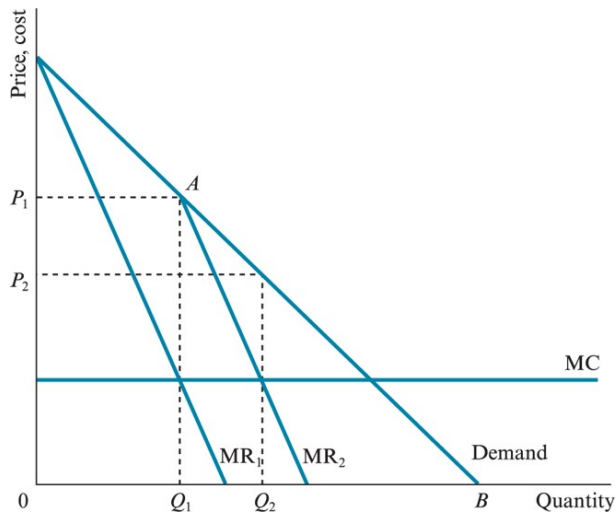
(a) Type 'I' consumer



(b) Type 'E' consumer

- **Second-degree price discrimination**
 - **discounts for greater purchases**
 - quantity discounts
 - block declining tariff (e.g. electricity companies)
 - **coupons/vouchers**
 - time and effort
 - **intertemporal pricing**
 - airline tickets

Intertemporal price discrimination (based on willingness to pay at a time period)



- **Second-degree price discrimination and product differentiation**
 - **Versioning – different versions of core product**
 - First class vs. economy seats
 - Different specifications of computers/software
 - **Combinations of versioning and inter-temporal pricing**
 - Hardback and paperback books

- **Other discriminatory pricing practices**
 - **Peak-load pricing**
 - eg. Higher bus and train fares during 'rush hours'
 - **Two-part tariff**
 - Fixed fee plus price per unit
 - eg. Mobile phones/energy

• **If a supermarket has a 'buy 2 get a 3rd one free' offer, this is an example of:**

- Ⓐ First-degree price discrimination.
- Ⓑ Second-degree price discrimination.
- Ⓒ Third-degree price discrimination.
- Ⓓ Demand pricing.
- Ⓔ Mark-up pricing.

- **Some firms provide coupons and vouchers on their websites. Any customer can print off these vouchers and use them to obtain their next purchase from the firm at a discounted price. This is most likely to be an example of:**
- Ⓐ First-degree price discrimination.
 - Ⓑ Second-degree price discrimination.
 - Ⓒ Third-degree price discrimination.
 - Ⓓ Uniform pricing.
 - Ⓔ It is impossible to say without more information.

- **Advantages to the firm**
- Earn higher revenues from
 - A given level of sales
 - Extra sales
- **Price discrimination and the public interest**
- Distribution
- Impact of extra sales
- Misallocation effects
- Competition effects
 - Consumer poaching effect

Transfer Pricing

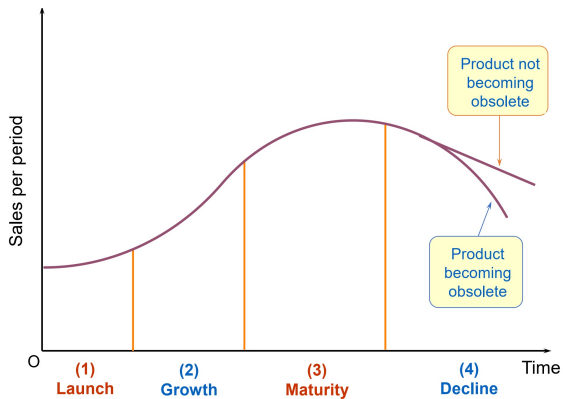
Transfer Pricing

- Transfer pricing refers to the pricing of goods, services, and intangibles between related entities within an MNE, such as transactions between divisions, subsidiaries, or associated companies that are part of the same MNE.
- The organisation of a business as a series of divisions, **each pursuing an independent strategy, has implications for pricing policy.**
- In an attempt to reduce the diseconomies that stem from coordinating such large business enterprises, the setting of price and output levels is frequently decentralised to individual divisions.
- However, the decentralisation of pricing and output decision-making can become problematic.
- There then arises the difficulty of how such intermediate products should be priced. This is known as **the problem of transfer pricing.**
- One implication of this is that a division which that is seeking to maximise its own profits when selling to another division will attempt to exploit its 'monopoly' position and increase the transfer price. **So costs might increase and profit fall.**

- **Solution: Use of marginal-cost pricing to overcome problems of internal monopoly power. But this comes with issues.**
- Transfer pricing within multinational companies is an area of **concern for tax authorities**. The price used to transfer goods or services between plants and divisions located in different countries is not determined by a market. Instead, **the price is often set to avoid tax, ensuring that profits appear in countries where taxes on profits are lowest.**
- There have been many cases of companies setting transfer prices so as to avoid tax. Companies such as Starbucks, Apple, Amazon and Coca-Cola have charged themselves high prices for the use of things such as logos, brands or business services owned or 'provided by' a subsidiary located in a low-tax country or region, such as Luxembourg or the Cayman Islands and have thereby diverted a large proportion of their profits to these 'tax havens'.
- OECD countries have agreed that tax liabilities on profits **should be calculated using prices that would have arisen if the transfers had taken place between independent firms, rather than within one firm.**
- In practice, this is **difficult to achieve** and extremely hard to police and often, the 'subsidiary' is little more than a small office with one employee.

Pricing and the Product Life Cycle

The stages in a product's life cycle



In which stage is it likely that price competition is intense and firms invest in product innovation to stimulate growth in sales?

- ① Launch
- ② Growth
- ③ Maturity
- ④ Decline

Industry Life Cycle: Launch to Decline

- **Launch Stage:** Product is introduced to the market. Sales are low, costs are high, and uncertainty is high. Heavy investment in marketing and R&D is typical. Firms may face losses, and there is little or no competition initially. Firms may use price skimming or penetration pricing depending on objectives.
- **Growth Stage:** Sales expand rapidly, attracting new entrants. The industry becomes oligopolistic. Firms grow without intense price wars, often differentiating via minor features.
- **Maturity Stage:** Market becomes saturated. Growth slows, competition intensifies. Firms resort to aggressive pricing, innovation, and marketing to maintain market share. Price wars to protect market share and strategic alliances may emerge.
- **Decline Stage:** Demand falls due to saturation or new technologies. Fierce competition may push out weaker firms. Surviving firms focus on replacement demand and may reduce investment. Firms compete on price, bundling, and promotions to clear inventory and retain residual market segments.