



Competition Policy in Europe

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About me

- **Research: Applied microeconomics**
 - Competition between public and private firms
 - Labor unions and wage inequality
 - Telecommunications and regulation
 - Mergers and acquisitions
- **Teaching**
 - Micro, game theory, industrial organization, competition policy and regulation
 - Master and Ph.D.
- **Administration**
 - Coordinator of master program in economics
- **Extra-mural activities**
 - Economic expert (“judge”) in Swedish Market Court
 - Consultant to public authorities and private firms

Exam

- This exam covers the part "**Competition Policy in Europe**"
- You have been assigned to **groups** of 2-3 students
- Each group should choose between a few **cases** that I will post on my web
- Each group should hand in a **report** with your answers to the questions asked at the end of your chosen case
- You are allowed to use whatever **material** you wish, such as lecture slides and the textbook. If you wish, you may also search for additional material in the library or on the Internet
- The report should be **well formulated** and not exceed **2000 words**
- The report should be handed in as a **pdf-file**
- Reports should be submitted, no later than **Thursday 13 July at 24:00** (Japanese time)
- Submit the report by e-mail to **johan.stennek@economics.gu.se**

My material

- www.stennek.se

Google

Google

- **European Commission decision** (June 27, 2017)
 - Google must pay fine of €2.4 billion (\$2.8 billion)
- **Reason: abusing dominance**
 - Search engine gives illegal advantage to own comparison shopping service

Google

- Search engines

- Provides internet search results to people
- Google flagship product
 - revolutionized search
 - ranks results according to relevance
- 90% of Google's revenues = advertising shown to users
- Google's market share >90% in most European countries

Google

- Comparison shopping
 - Allows consumers compare products and prices
 - Online shops of manufacturers
 - Platforms: Amazon and eBay
 - Business model
 - Comparison sites do not sell any products
 - Search \Rightarrow Clicks \Rightarrow Revenues
 - Traffic from search engines
 - Network effect
 - More traffic \Rightarrow more firms list their products \Rightarrow more attractive to consumers
 - A virtuous circle: a chain of re-enforcing events

Google

- “Google shopping”
 - Started 2004
 - Not able to compete with existing comparison shopping sites

Google

- Google's new strategy 2008
 - Use Google search engine to promote Google shopping
 - Google shopping
 - Top search result
 - Rich format
 - Rival comparison shopping sites
 - Displayed on page 4
 - Simple format
 - Expressed differently
 - Stop using generic algorithm for ranking search results
 - Create a bias

Ungefär 1 250 000 resultat (0,65 sekunder)



Betyg Tider

Sapporo Grand Hotel

4,2 ★★★★★ (492) · Hotell
北1条西4丁目2番地
Badtunna · Passar för barn



Sapporo KANI-YA

4,0 ★★★★★ (4) · Skalsjursrestaurang
Minami 4 Jonishi, 2 Chome-1 1
Mysigt · Grupper



Ippudo Sapporo Tanukikoji shop

3,9 ★★★★★ (122) · Tonkotsu ramen, restaurang
Minami 3 Jonishi, 6 Chome-8
Mysigt · Fri klädsel · Grupper



Fler platser

The 10 Best Sapporo Restaurants 2017 - TripAdvisor

https://www.tripadvisor.com/Restaurants-g298560-Sapporo_Ho... **Översätt den här sidan**
Best Dining in Sapporo, Hokkaido: See 40707 TripAdvisor traveler reviews of 8785 Sapporo restaurants and search by cuisine, price, location, and more.
[Restaurants near Odori Park](#) · [Restaurants near Susukino](#) · [Halal](#)

10 Unmissable Restaurants In Sapporo, Japan - Culture Trip

<https://theculturetrip.com/Asia/Japan/Sapporo> **Översätt den här sidan**
Discover the culinary offering of Sapporo with our food lover's guide to some of the best cultural restaurants in this bustling city.

The 10 Best Sapporo Restaurants 2017 - TripAdvisor

<https://en.tripadvisor.com.hk/.../Japan/Hokkaido/Sapporo> **Översätt den här sidan**
Best Dining in Sapporo, Hokkaido: See 40565 TripAdvisor traveller reviews of 8780 Sapporo restaurants and search by cuisine, price, location, and more.

Restaurants in Sapporo, Japan - Lonely Planet

<https://www.lonelyplanet.com/Asia/Japan/Sapporo> **Översätt den här sidan**
Discover the best restaurants in Sapporo including Menya Saimi, Sushi-no-uo- masa, Kani-honke.

tsunagu Japan | 20 Must-Go Sushi Restaurants in Sapporo, Hokkaido

<https://www.tsunagujapan.com/20-must-go-sushi-restaurants-in-...> **Översätt den här sidan**
20 Must-Go Sushi Restaurants in Sapporo, Hokkaido. Hokkaido is surrounded by sea and naturally counts seafood as its speciality. Freshly caught seafood are ...

Sapporo Restaurants: What to Eat in Japan's Delicious North

<https://savorjapan.com/.../sapporo-restaurants.../index.html> **Översätt den här sidan**
Hokkaido has the freshest and most abundant variety of fish and seafood in all of Japan, so it's no surprise that Sapporo restaurants offers some of the best sushi ...

Sapporo Gourmet Best 100_UU-Hokkaido

www.uu-hokkaido.com/sgs/index.html **Översätt den här sidan**
Sapporo, Hokkaido is one of the leading gourmet city in Asia to be able to enjoy the food of all over Hokkaido. This is a special edition of popular restaurant in ...

Google

- Research studies and surveys show:
 - Consumers click far more often on results appearing higher up in search results
- Desktop computers
 - 1 top result gets 35% of clicks
 - 10 top results get 90% of clicks
 - 1 result on page 2 gets 1% of clicks
- Experiments
 - show that this is *not* due to relevance
 - Moving 1'st result to place 3 reduces clicks by 50%
- Mobile devices
 - Effects even larger

Google

- Effect of Google's new strategy
 - Traffic on Google shopping increased
 - 45-fold in UK
 - 35-fold in Germany
 - and so on
 - Sudden drop in traffic on rival sites
 - 80-90% drop
 - Cannot be explained by other factors

Google

- Commission claims:
 - This will be negative for European consumers

Google

- Why illegal?
 - Google has abused a dominant position

Google

- Google has dominant position in “search engine market”
 - Market share > 90% in European countries
 - Entry barrier: Network effects
 - More users ⇒ more attractive to advertisers ⇒ higher profits ⇒ can improve product ⇒ more users ⇒ ...
 - More users ⇒ better data on consumer behavior ⇒ more attractive to advertisers ⇒ ...

Google

- Google has abused its position
 - Dominance is not illegal *per se*
 - But dominant firms have special responsibility
 - Must not take actions reducing competition
 - Google's strategy reduced competition in "comparison shopping market"

Google

- Commission's decision
 - Fine: € 2.4 billion (10% of Google's world wide revenues)
 - Google must change search engine
 - give equal treatment of comparison shopping sites
 - within 90 days
 - Otherwise
 - additional fine every day of up to 5% of the daily worldwide turnover
 - Google's competitors can file for damages

Comments

Google

- Google will probably appeal
 - The decision is taken by the European Commission itself
 - Commission is both “prosecutor” and “judge”
 - The investigation took 7 years
 - But Google appeal to the General Court

Google

- Competition on the Internet
 - On the one hand: Easy for users to switch
 - If not satisfied with Google, then switch to Yahoo! or DuckDuckGo
 - Competition should be intense
 - On the other hand: Network effects
 - A service that is slightly better gets almost all customers
 - Earns much higher profit
 - Learns about consumer behavior
 - Can improve its services further

Google

- Whose interests is the Commission protecting?
 - Google offers its services to users for free
 - If 90% of users choose Google, it must be because they have a better product than other services
 - So why punish Google and help inferior firms?
- Commission's objectives
 - Does not protect **individual firms** – but **competitive process** – for the benefit of **consumers**
 - Google shopping may not be better than other comparison shopping sites. It was given an unfair advantage.



Market power

Johan Stennek
www.stennek.se

Agenda

1. What is market power?
2. How does market power arise?
3. How does market power affect welfare?
4. What policies can limit market power?
5. How can market power be measured?

1. What is market power?

Recall perfect competition

- Entry and exit
 - If profits \Rightarrow new firms enter \Rightarrow price \downarrow
 - If losses \Rightarrow existing firms exit \Rightarrow price \uparrow
- Equilibrium (long run)
 - price = cost of production (LR-AVC)

But...

- Example 1: Pharmaceuticals
 - Prices typically differ between different countries
 - Often produced in one location, eg. India
 - Transportation costs often small
 - Thus
 - Only lowest price could be equal to cost
 - Other prices $>$ cost

But...

- Example 2: Telecom
 - Different customers pay different prices in same country
 - flat rates – low price per call
 - pre-paid – high price per call

But...

- Regularity
 - Firms charge prices above cost
 - And they can still sell their products
- Definition: Market power
 - Ability to charge a price above marginal cost, without losing all customers
- Alternative definition
 - Ability to charge a price above *average* cost, without losing all customers
 - This definition takes into account the fact that firms must cover all their costs, including any fixed costs

2. How does market power arise?

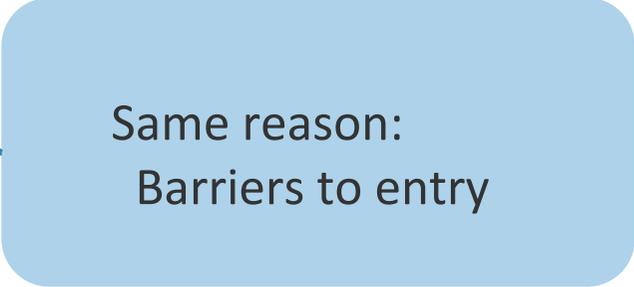
How does market power arise?

- Quick answer
 - It has to do with a lack of competition
- Thus, lets study
 - Monopoly – complete absence of competition
 - Oligopoly – the middle case

Monopoly

Monopoly

- Definition – supply side
 - One firm producing the product
 - No close substitutes
 - Entry not possible
- Definition – demand side
 - Many “small” buyers (consumers, small firms)
- Implication: Firm can set price without thinking about
 - Other firms (existing or not)
 - Individual consumers



Same reason:
Barriers to entry

Barriers to entry

- Legal
 - **Patents** to protect R&D: pharmaceuticals (substitutes?)
 - **Copy rights:** Books (substitutes?)
 - Sector regulation
 - Consumption control: liquor
 - Fiscal: gambling
- Economies of scale / market size
 - District heating in cities
 - Food retailing in rural areas
- Exclusive access to essential resource
 - Natural resource
 - Exclusive distribution agreement
- Network effects
 - Everyone is on Facebook since everyone they know are on FB

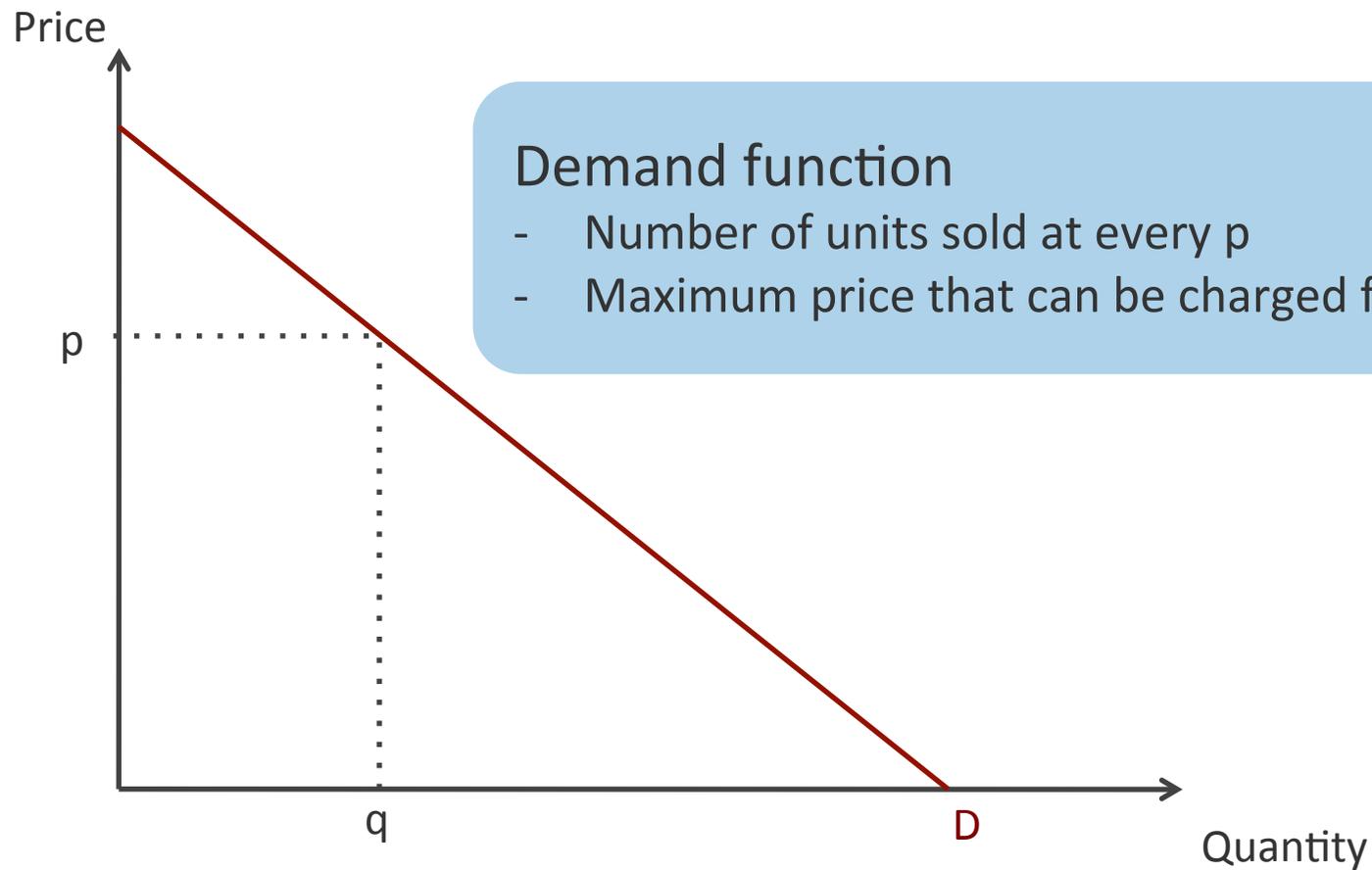
Monopoly model - Basic Assumptions

- Profit maximization
 - Privately owned
 - No problem ownership-control
 - No regulation
- Uniform pricing
 - The firm charges the same price to all consumers

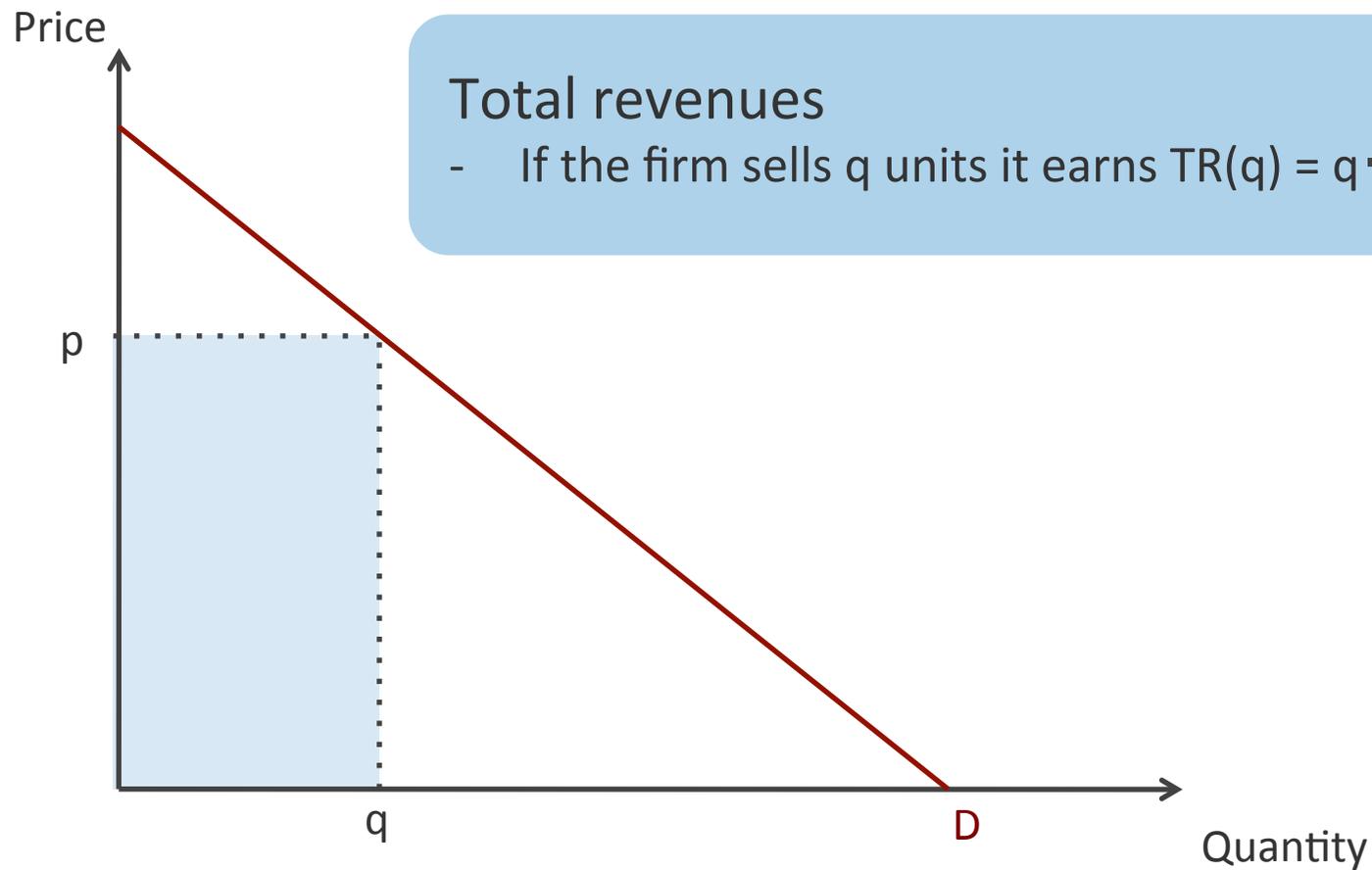
Monopoly model - Basic Assumptions

- The firm knows its “external” conditions
 - Costs
 - Demand

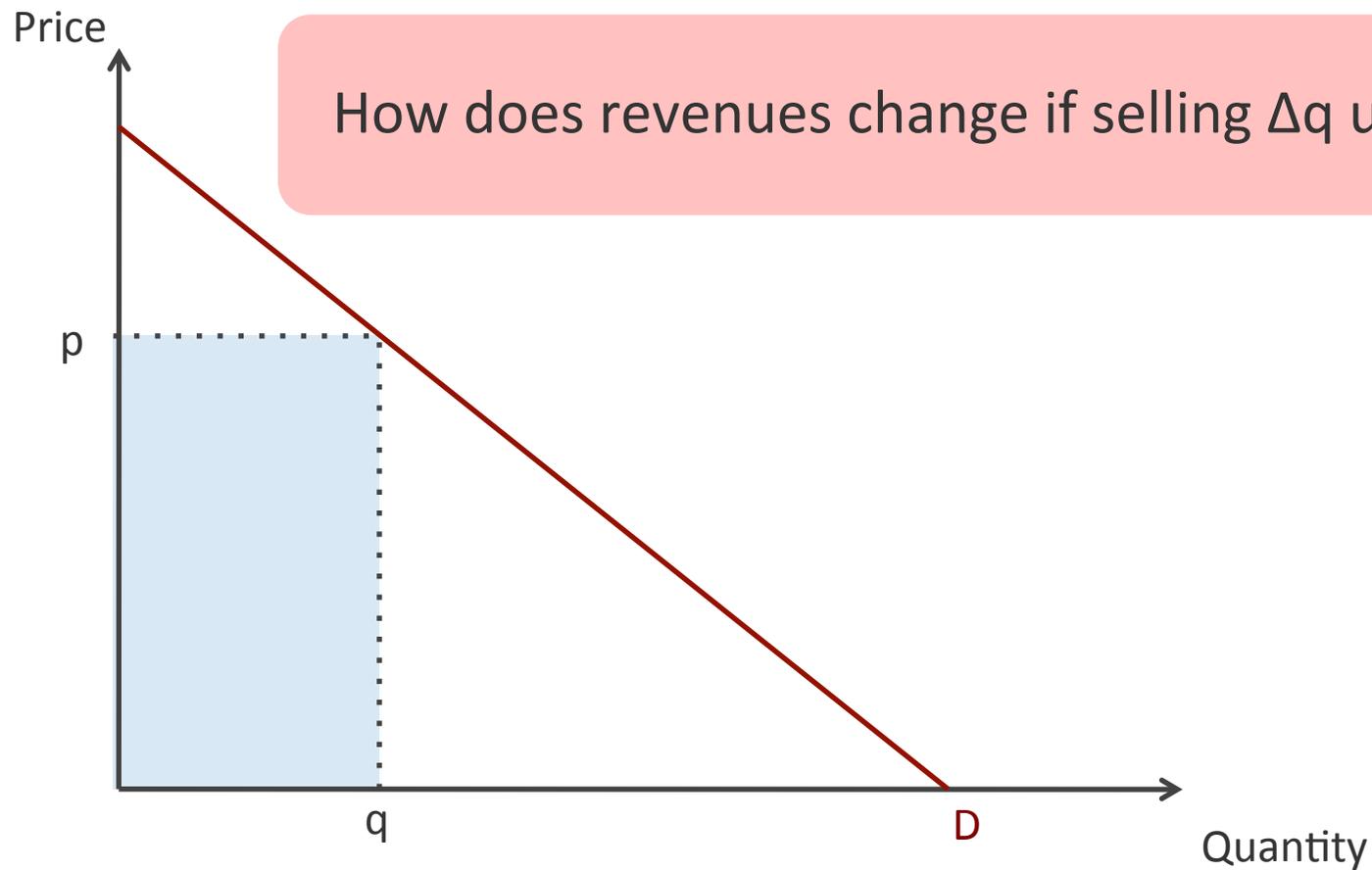
Monopolist's decision problem



Monopolist's decision problem

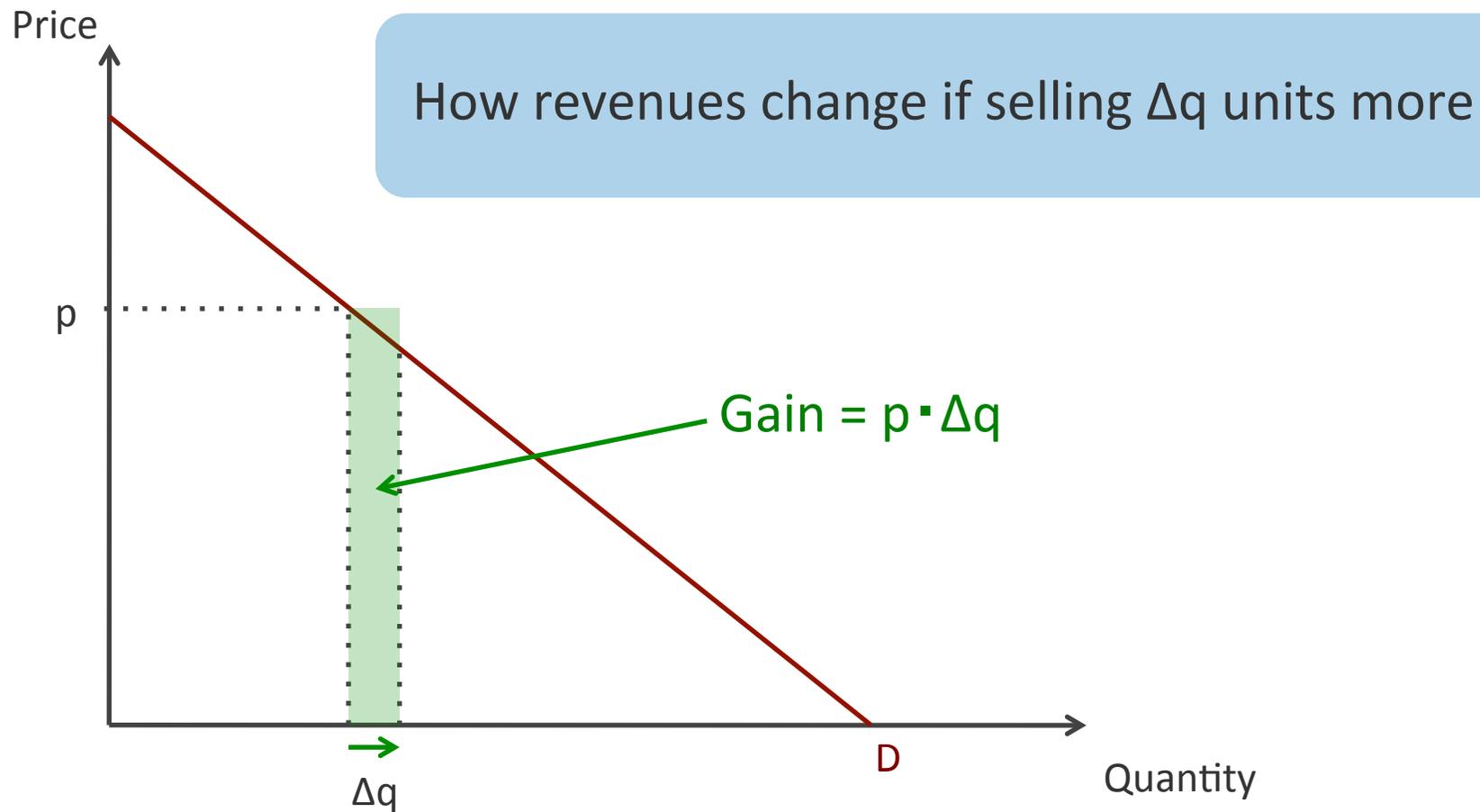


Monopolist's decision problem

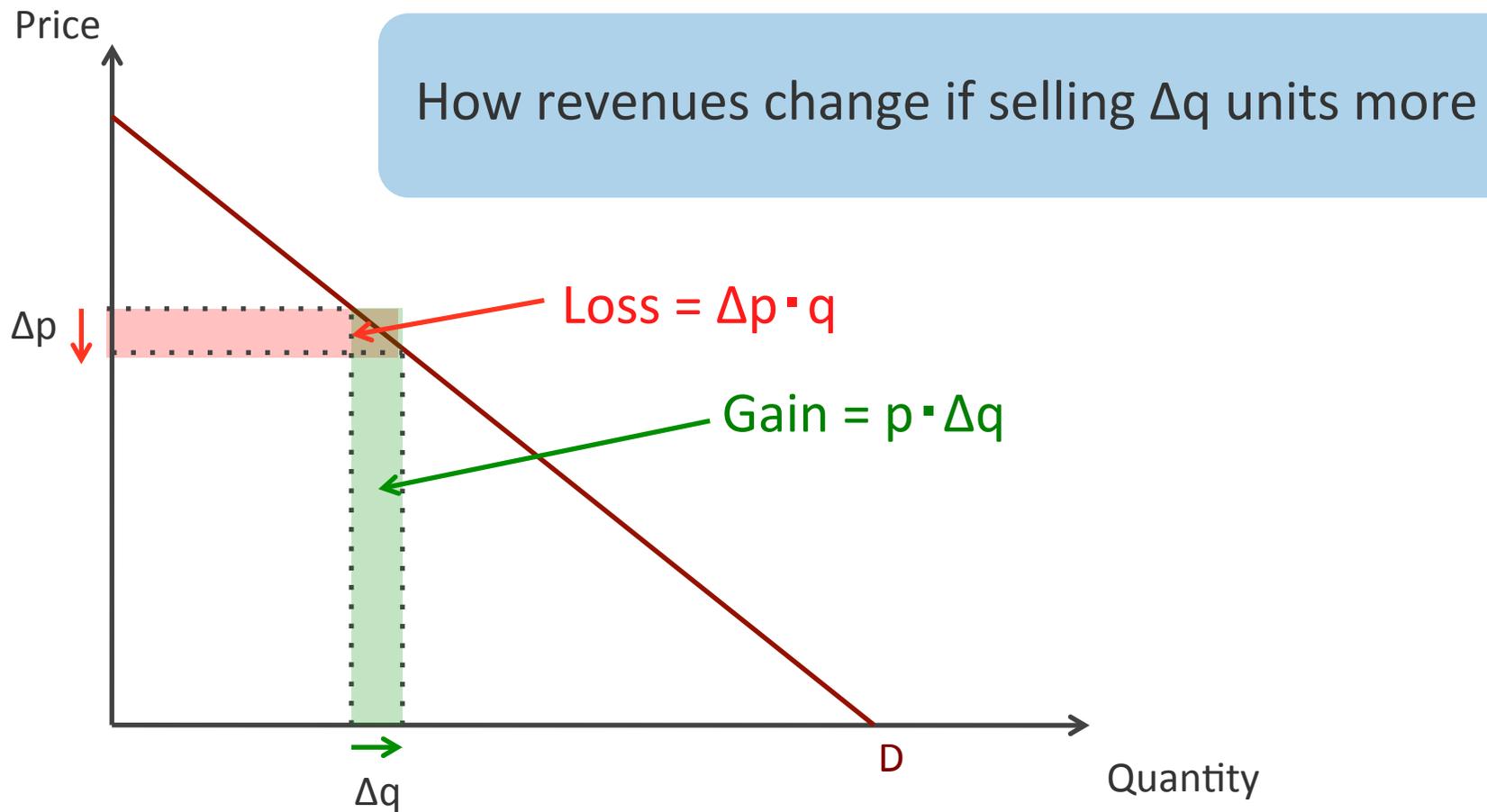


How does revenues change if selling Δq units more?

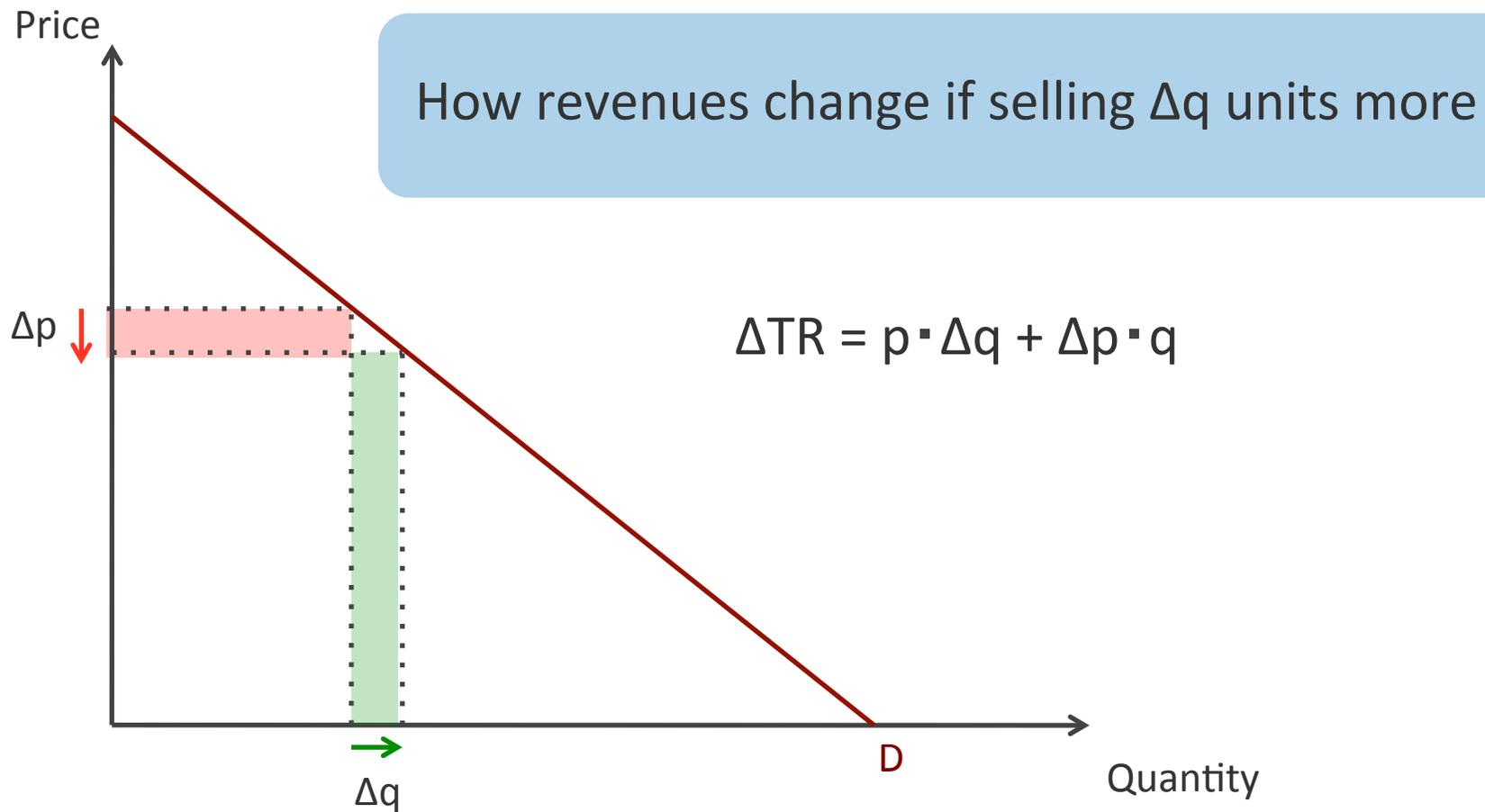
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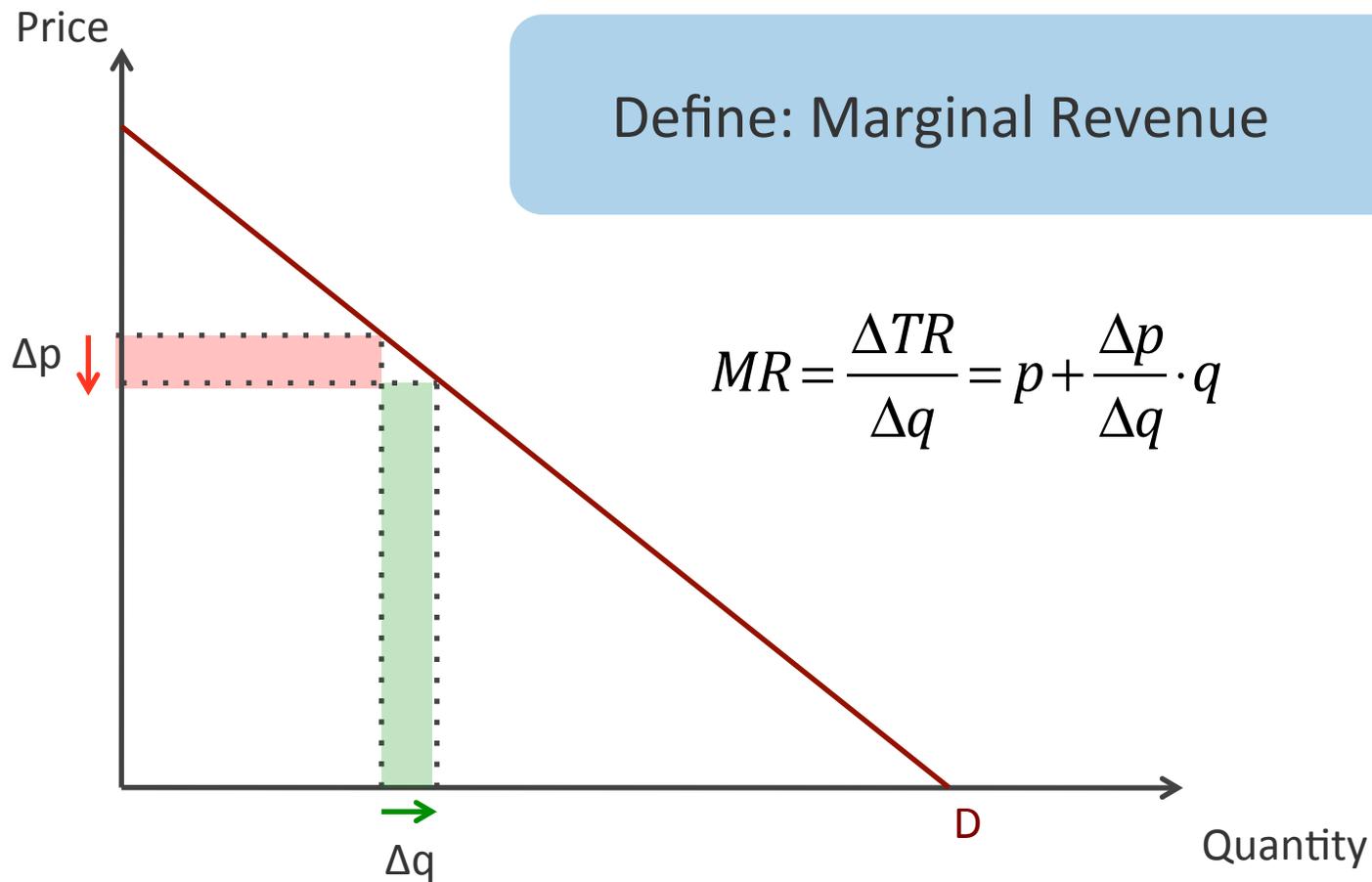
Monopolist's decision problem



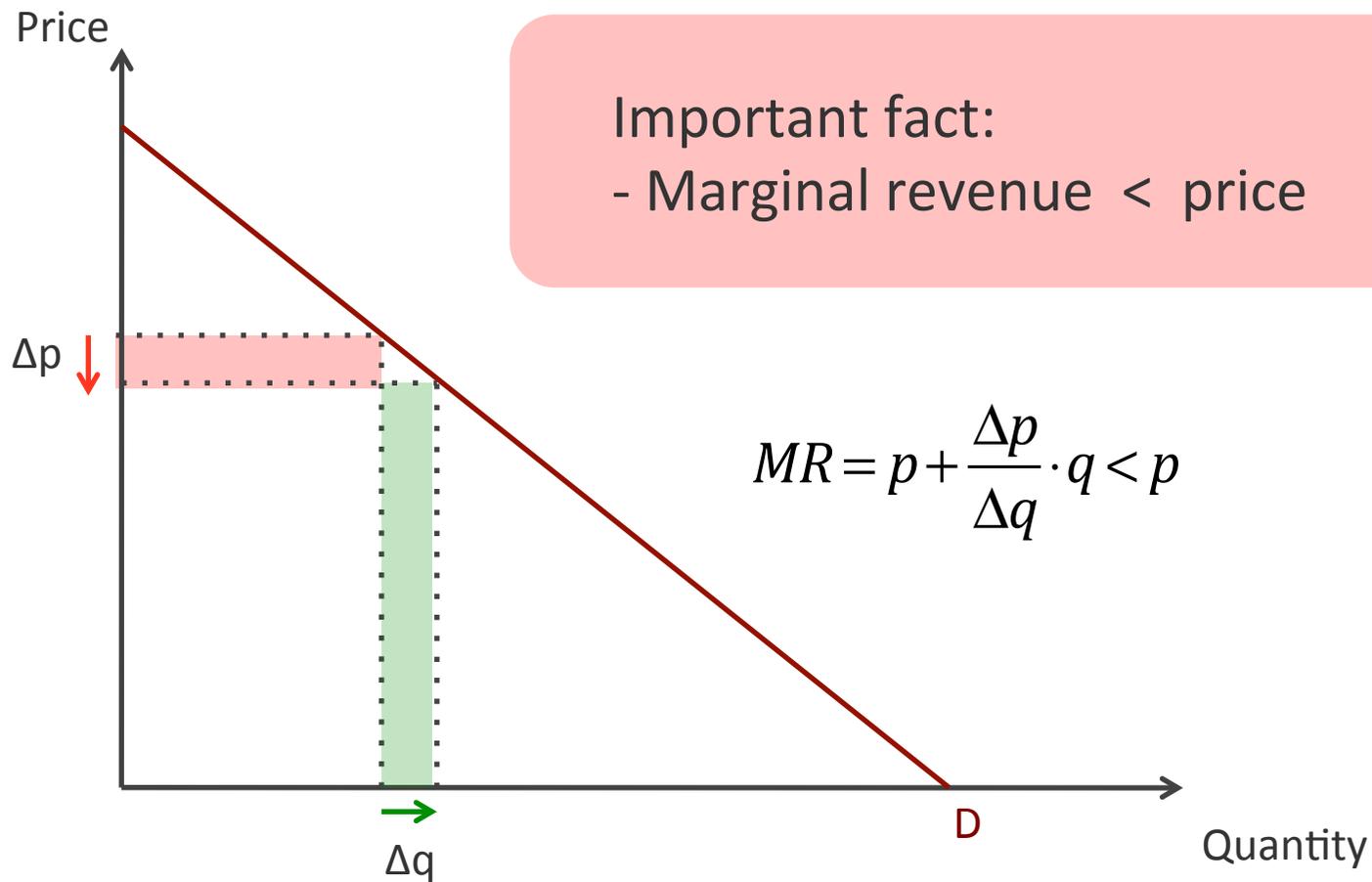
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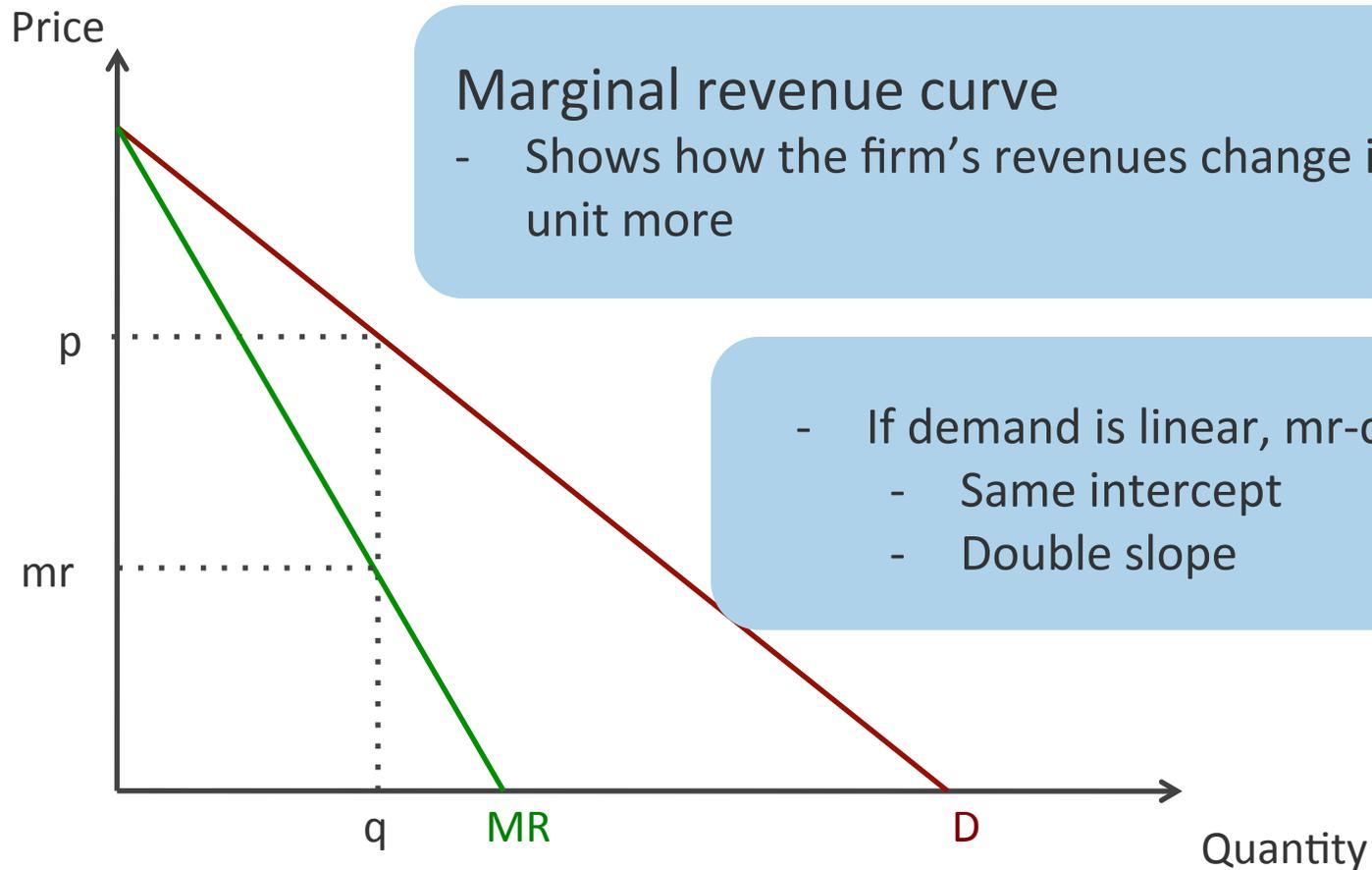
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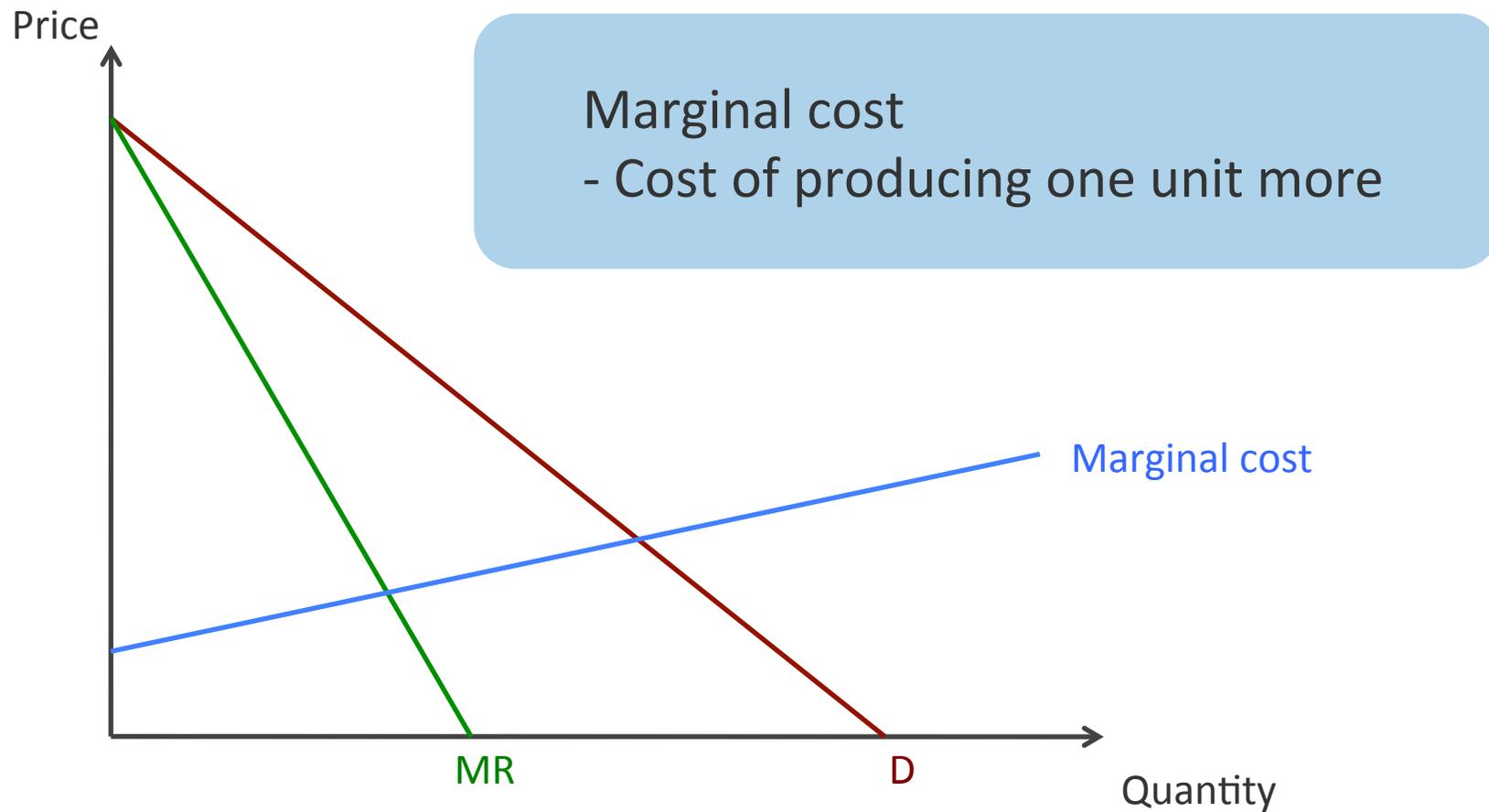
Monopolist's decision problem



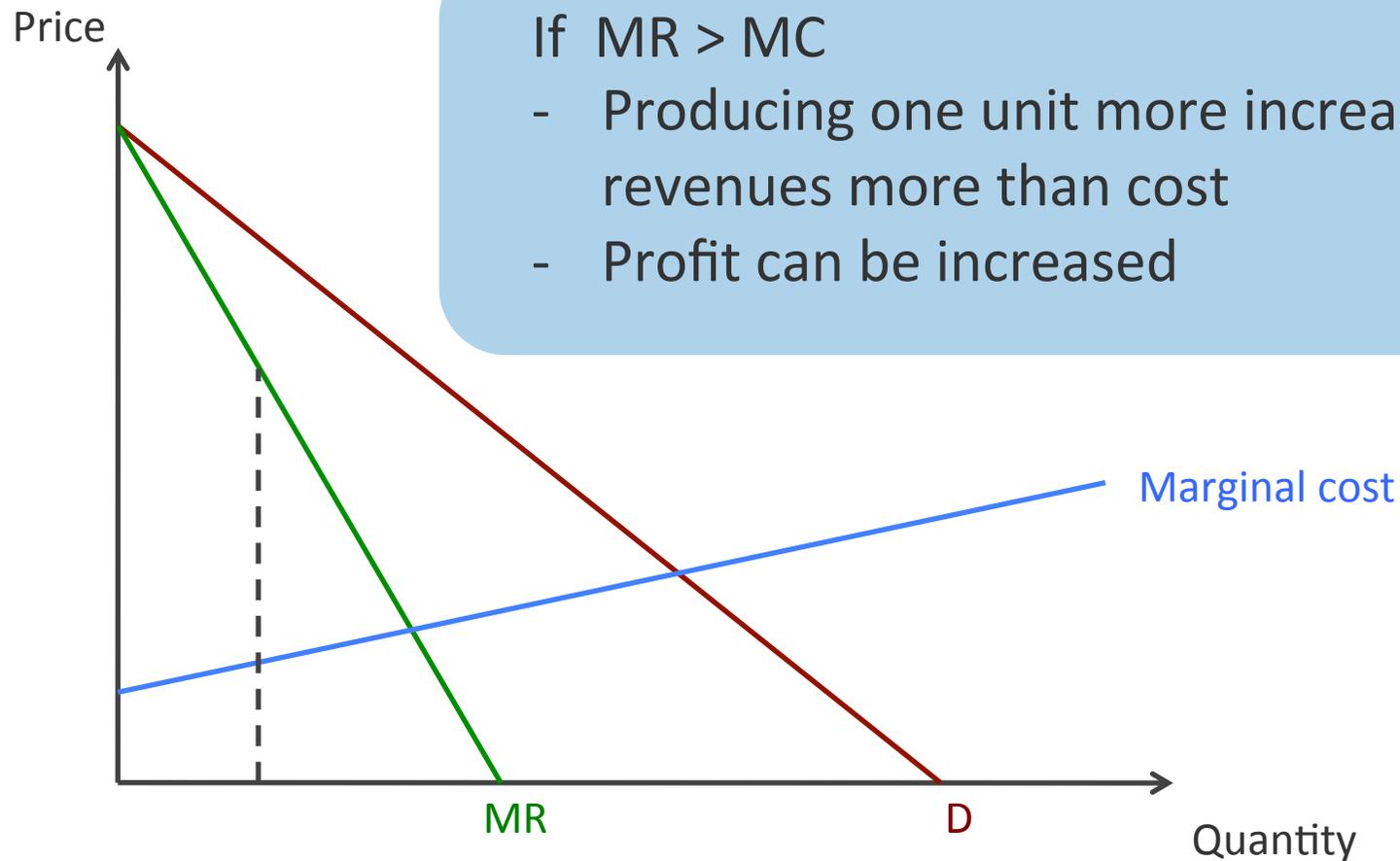
Monopolist's decision problem



Monopolist's decision problem



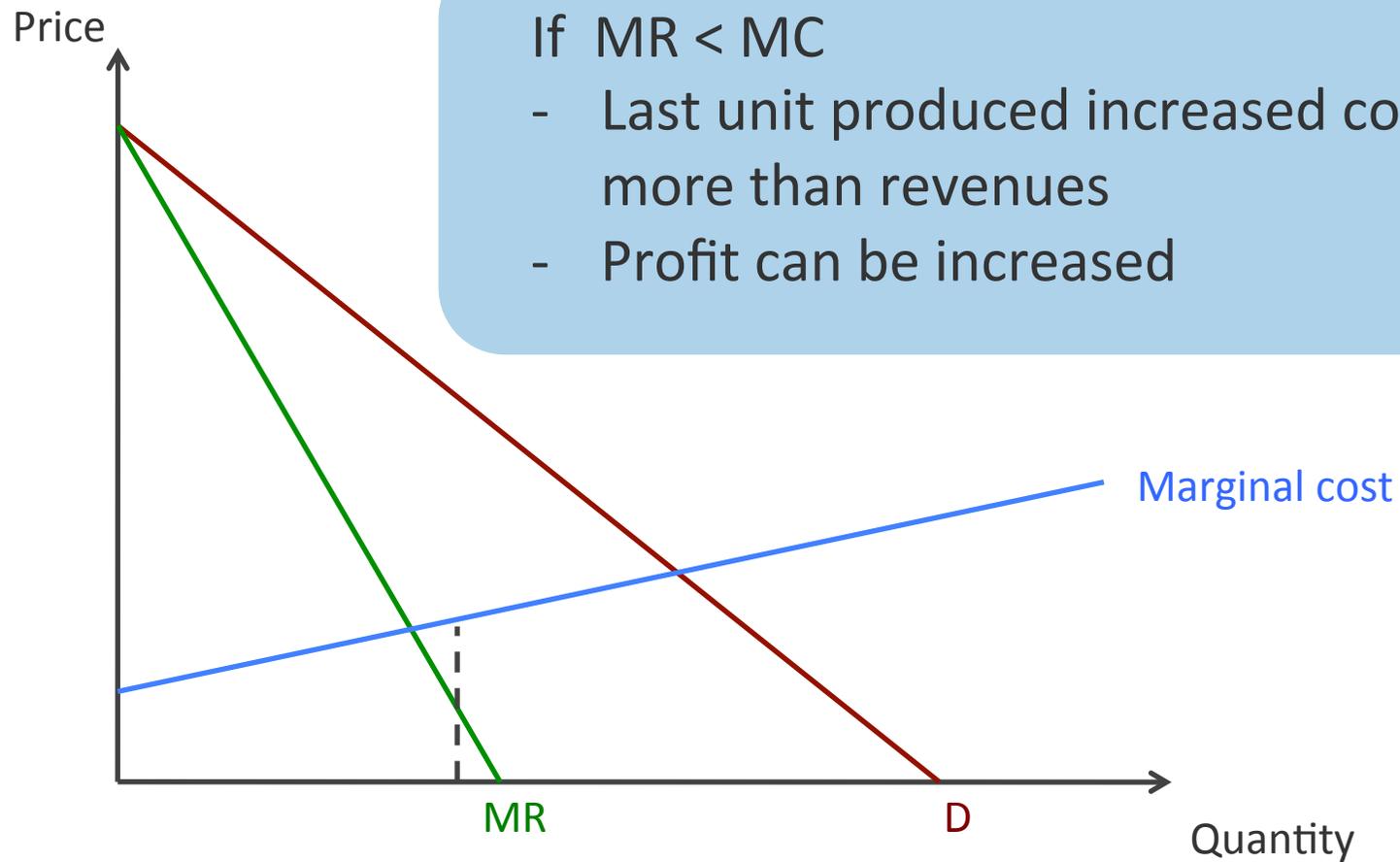
Monopolist's decision problem



If $MR > MC$

- Producing one unit more increases revenues more than cost
- Profit can be increased

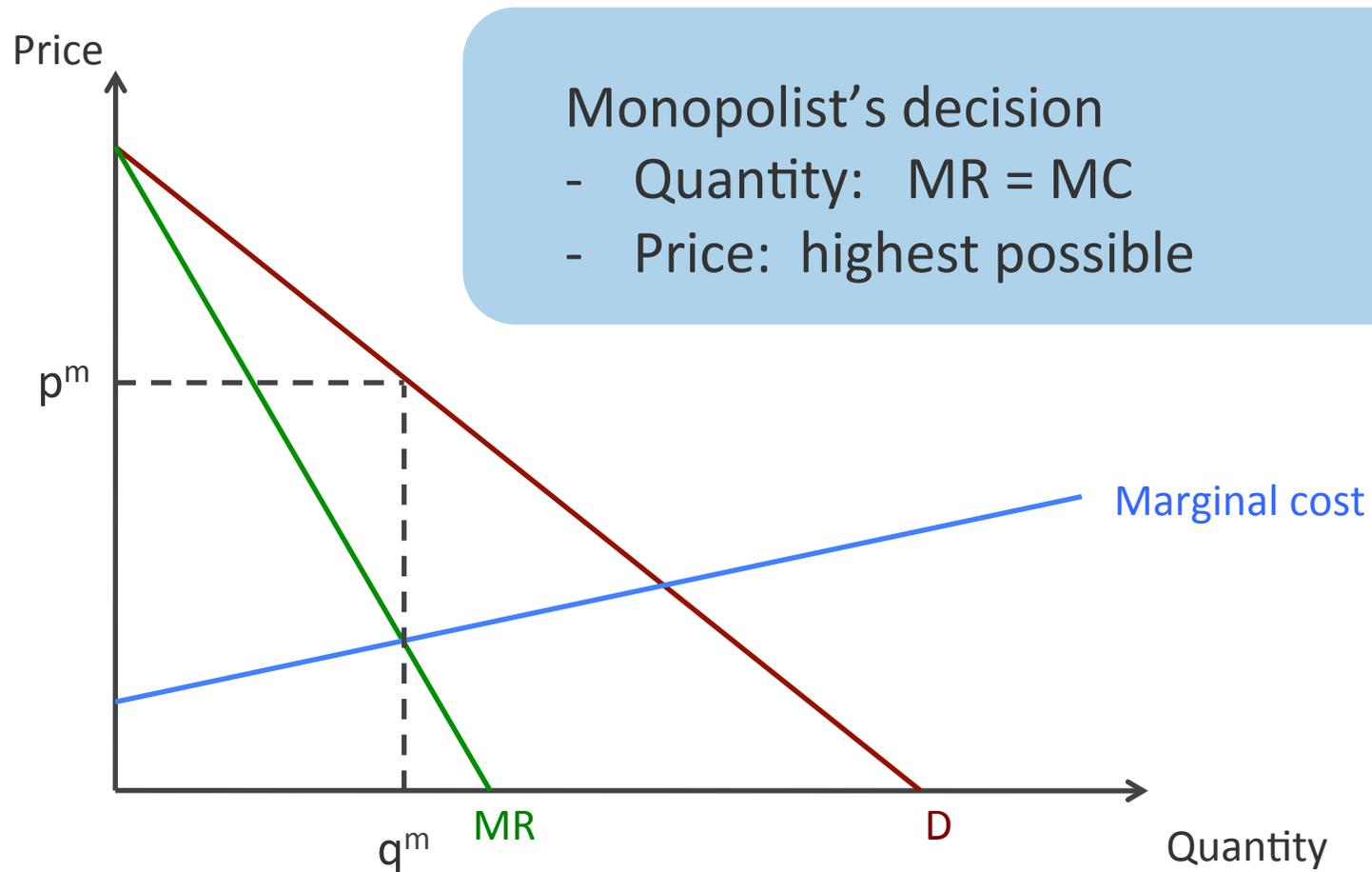
Monopolist's decision problem



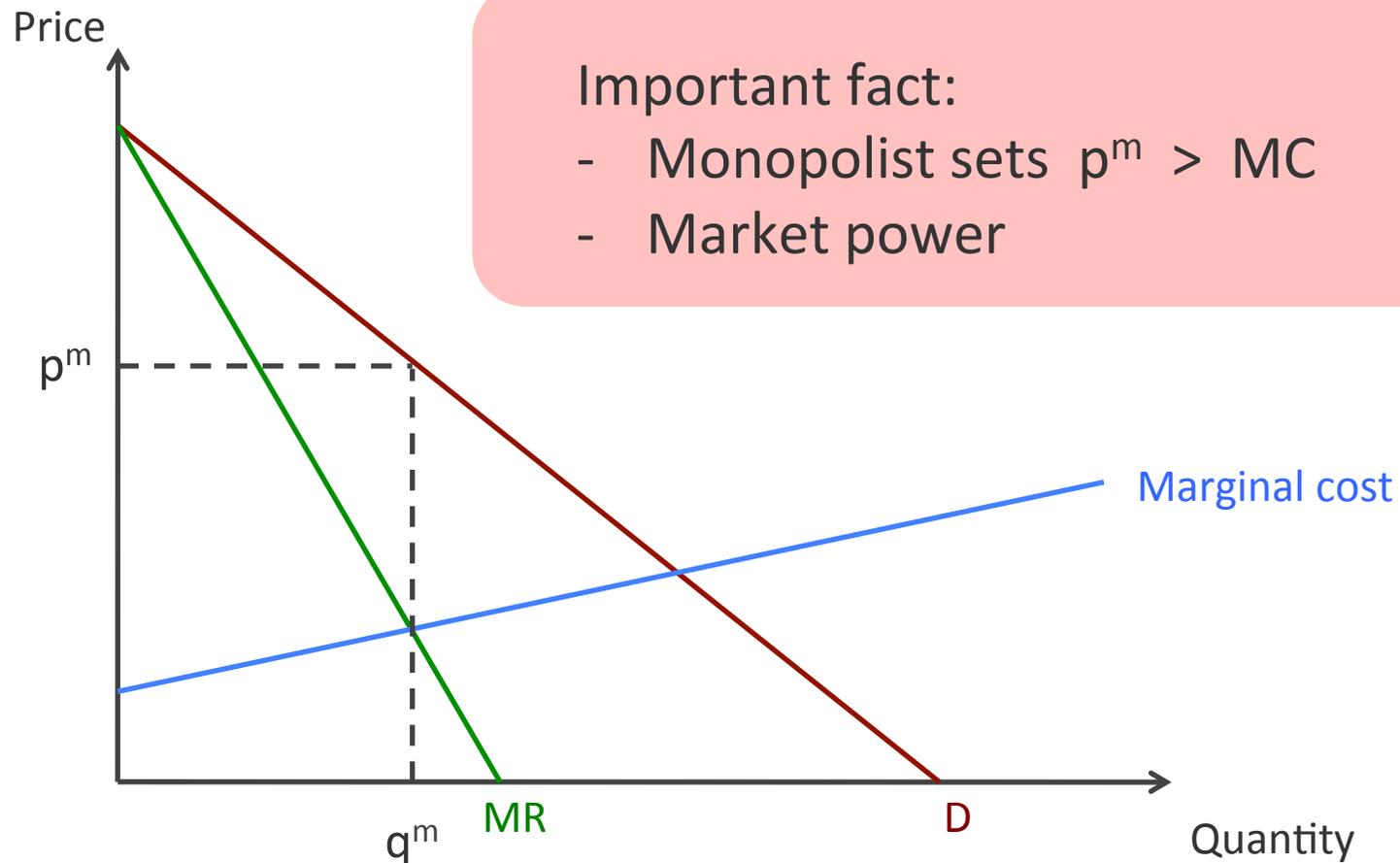
If $MR < MC$

- Last unit produced increased costs more than revenues
- Profit can be increased

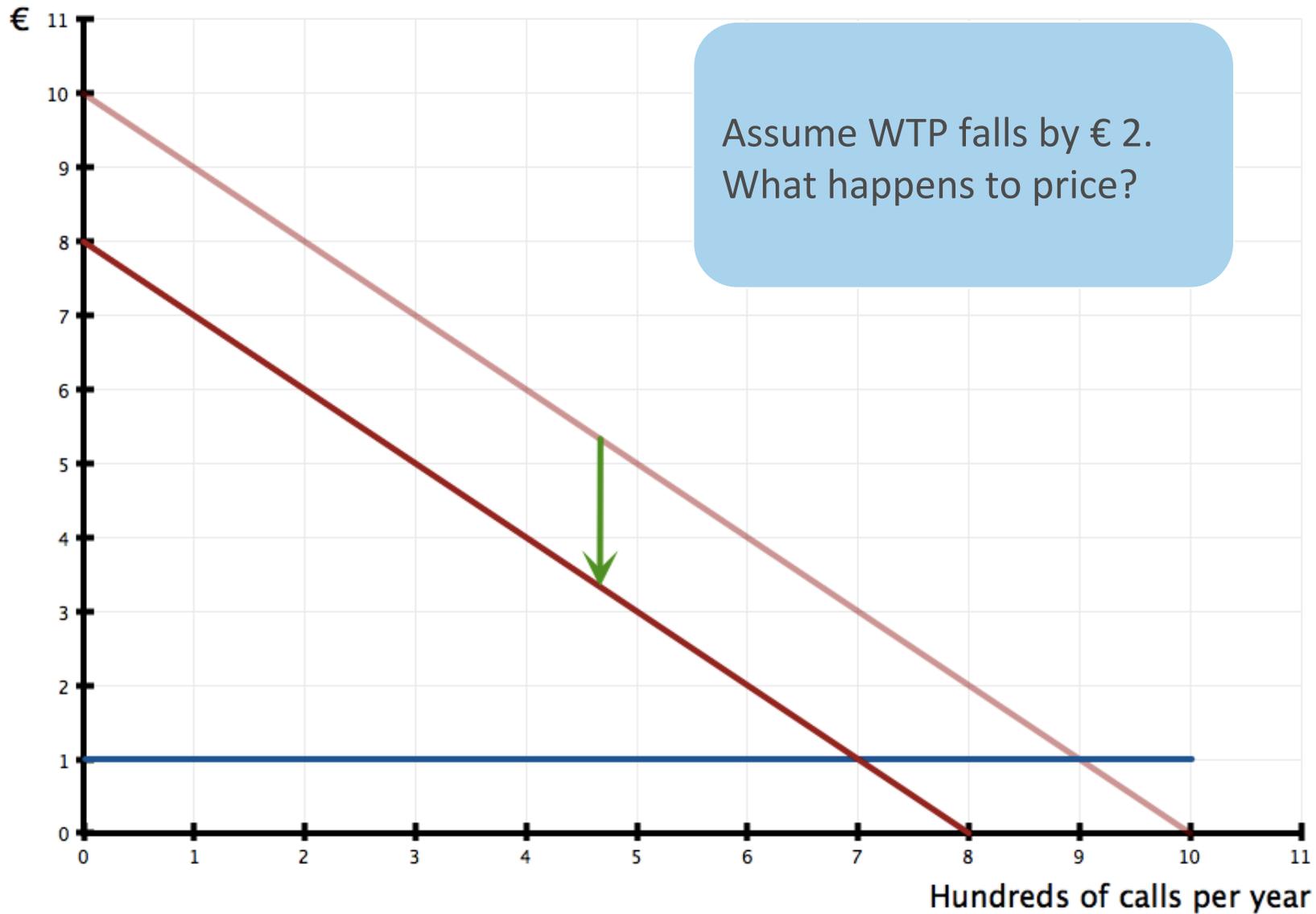
Monopolist's decision problem



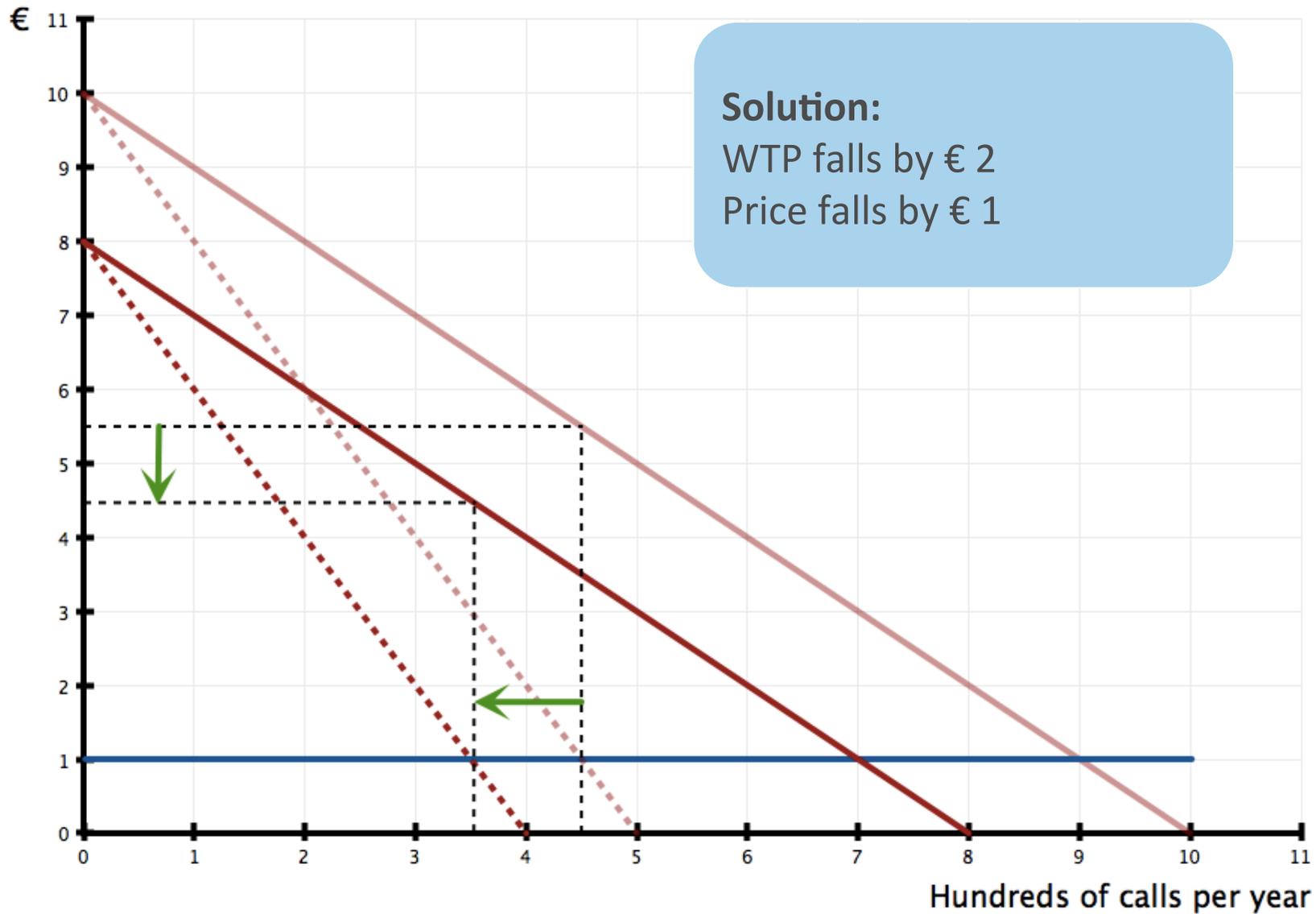
Monopolist's decision problem



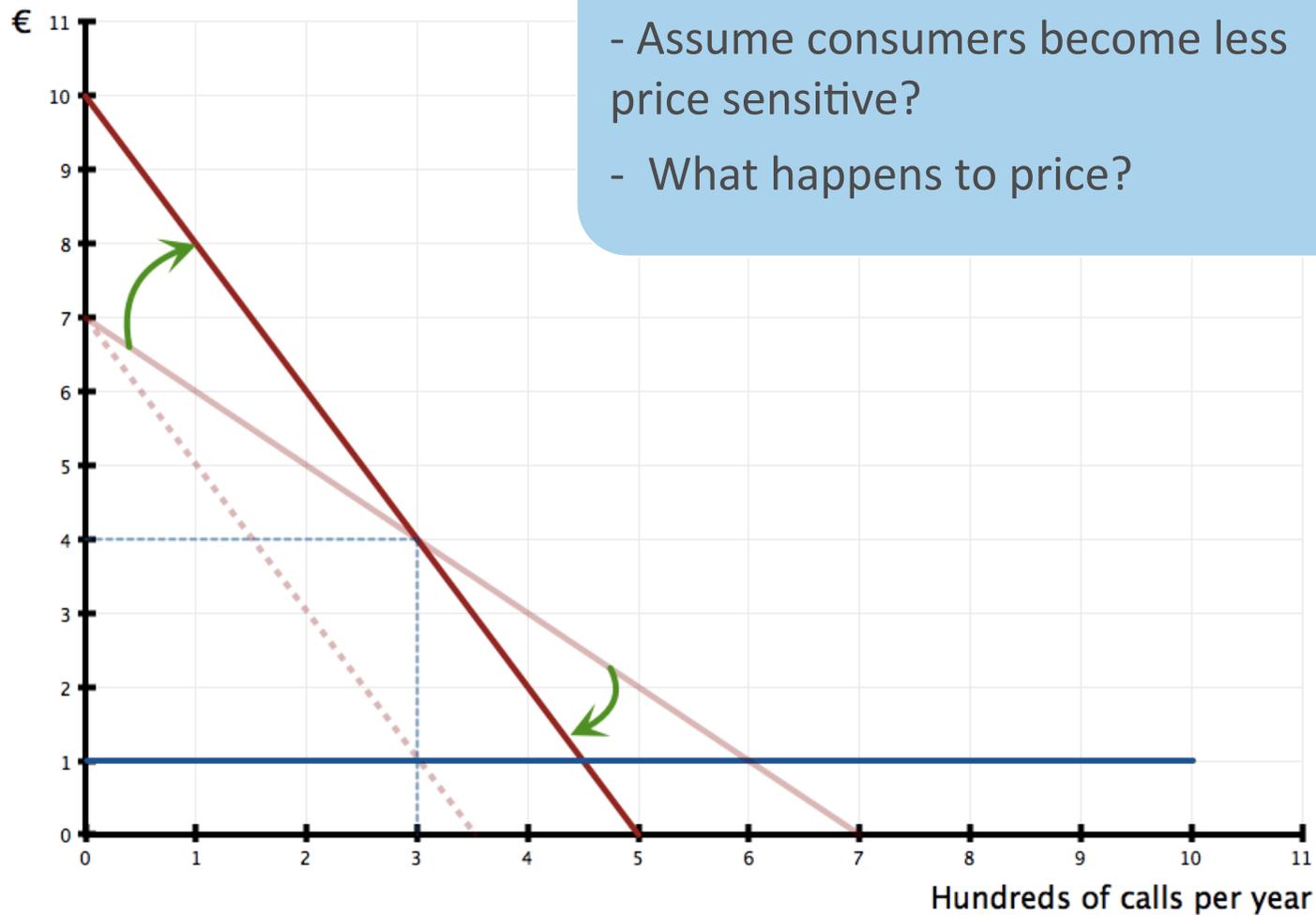
What determines price?



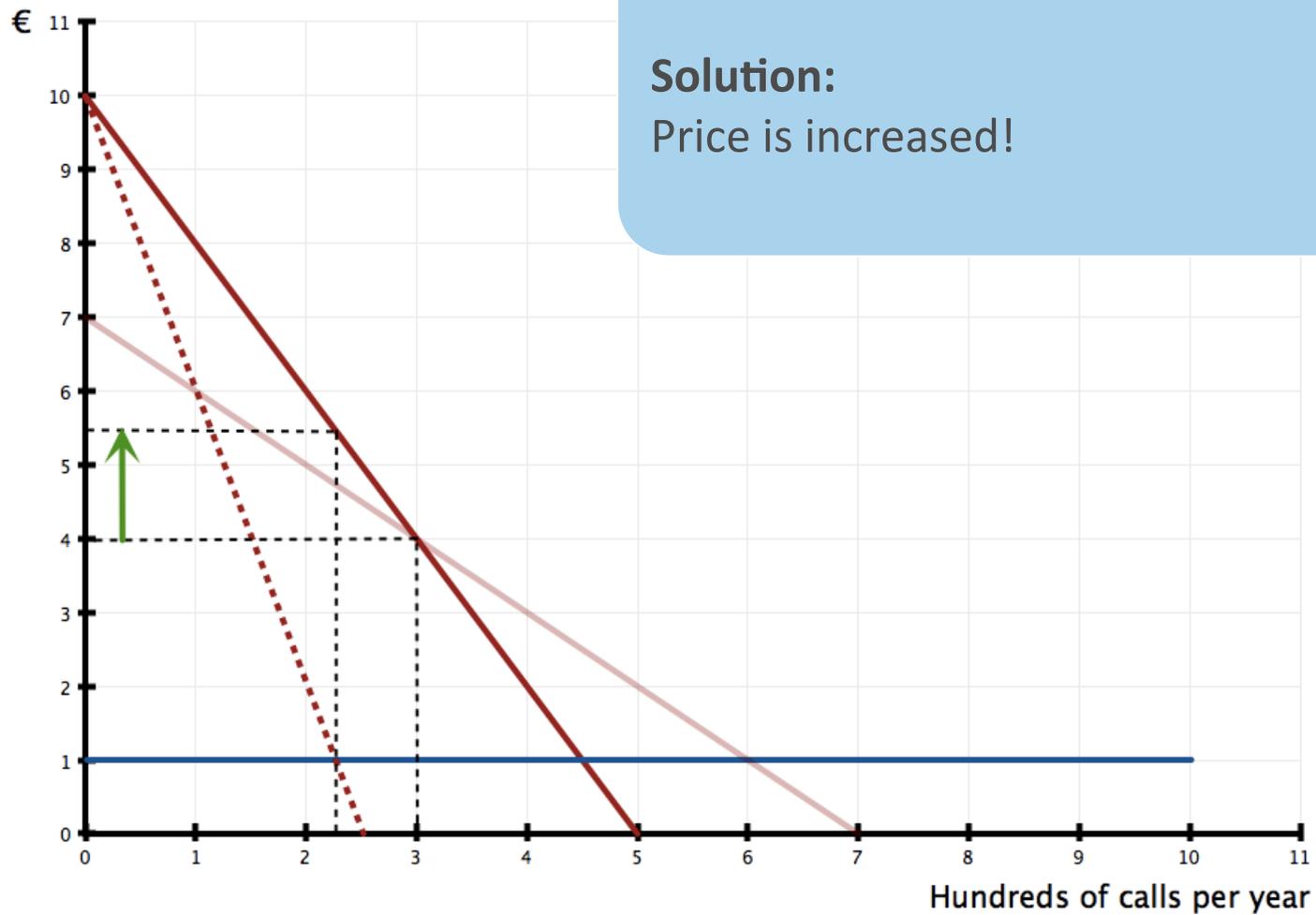
What determines price?



What determines price?



What determines price?



Solution:
Price is increased!

Monopoly

- Conclusions

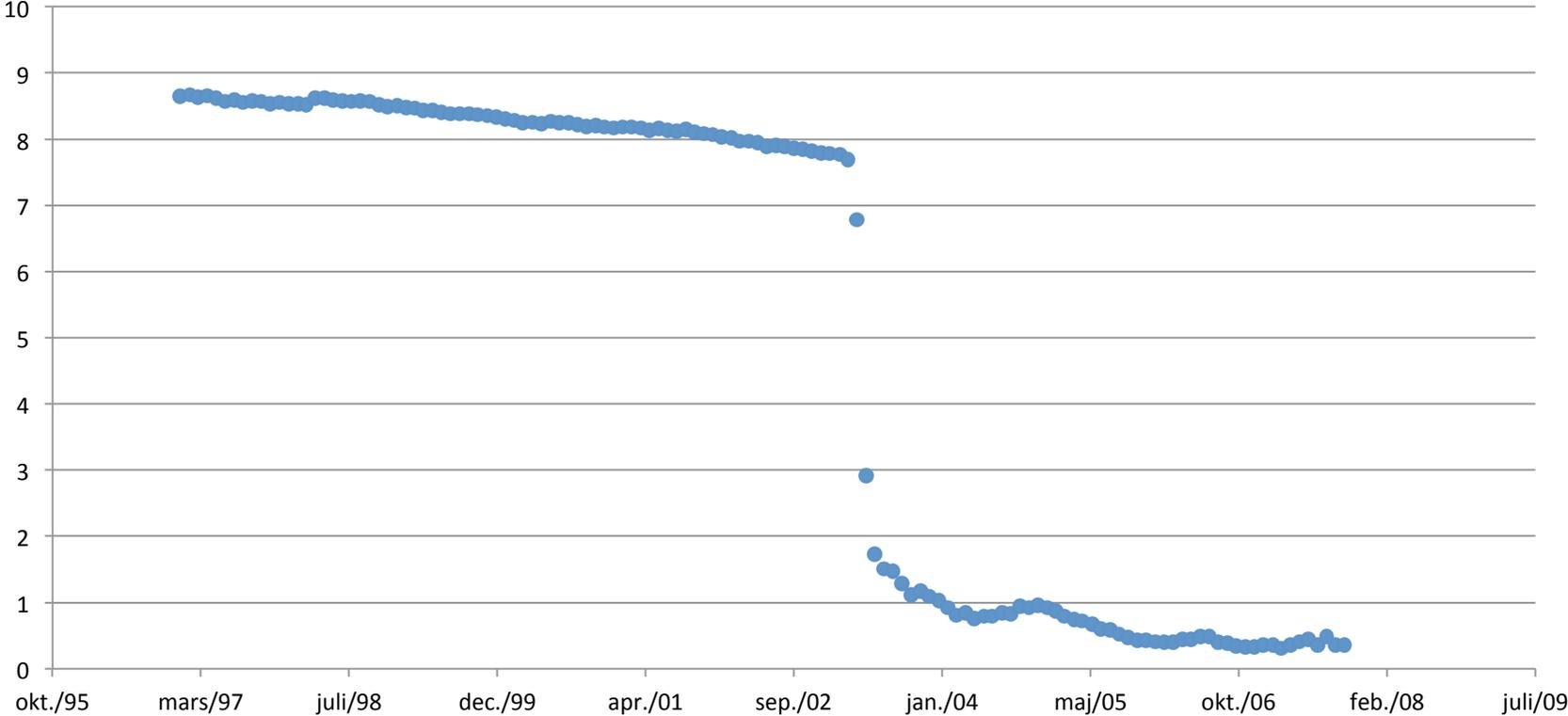
- A monopolist has market power ($p > mc$)
- The monopolists market power is determined by
 - Consumers' willingness to pay (i.e. level of demand)
 - Consumers' price sensitivity

Oligopoly

Oligopoly

- Example: Zocord
 - Reduces cholesterol
 - Produced by Merck & Co
- Patent expired
 - April 2003 (in Sweden)
 - Other companies started to sell perfect copies
(= containing exactly the same active ingredient Simvastatin)

Price of Zocord in Sweden
Nominal price per daily dose (SEK)



Duopoly model – Basic assumptions

- Concentration
 - Two firms = duopoly

Duopoly model – Basic assumptions

- Timing
 1. Firms set prices simultaneously
 2. Consumers decide how much to buy and from whom

Duopoly

- Technology
 - Constant marginal cost
 - Firms have same marginal cost
- Demand
 - Market demand: Linear (example)
 - Firms' goods homogenous

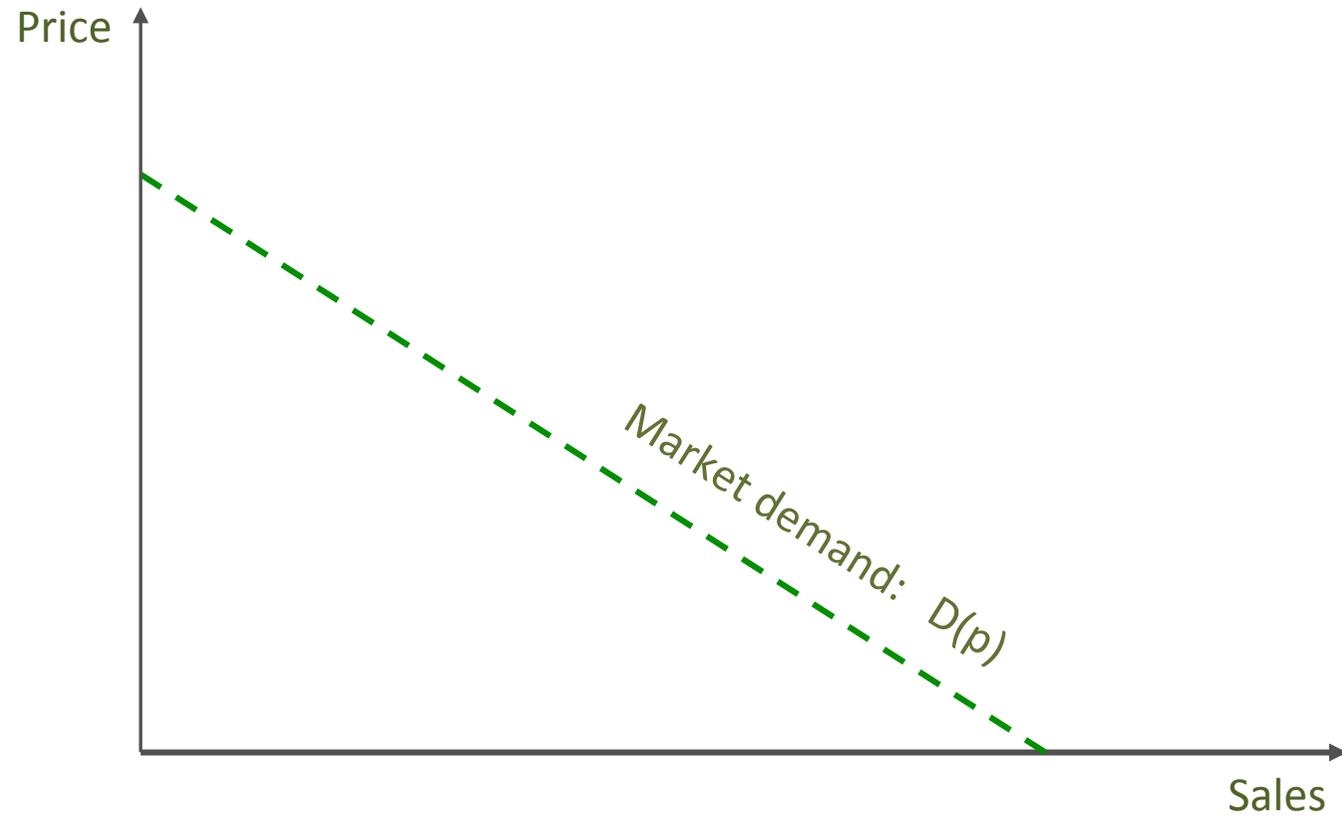
Duopoly

- Consumer behavior
 - All buy from cheapest firm
 - If same price: 50-50 split

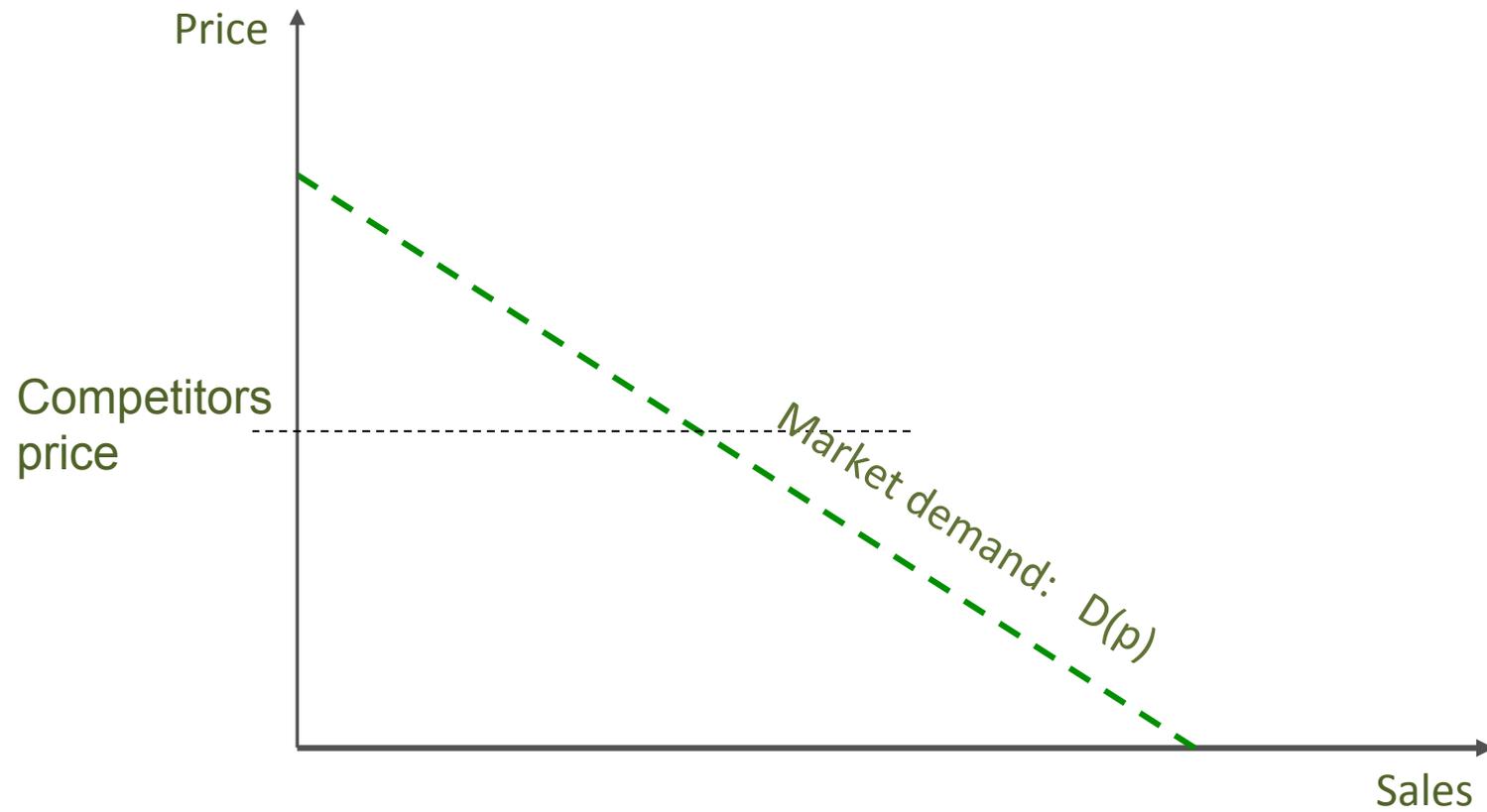
Duopoly

- Definition: A's residual demand
 - Trade-off between price and sales for firm A
 - given the price charged by B,
 - given market demand

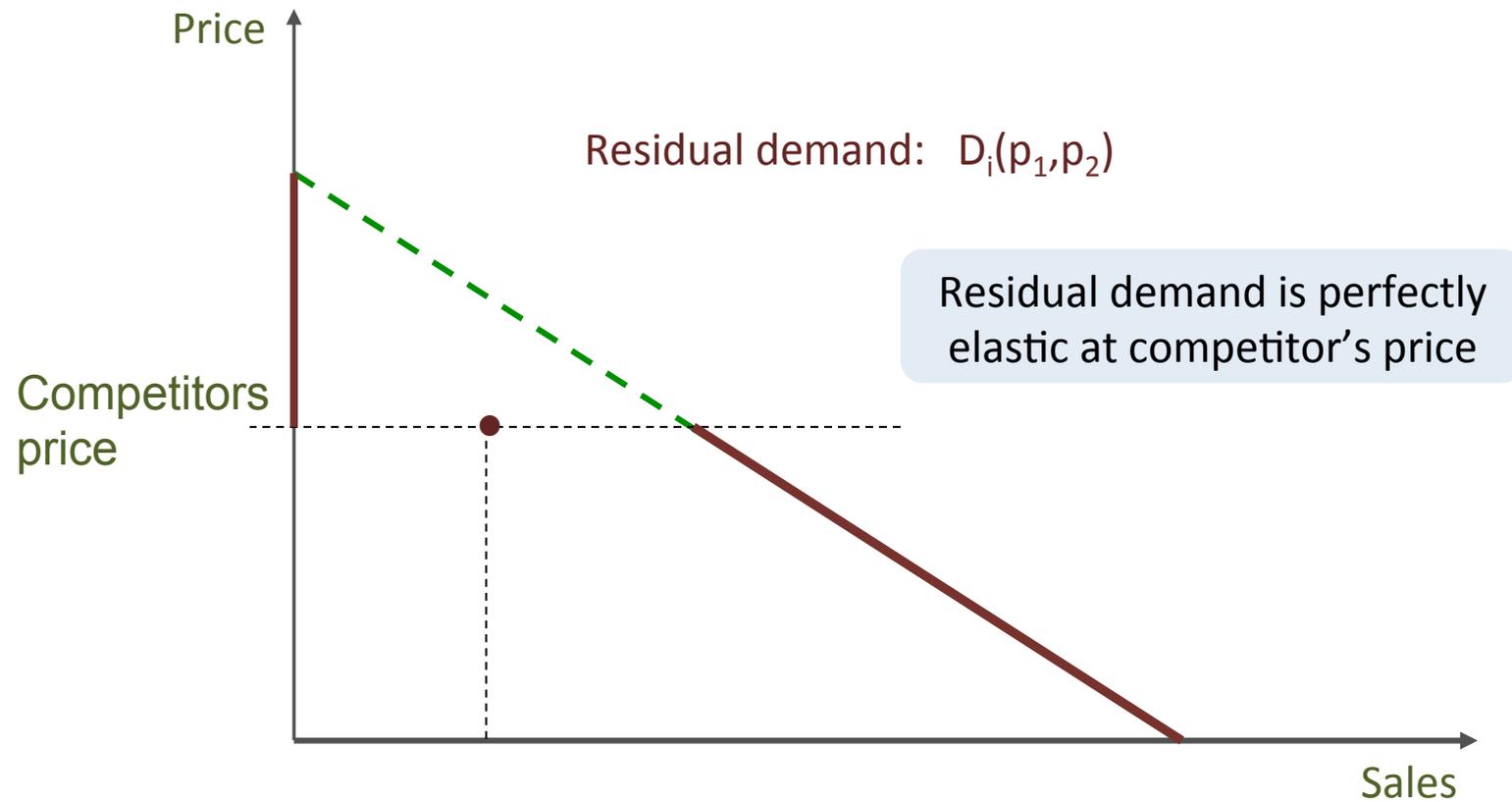
Duopoly



Duopoly



Duopoly



Duopoly

- The firms are interdependent
 - Firm 1's profit depends on firm 2's price and vice versa
 - Firm 1's best price depends on firm 2's price
- Analytical problem
 - Cannot determine firm 1's price before we know firm 2's price
 - Cannot determine firm 2's price before we know firm 1's price

Duopoly

- The firms are interdependent
 - Firm 1's profit depends on firm 2's price and vice versa
 - Firm 1's best price depends on firm 2's price
- Analytical problem
 - Cannot determine firm 1's price before we know firm 2's price
 - Cannot determine firm 2's price before we know firm 1's price
- Game theory
 - Theory of interdependent decision-making

Duopoly

- Basic idea of Game Theory
 - Both firms know from experience already in advance what they will both do
 - That is, both firms know what prices p_1 and p_2 they will charge
- Implication
 - Since firm 1 knows p_2 , its own price p_1 must be the best possible price for firm 1, given p_2
 - Since firm 2 knows p_1 , its own price p_2 must be the best possible price for firm 2, given p_1
- Nash equilibrium
 - When two actors do their best, given the behavior of the other party, we say that their behavior constitutes a Nash equilibrium

Duopoly

- Proposition
 - Unique Nash equilibrium: $p_1 = p_2 = c$

Duopoly

Proof

Candidate	Profitable deviation	
$p_1 > p_2 > c$	Firm ?	Deviation ?
$p_1 = p_2 > c$		
$p_1 > p_2 = c$		
$p_1 = p_2 = c$		

Duopoly

Proof

Candidate	Profitable deviation	
$p_1 > p_2 > c$	Firm 1	$p_1 = p_2 - \varepsilon$ (max p^m)
$p_1 = p_2 > c$?	?
$p_1 > p_2 = c$		
$p_1 = p_2 = c$		

Duopoly

Proof

Candidate	Profitable deviation	
$p_1 > p_2 > c$	Firm 1	$p_1 = p_2 - \varepsilon$ (max p^m)
$p_1 = p_2 > c$	Firm i	$p_i = p_j - \varepsilon$ (max p^m)
$p_1 > p_2 = c$?	?
$p_1 = p_2 = c$		

Duopoly

Proof

Candidate	Profitable deviation	
$p_1 > p_2 > c$	Firm 1	$p_1 = p_2 - \varepsilon$ (max p^m)
$p_1 = p_2 > c$	Firm i	$p_i = p_j - \varepsilon$ (max p^m)
$p_1 > p_2 = c$	Firm 2	$p_2 = p_1 - \varepsilon$ (max p^m)
$p_1 = p_2 = c$?	?

Duopoly

Proof

Candidate	Profitable deviation	
$p_1 > p_2 > c$	Firm 1	$p_1 = p_2 - \varepsilon$ (max p^m)
$p_1 = p_2 > c$	Firm i	$p_i = p_j - \varepsilon$ (max p^m)
$p_1 > p_2 = c$	Firm 2	$p_2 = p_1 - \varepsilon$ (max p^m)
$p_1 = p_2 = c$	-	-

Duopoly

- Conclusion
 - Firms set prices equal to cost
 - No market power
 - As in perfect competition

Duopoly

- Extreme situation
 - 2 firms: $p = c$ & $\pi = 0$
 - Reason: Reduce price one cent, get all customers
- More often
 - More firms: $p > c$ & $\pi > 0$
 - Reason:
 - Don't get all customers, when price is just below competitors
 - Thus price cuts not as profitable
 - Thus prices will be higher

Sources of Market Power

= any reason why an oligopoly firm does not get all customers when charging a price slightly below competitors

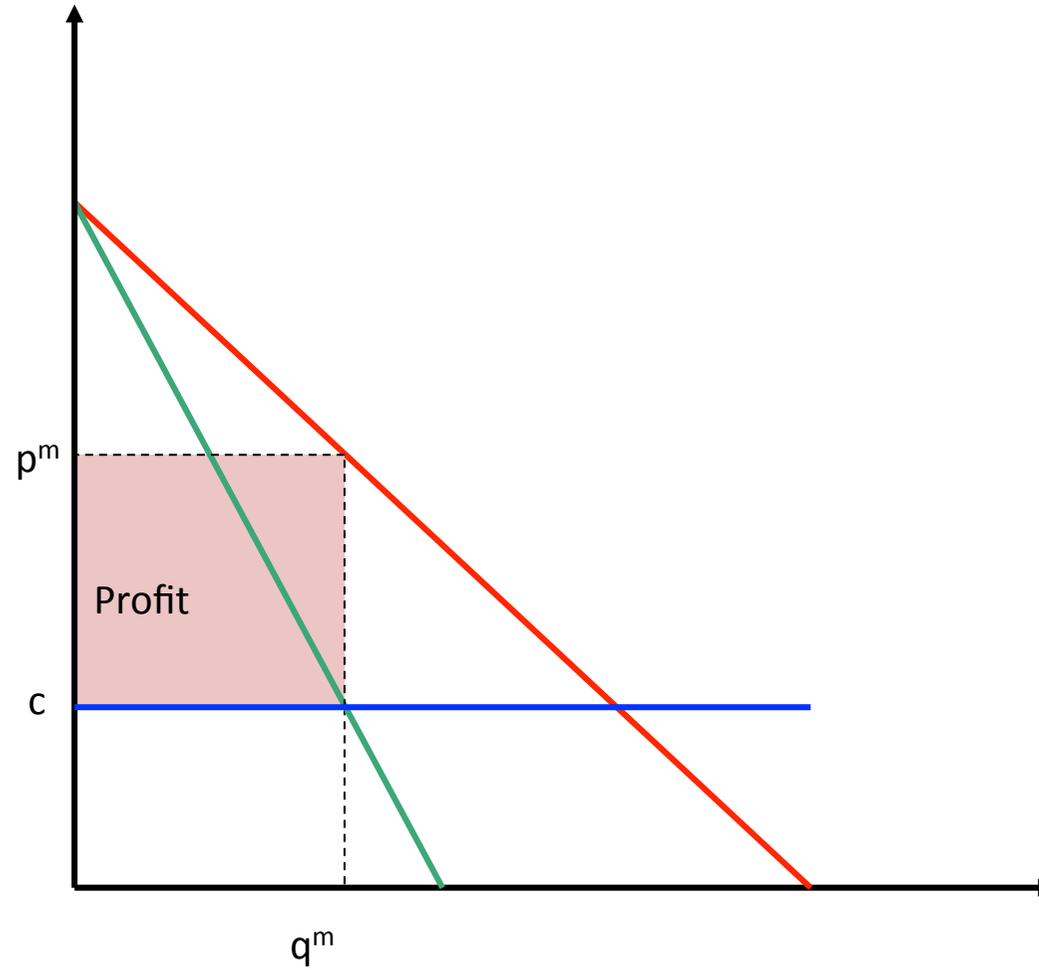
Sources of market power

- Number of firms (market concentration)
- Products
 - Vertical differentiation
 - Horizontal differentiation
- Technology
 - Cost advantage
 - Capacity constraints
- Customers
 - Price information
 - Switching costs

3. How does market power affect welfare?

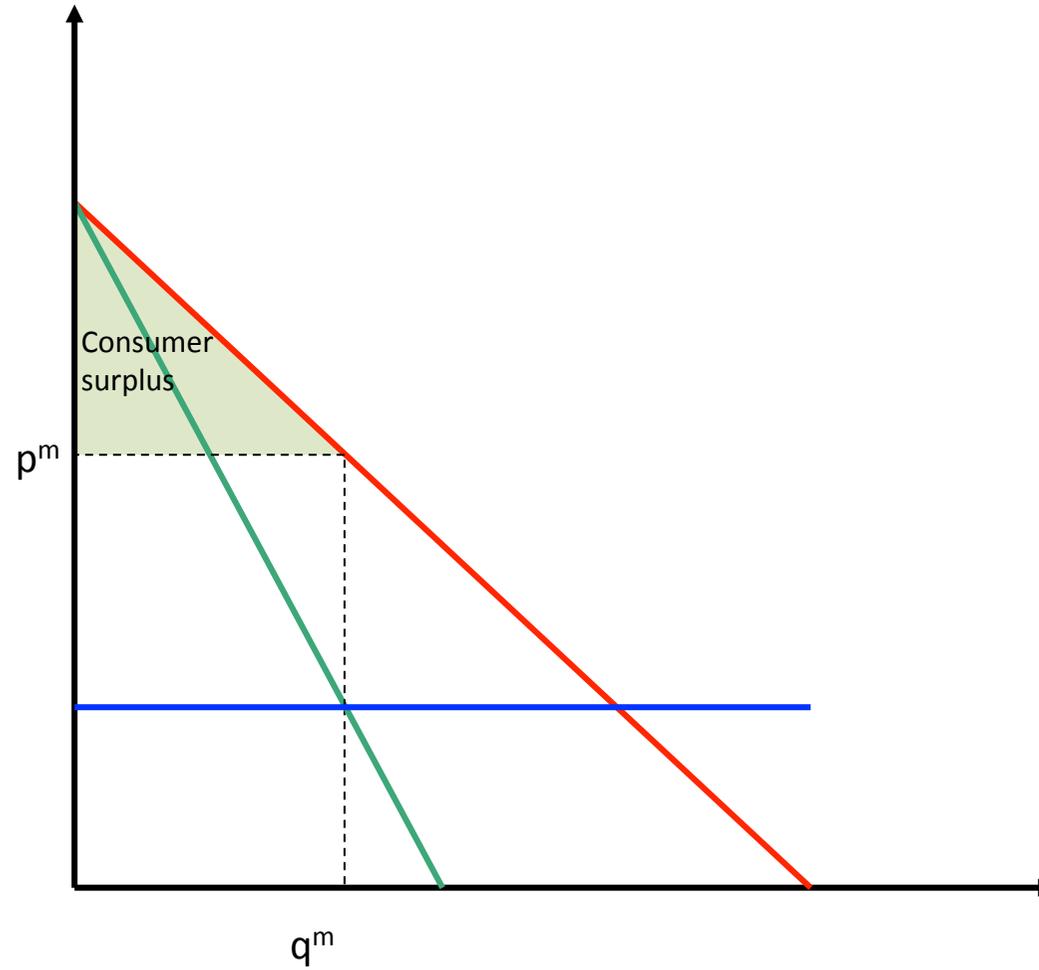
Monopoly

Welfare



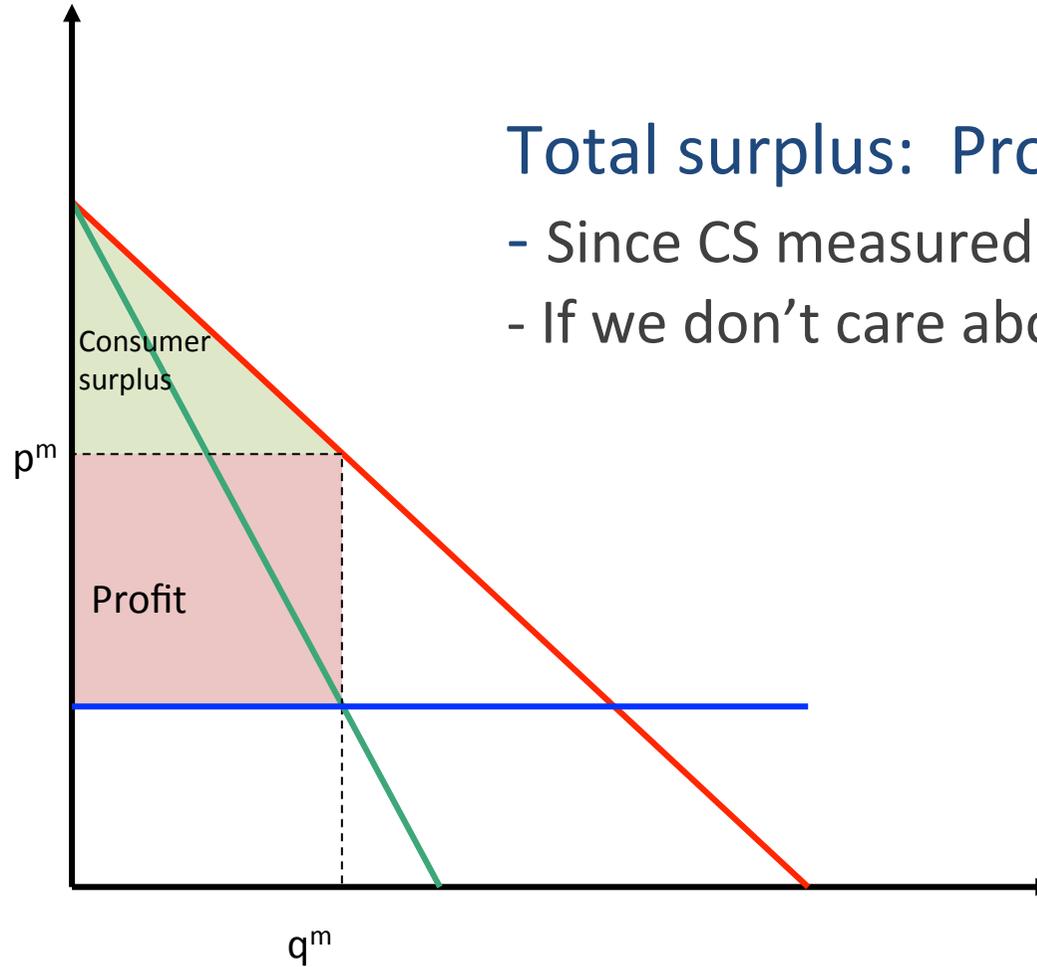
Monopoly

Welfare



Monopoly

Welfare



Total surplus: Profit + CS

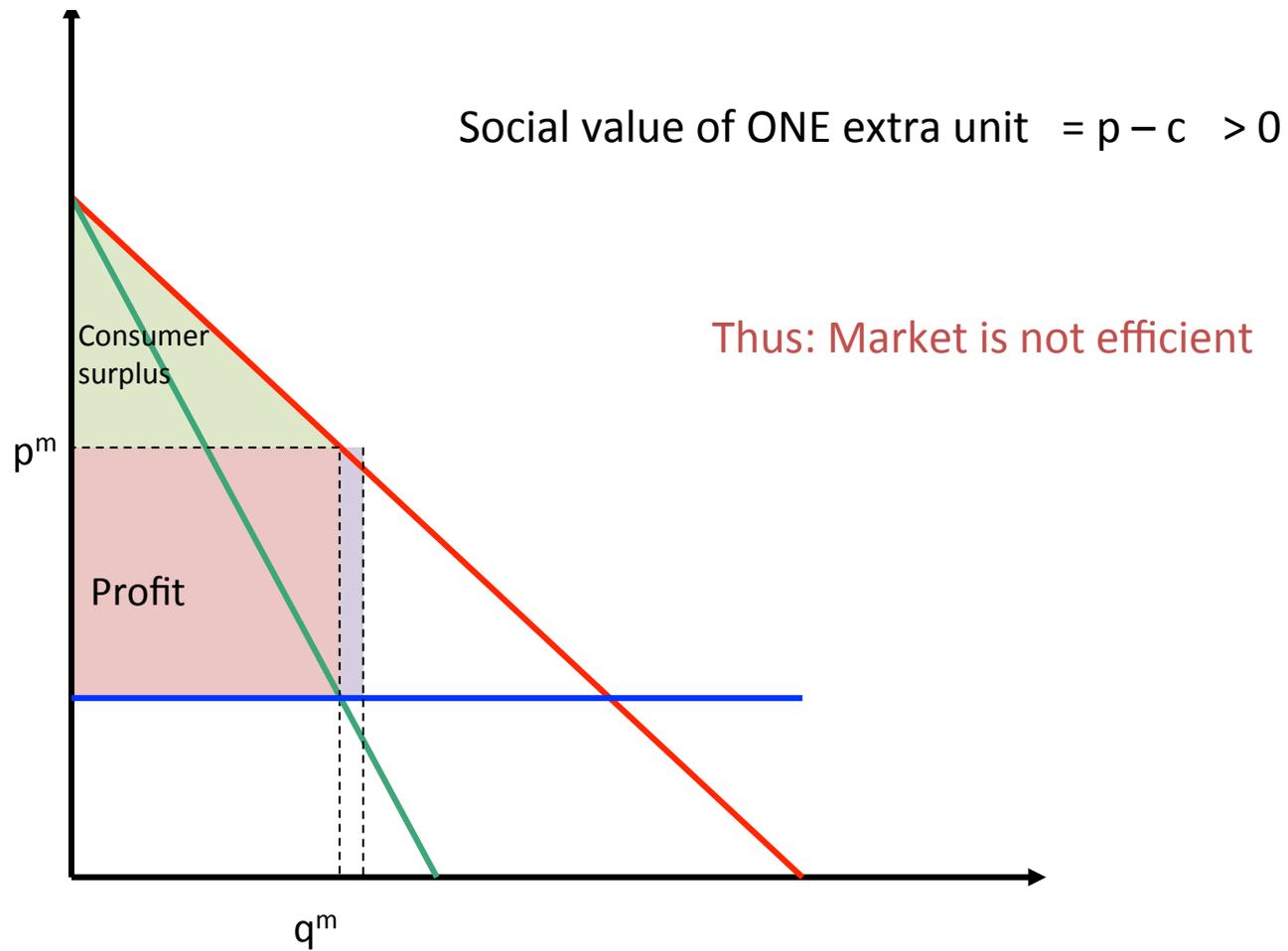
- Since CS measured in €

- If we don't care about distribution

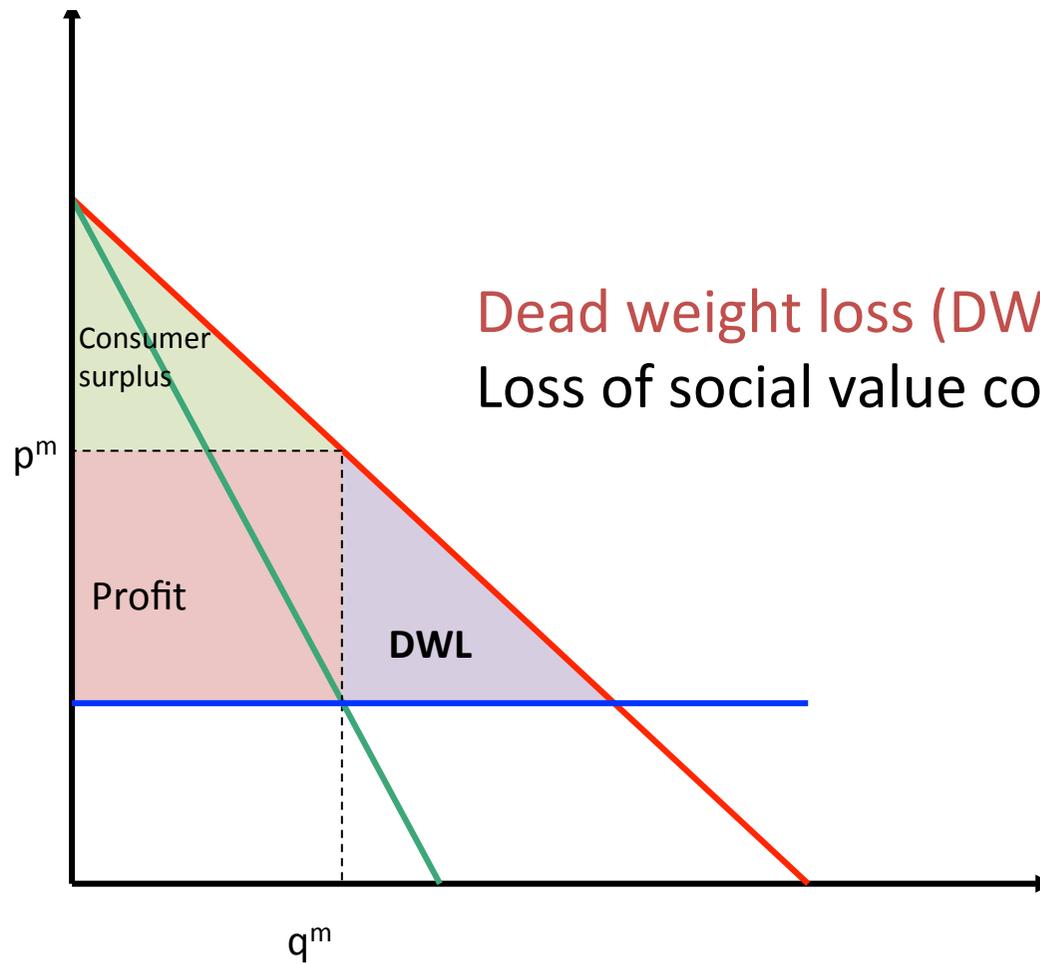
Efficiency

- Q: Is it possible to increase welfare in this market?
 - Yes,
 - at least if we don't care about the distribution of wealth
- Q: How?
 - Force firm to produce one unit more
 - Firm loses profit
 - But consumers gain is larger

Efficiency



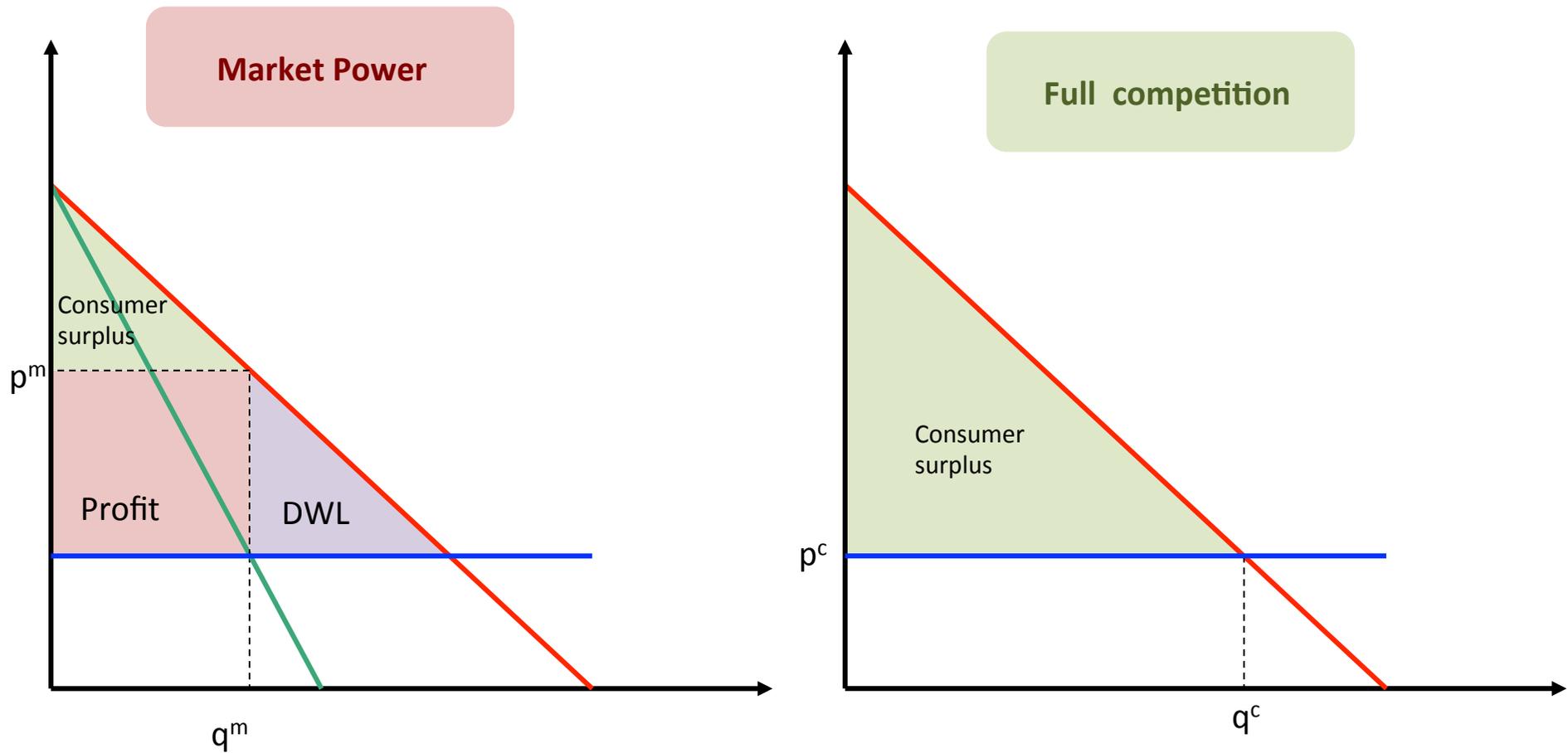
Efficiency



Dead weight loss (DWL) =
Loss of social value compared to maximum

Transfer of wealth

from consumers to firm owners



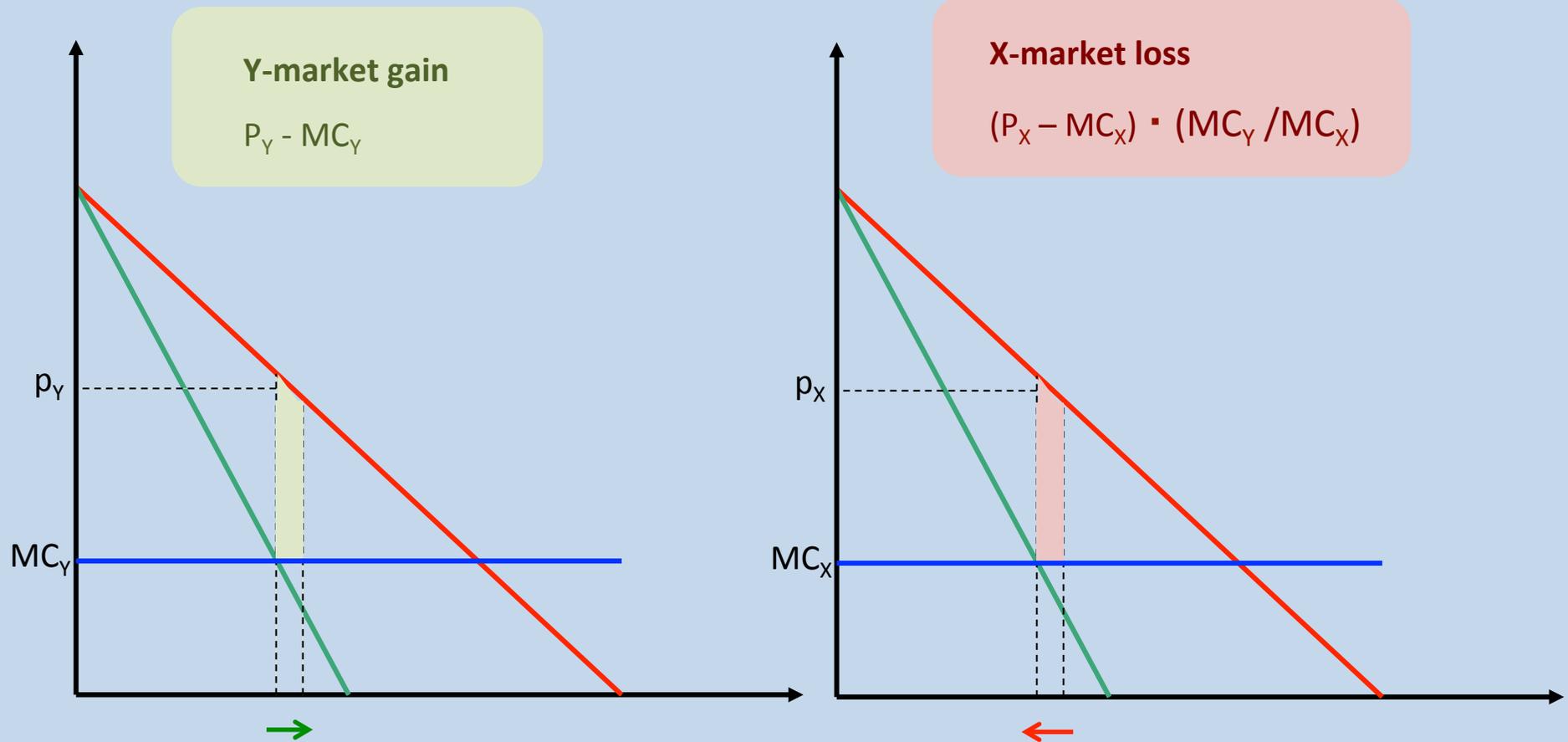
Effects on welfare

- Inefficiencies caused by market power
 - Reduced production & consumption (Dead weight loss)
 - Lower quality (not always)
 - Less choice (not always)
 - High cost firms can survive
 - Less incentives for innovation???
 - Lobbying to preserve monopoly
- Distribution
 - Transfer of wealth from consumers to producers

Effects on welfare

- But, there are also tradeoffs
 - More incentives for innovation???
 - Economies of scale
 - ...

Efficiency, revisited



4. What policies can limit market power?

What policies can limit market power?

- Deregulation
 - Ex: Airline market (entry used to be difficult)
- Free trade agreements
 - Ex: European Union
- Price regulation
 - Ex: Telecom; pharmaceuticals
- Subsidies
 - Ex: public service; public options in health
 - But can also reduce competition
- Competition policy
 - The focus of this course

Purpose

- Set of rules intended to protect “the process of competition” to maximize consumer welfare (Richard Whish)

Growing importance

- Growing importance in the world
 - Modern origin: USA
 - Important part of EU
 - Recently: China, India and 120 other countries
- Growing importance in new sectors
 - Telecom, energy, transport, broadcasting, postal services

Interdisciplinary

- Law meets economics
 - Application of the law involves assessment of competition/market power
 - Requires economics
- Interdisciplinary
 - Competition lawyers must understand economics
 - Competition economists must understand law

4 pillars

- Anticompetitive agreements (ex: cartel)
 - Article 101 TFEU (Treaty of the Functioning of the EU)
 - KL 2 kap. 1 § (Swedish competition act)
- Abuse of dominant position (ex: predatory pricing)
 - Article 102 TFEU
 - KL 2 kap. 7 §
- Mergers that reduce competition
 - EUMR
 - KL 4 kap.
- Public restriction of competition (ex: subsidies)
 - Article 107 TFEU
 - KL 3 kap 27 §

5. How can market power be measured?

Measurement

- Issue
 - To reduce market power (= promote competition)
 - We need to measure market power (= competition)
- Example: merger policy
 - Aim
 - Block mergers that reduce competition
 - Allow mergers that don't
 - Need to
 - Forecast how merger changes competition
 - Depends on how firms compete today

How to measure market power?

- Naive
 - Lerner index: $(p-c)/p$
 - Accounting profits
- Pros and cons
 - Marginal cost can typically not be observed
 - Even price can sometimes not be observed
 - Accounting profits distorted eg by arbitrary depreciation rules

How to measure

- Econometric techniques

- Estimate demand, price and cross-price elasticities
- Estimate marginal cost and conduct

- Pros and cons

- Lack of data
- May take too long time (legal time limits)
- Used sometimes

Example of techniques:

Genesove, D. and W. P. Mullin (1998):

Testing Static Oligopoly Models:

Conduct and Cost in the Sugar Industry, 1890-1914.

RAND Journal of Economics 29, 355-377.

How to measure market power?

- Traditional legal approach
 - Market shares
 - Concentration indexes (eg: C_4 , HHI)
- Pros and cons
 - Indirect measures of market power, sometimes

Europe

Dominance = legal term

High level of market power = economic equivalent

1. Define relevant market

- Product market (eg: cola flavored soft drinks)
- Geographical market (eg: Sweden)

2. Assess dominance

- Compute market shares and concentration
- Compare to thresholds. Example:
 - Market share $< 40\%$ \Rightarrow firm unlikely to be “dominant”
 - Market share $> 50\%$ \Rightarrow firm likely to be “dominant”
- Consider other factors. Examples:
 - Ease of entry
 - Countervailing buyer power

How to define markets

How to define of markets

- Market
 - A collection of products (and geographical areas),
 - that exercise competitive constraint on each other,
 - since the consumers consider them to be substitutable
- Let's start with an example
 - Define the product market for Toyota Corolla

Define market for Toyota Corolla

Possible products on the same market

Toyota Corolla



Honda Civic



Ford Focus



Chevrolet Cruze



Define market for Toyota Corolla

- Step 1:
 - Suppose Toyota would increase price of Corolla by 5–10 % above the competitive level

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- IF not profitable
 - ie if sufficient number of consumers leave
- THEN at least one other product on the same market
 - ex: many consumers switch to Honda Civic
 - continue to step 2

Define market for Toyota Corolla

- Step 2:
 - Suppose the same firm would own both Corolla & Civic
 - and would increase price of both by 5–10 % above the competitive level

- IF profitable
 - ie if sufficient number of consumers stay
- THEN Corolla & Civic is the relevant market
 - ie Toyota is duopolist

- IF not profitable
 - ie if sufficient number of consumers leave
- THEN at least one other product on the same market
 - ex: many consumers switch to Ford Focus
 - continue to step 3

Define market for Toyota Corolla

- Step 3:
 - Suppose the same firm would own Corolla & Civic & Focus
 - and would increase price of all by 5–10 % above the competitive level

- IF profitable
 - ie if sufficient number of consumers stay
- THEN Corolla & Civic & Focus is the relevant market
 - ie Toyota is triopolist

- IF not profitable
 - ie if sufficient number of consumers leave
- THEN at least one other product on the same market
 - ex: many consumers switch to Chevrolet Cruz
 - continue to step 4

Define market for Toyota Corolla

Relevant market for Corolla

Toyota Corolla



Honda Civic



Ford Focus



Chevrolet Cruze



How to define of markets

- SSNIP-test
 - **S**mall but **S**ignificant **N**on-transitory **I**ncrease in **P**rice
 - Invented in the US - Now used around the world.
- a.k.a. Hypothetical monopolist test
 - Idea: A market is the smallest collection of goods profitable to monopolize

How to define of markets

- Next step is to define geographical market
 - Example 1: Geographical market of convenience store
 - Probably only other convenience stores within 500 meters radius
 - Consumers only walk 500 meters, if price increased by 5-10%
 - Example 2: Geographical market of furniture store
 - Probably all other furniture stores in the same town.
 - Consumers switch if price increased by 5-10%.
- Same procedure:
 - Geographical market = stores that are good substitutes for consumers
 - Use SSNIP-test

How to define of markets

- Supply substitution
 - Only in Europe
- Example: paper market (Torras/Sarrio)
 - Consumers don't switch between
 - High quality paper - used for art books
 - Low quality paper - used for news papers
 - But paper manufacturers can easily switch
 - Thus, not profitable for hypothetical monopolist of high quality paper to increase price

Types of Evidence

- **Product characteristics and usage**
 - Sometimes competition authorities simply assume that two products must be on the same market if they are very similar
- **Consumer surveys**
 - Ask consumers what products they consider to be substitutes
- **Demand estimation**
 - Price elasticity
 - Cross price elasticity
- **Other**
 - Price correlations
 - Price differences

Applications

(if time permits)

Application 1

- Q: Are bananas a separate market from fruit in general?
 - Bananas and apples have different forms, colors and tastes
 - Some people don't have teeth and may have difficulties eating apples

Application 1

- *ECJ* said yes in United Brands case
 - Babies and old people without teeth cannot switch
- Critique
 - Most people have teeth; they can switch
 - A banana monopolist would not increase price
- General insight
 - Price discrimination → More narrow markets
 - Not only supply and demand substitution matter

Application 2

- Q: Can distant convenience stores be on the same market?
 - Four stores on the street



- Some choose between A and B, some between B and C, but no one between A and C
- Which stores are on A:s market?

Application 2

- Intuitively

- B is on the same market as A



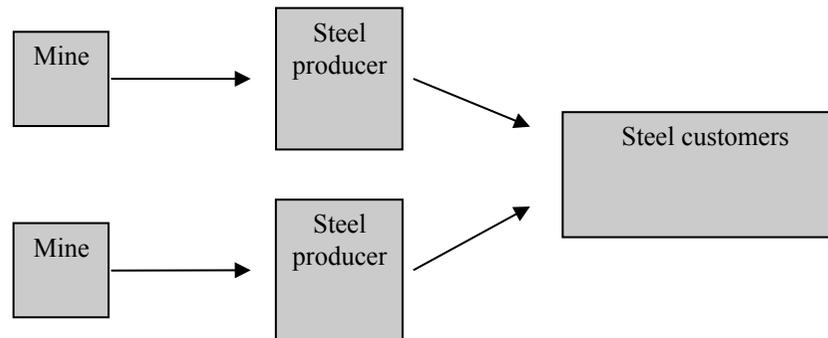
- But also C and D might put competitive pressure on A
- If C keeps low price, B has to keep low price, then A has to keep low price
- Indirect competition = chain of substitution

Application 2

- Is indirect competition discovered by SSNIP?
 - B probably on the same market as A
 - If A increases price
 - most customers switch to B
 - Also C on the same market as A
 - If A & B increase price
 - people living between A and B may be captive
 - but they lose all living between B and C
 - D may not be on the same market
 - If A, B & C increase price
 - only small proportion of customers switch

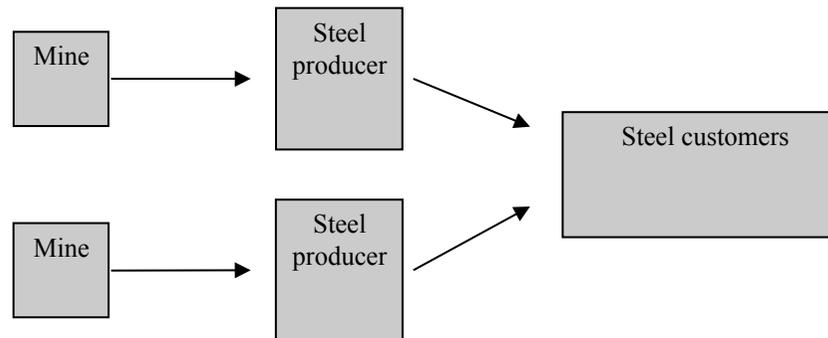
Application 3

- Q: Are iron mines far apart on the same market?
 - Steel producers only buy from local mine
 - Low value to volume



Application 3

- Demand substitution at retail level
 - Mine A cannot increase price above mine B
 - Steel customers would not stick with steel producer A if A needs to increase its price



Application 4

- Q: Are razors blades part of a system consisting of razors and blades?
 - If blades: Gillette is a monopoly provider of blades to Gillette razors
 - If system: Many suppliers of razor systems

Application 4

- Pricing trade-off
 - Captive consumers owning Gillette razor must buy Gillette blades
 - New consumers may consider life-time cost of different systems
- General Insight: After-markets
 - If razors are bought frequently and if customers are sophisticated, Gillette does not have ability to increase price of blades.

Application 5

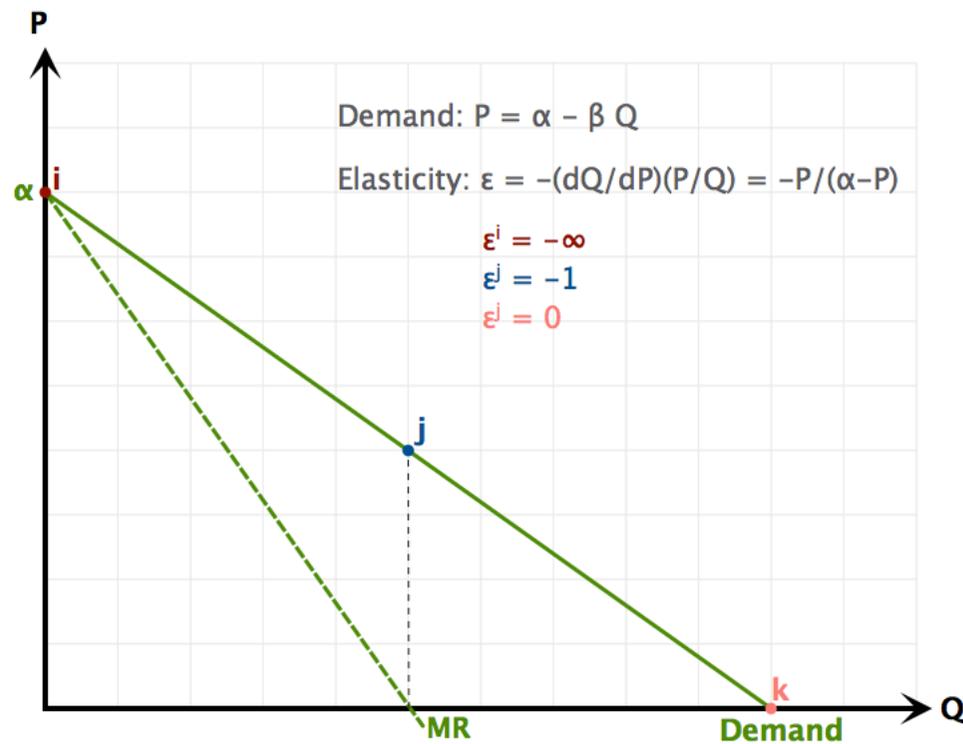
- Q: Is cellophane part of larger packaging market?
 - DuPont presented econometric evidence on price elasticities
 - DuPonts demand elastic
 - Thus: If it would increase price, large proportion of customers would switch to e.g. aluminum foil

Application 5

- US supreme court
 - Yes, cellophane is part of larger packaging market!

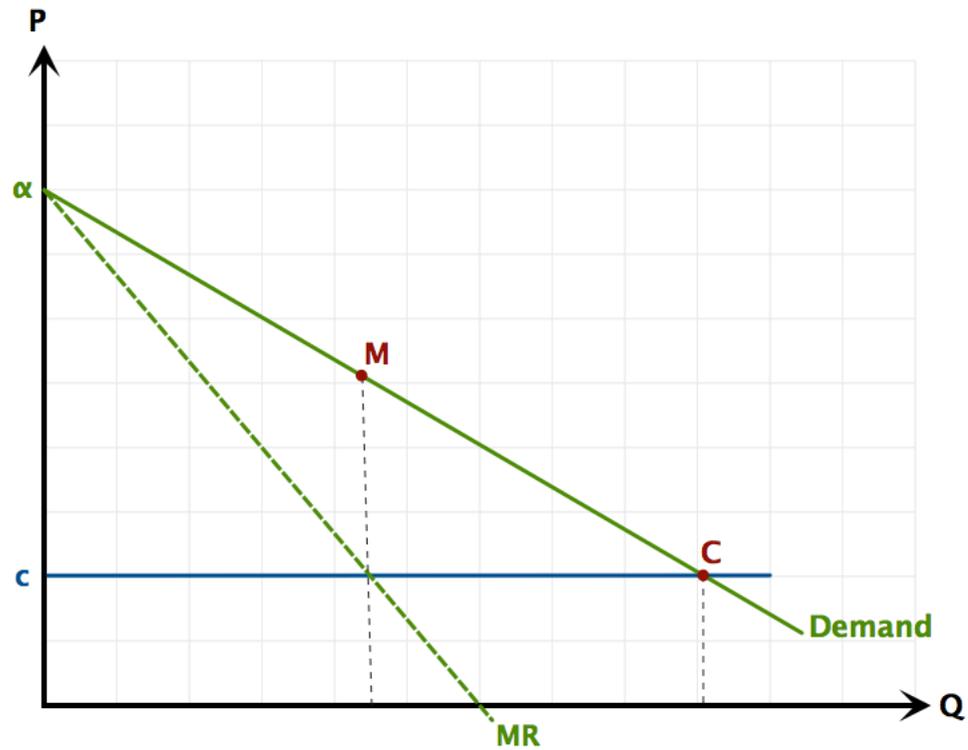
Application 5

- Critique: Price elasticity varies along demand curve



Application 5

- Monopolist chooses to operate on elastic part



Application 5

- Critique
 - The Court failed to see that DuPont had already increased its price above cost.
 - At this level further increases would, by definition, have been unprofitable
- General insight: Prevailing price vs competitive price
 - Firms increase prices as long as the gain from a higher markup outweighs the loss of customers. Since sales are reduced, the gain from a higher markup will sooner or later be dominated – the profit maximizing price.
 - To see if the cellophane market is worth monopolizing, one needs to consider price increases from the competitive price level (i.e. cost)

Application 6

- Market for spring mineral water
 - Should producers of soft drinks be included?
 - Easy to start sell purified tap water
 - No. Would require long and expensive advertising campaigns
 - (Nestlé/Perrier)

Application 7

- **Market for air transport services in EU**
 - Usually defined as city pairs, e.g.
 - London-Paris
 - Brussels-Berlin
 - Should firm active on other city pairs be included?
 - They have planes and personnel
 - No big deal to switch routes
 - But, no
 - Airports congested – impossible for airlines to switch
 - (Lufthansa/SAS)