



School of Business,
Economics and Law
GÖTEBORG UNIVERSITY

Industrial Organization

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Industrial Organization

- Q: What is Industrial Organization?

The study of:

“the causes and consequences of market power”

Jean Tirole

Industrial Organization

- Q: What is market power?

Definition: Market power

The ability to charge a price above cost without losing all customers

Agenda

- **Theory**

- What determines the strength of price competition?
 - market concentration
 - product differentiation
 - productivity differences
- Competition by other means than price
 - product choice
 - (innovation)
 - entry

Agenda

- **Measurement**
 - How to measure the strength of competition?

Agenda

- **Competition Policy**
 - Horizontal Mergers
 - Cartels
 - (Vertical Agreements)
 - (Abuse of dominance)

Agenda

- **Work in groups**
 - Quizzes
 - Problem sets
 - Labs

Agenda

- **My material: www.stennek.se/teaching**
- **Please read Course Guide**



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What is a Market?

HMW 19

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What is a market?

- Q: What is a market?
- Ordinary language
 - Often very broad (e.g. car market)
- Micro economics
 - Every good is a separate market.
 - Goods distinguished by physical characteristics, time, location, state of world

What is a market?

- Industrial economics
 - Somewhere in-between
- Why delineate markets?
 - To describe (and measure) competition
 - To identify which firms compete with one another
- Note
 - Car market too broad
 - Spiker does not compete with Tata
 - World market often too broad
 - ICA does not compete with Walmart
 - “micro market” often too narrow
 - Volkswagen and Ford do compete with each other

What is a market?

- First approximation
 - Two *goods* are on the same market if consumers consider them sufficiently close substitutes
 - Then, the two producers have to compete.
- But
 - Many practical problems arise when this definition applied to a concrete example
 - And, also some other aspects important

What is a market?

- Competition policy
 - Used to assess a firm's market power
= absence of (price) competition
 - Probably the most systematic approach
 - Still ... sometimes confusing

Market Dimensions

Two important aspects

- Product differentiation
 - Define: product markets
 - Are Volvo and BMW on the same market?
- Geographical segmentation
 - Define: geographical markets
 - Are Gothenburg and Jönköping part of the same geographical market?

Product differentiation

- Horizontal product differentiation
 - Example: Coke and Pepsi
 - Different people prefer different variants
- Vertical product differentiation
 - Example: BMW and Skoda
 - All people agree on ranking (at same price)

Geographical segmentation

- Why geographical segmentation?
 - Transportation costs
 - Reach of distribution networks
 - National borders
 - tariffs & quotas
 - safety regulations
 - language

Geographical segmentation

- Geographical market
 - Also geographical markets defined by substitutability
 - Set of delivery points
 - Considered equivalent by customers
 - Example: two nearby ICA and COOP stores

Geographical segmentation

- "Aggregation"
 - Narrowly defined areas are often aggregated into a broader geographical market if competitive conditions are the same
 - Example: Cable-TV
 - Households want delivery in their house -- House next door is not a good substitute
 - Still, the whole neighborhood is considered a geographical market if
 - Households similar
 - Costs of supplying similar
 - Same firms compete for all households
 - Firms charge the same prices to all households

Other dimensions

- Some “microeconomic dimensions” less important in practice
 - **Time of delivery**
 - Seat on plane from Stockholm to Brussels at 7 p.m. may not be a good substitute for 7 a.m.
 - **Time of contracting**
 - Booking a flight a month before is not good substitute for booking on the day of departure
 - Different distribution of risk between buyer and seller
 - **State of nature**
 - Electricity on a cold day is different from electricity on a warm day
 - Electricity generators cannot store it between different times and different states

How Close Substitutes?

How Close Substitutes?

- Question
 - How close substitutes must two goods be in order to be on the same market?
- Intuitive idea
 - “A market is a collection of goods worth monopolizing”

How Close Substitutes?

- Somewhat more precisely
 - Define a candidate market = a collection of goods
 - Suppose monopolist owns all the goods on the market
 - If it is profitable for this hypothetical monopolist to increase price by 5-10% above competitive level, then the goods belong to the same market

SSNIP-test

SSNIP

- The procedure
 - SSNIP = small, significant non-transitory increase in price
 - Iterative procedure
 - Used for each of the four parts
 1. Demand substitution
 - a. Product market
 - b. Geographical market
 2. supply substitution
 - a. Product market
 - b. Geographical market

Demand substitution

- Basic idea
 - Customer switching = Main restriction on pricing
 - Volvo has little real influence over its price if its customers can easily switch to Saab
 - To define Volvo's market is to find the best substitute cars

Demand substitution

- Example 1: Product market
 - Let us define the “relevant product market” for Volvo V70
 - Do an *iterative* thought experiment

Demand substitution

- Step 1a: Define a candidate market
 - Start with V70 only as a candidate
 - If this is the relevant market, Volvo is a monopolist on this market
- Step 1b: Is a price increase profitable?
 - Volvo permanently increases price of V70 by small amount
 - How will customers react?
 - If sufficiently many people switch to other cars, the price increase is unprofitable
 - Then not profitable to monopolize V70
 - At least the closest substitute is in the same market
 - If most switchers go to Saab 9-5, then this is the closest substitute

Demand substitution

- Step 2a: Define new candidate market
 - V70 and SAAB 9-5 (*closest substitute* to V70)
 - If this is the relevant market: duopoly
- Step 2b: Is a price increase profitable?
 - Increase price of both V70 & 9-5
 - How will customers react?
 - If sufficiently many people switch to other cars, the price increase is unprofitable
 - Then not profitable to monopolize V70 & 9-5
 - At least the closest substitute (say VW Passat) is in the same market

Demand substitution

- Step 3a: Define new candidate market
 - V70 & 9-5 & Passat
 - If this is the relevant market: triopoly
- Step 3b: Is a price increase profitable?
 - Increase price of all
 - How will customers react?
 - If sufficiently many people switch to other cars, the price increase is unprofitable
 - Then profitable to monopolize V70 & 9-5 & Passat
 - This is the relevant market for V70

Demand substitution

- Example 2: Geographical market
 - Let us define the “relevant geographical market” for a ICA-store

Demand substitution

- Hypothetical street
- Two convenience stores at the ends
- People live in-between

ICA

COOP

- Q: Is COOP on the same market?

Demand substitution

– SSNIP-test

- If ICA permanently would increase price by 5%
- Would many consumers switch to coop?



- Answer depends on many factors
 - Similar products?
 - Distance
 - Consumers' traveling costs

Supply Substitution

Supply Substitution

- Example 1: Paper industry
 - Different kinds of paper
 - High quality: thick, white, glossy - used in art books
 - Low quality: - used in news papers
 - No consumer switching (i.e. no demand substitution)
 - Q: Same market?
 - Art book publishers need high quality paper – no demand substitution
 - But paper plants may easily switch between different qualities
 - Such switching restrict firms' pricing – both qualities on the same market

Supply Substitut

Old example:
Since a couple of years
Starbucks are trying to
enter Sweden

- Example 2: Geographical market for coffee houses
 - Swedish coffee house market – 3 Big
 - Espresso House, Wayne's Coffee, Coffeehouse by George
 - Q1: Should Starbucks be included in the Swedish market?
 - No - Difficult for consumers to fly to the US to buy a latte
 - Q2: Suppose 3 big contemplate a merger to create a monopoly and to increase price by 10% - would they be successful?
 - Not necessarily – then it may be easy for Starbucks to quickly open operations in Sweden
 - Thus, not profitable to monopolize the coffee houses in Sweden – There is no Swedish market – Sweden simply a segment of a broader geographical market

Supply Substitution

- Conclusion
 - Sometimes firms can quickly expand their operations from one segment to another
 - Then, an important restriction on pricing

Supply Substitution

- SSNIP-test
 - Same procedure as with demand substitution
 - Start with candidate: V70 & 9-5 & Passat
 - If price increase would trigger supply substitution, not a relevant market → enlarge

Supply Substitution

- Supply substitution or Entry?
 - European Commission does not consider supply substitution if it takes too long time (entry).
 - US Agencies do not consider supply substitution as part of market definition

Example

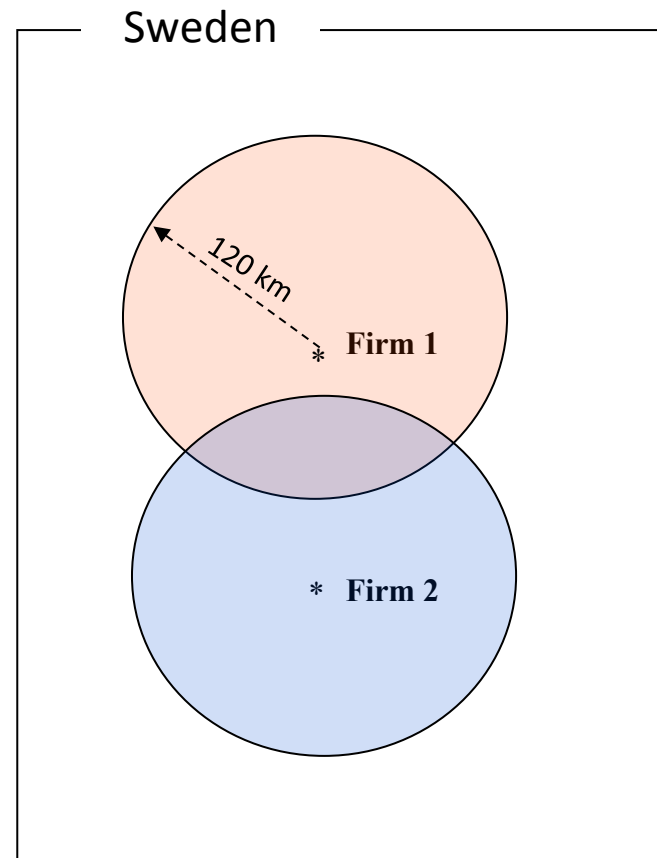
(Geographical market)

Example

- Recall: Geographical market
 - Set of delivery points
 - Considered equivalent by customers
 - Or due to supply substitution
 - SSNIP

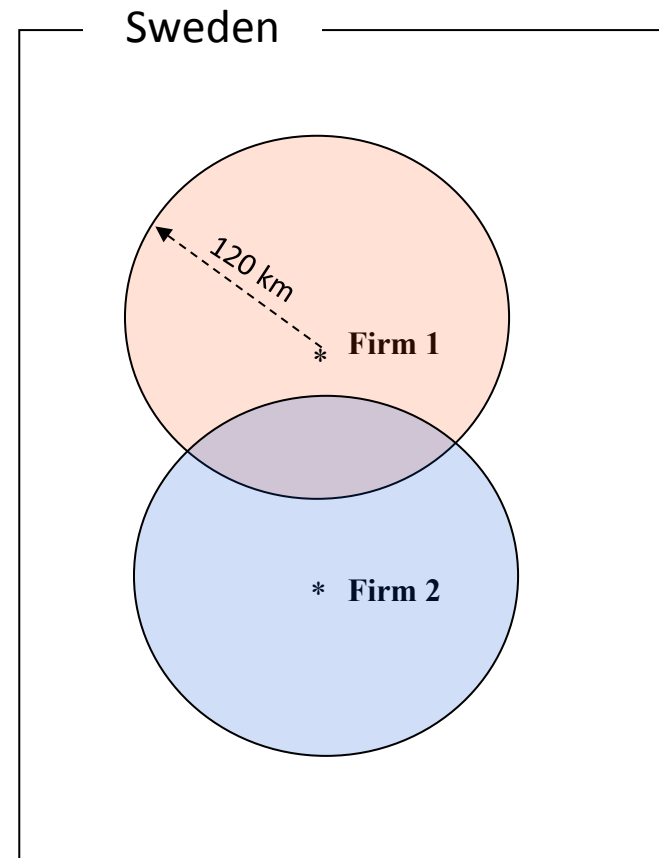
Example

- Example: Asphalt
 - Can only be transported approx. 120 kilometers
- Q: Are firms 1 and 2 on the same market?



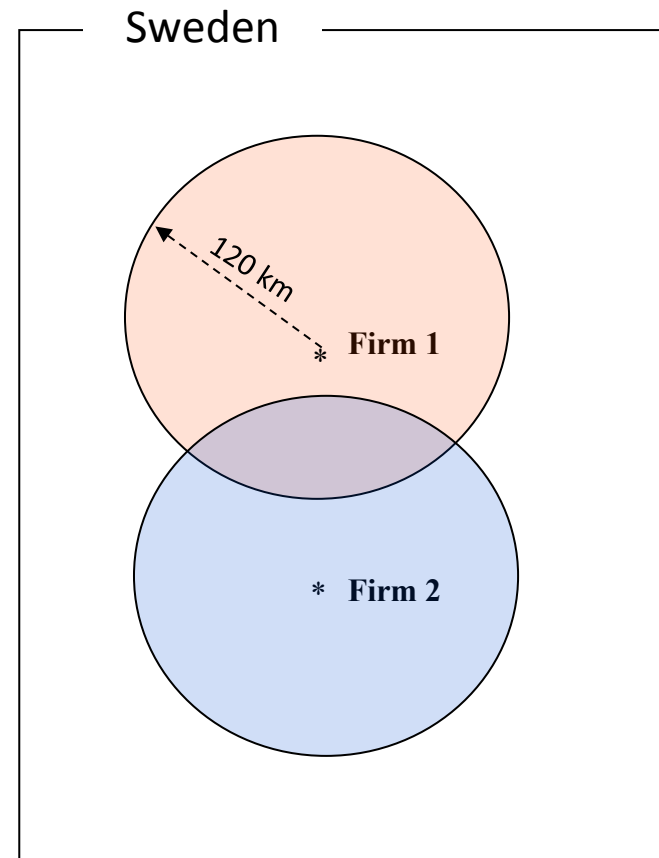
Example

- Distinguish 4 “goods”
 - Prod by 1, sold in red
 - Prod by 1, sold in brown
 - Prod by 2, sold in blue
 - Prod by 2, sold in brown



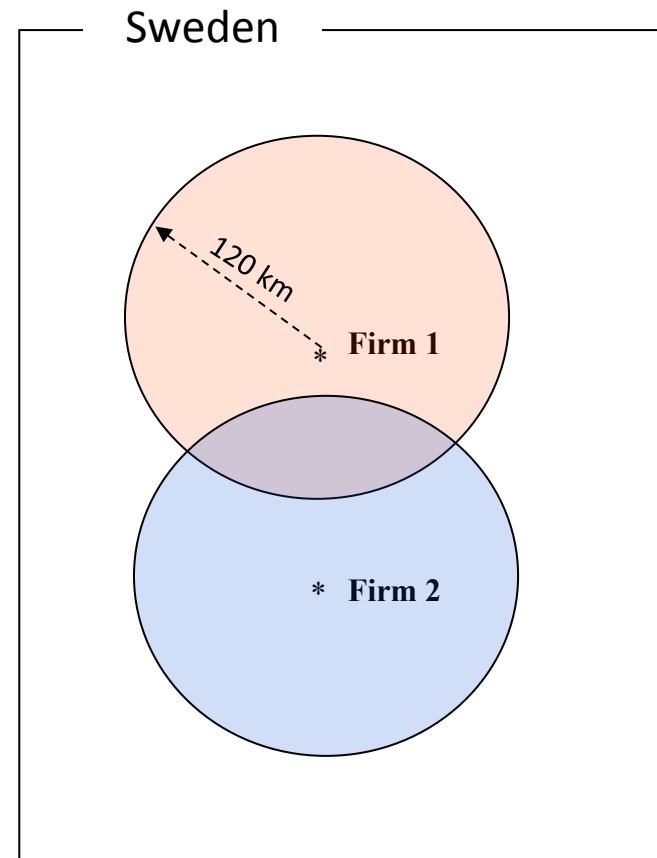
Example

- Q: which *individual goods* are worth monopolizing?



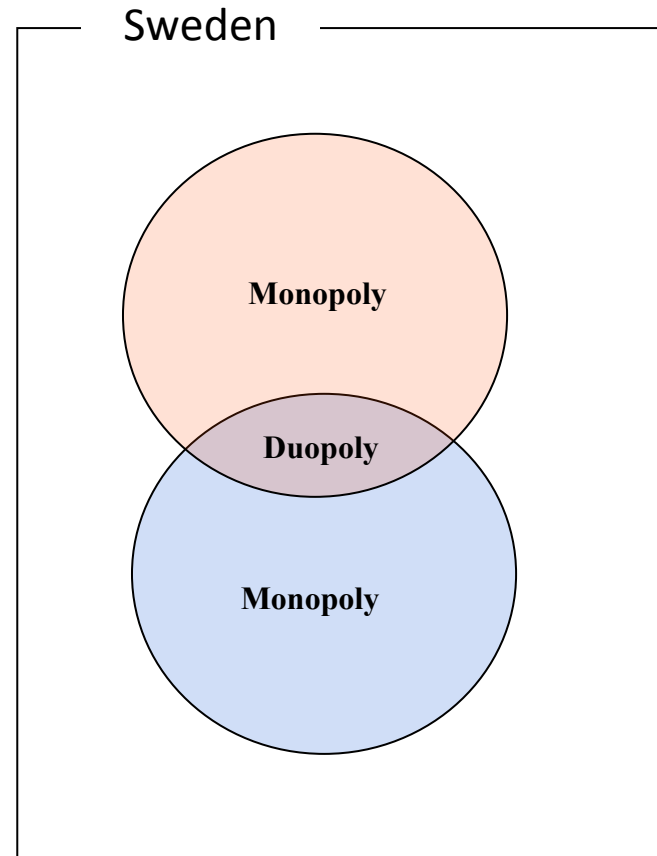
Example

- Q: which *individual goods* are worth monopolizing?
 - Red worth monopolizing = separate market
 - Blue worth monopolizing = separate market
 - Two brown = same market



Example

- Three different markets
 - May have consequences
 - Firms 1 and 2 may not be allowed to merge since that would reduce competition in the duopoly market



Evidence

Evidence

- Most often: Qualitative evidence
 - Product characteristics
 - How products are used

Evidence

- Q: Coke and Pepsi
 - Similar ingredients; similar taste
 - Used the same way
 - Probably same market

Evidence

- Q: Mineral water
 - Even more similar characteristics
 - But
 - Some brands charge much higher prices
 - Production cost should be similar
 - Indicates $P \gg C$ (\Leftrightarrow worth monopolizing)
 - Perhaps not same market!
 - Conclusion
 - Qualitative information can be misleading!
 - Also price comparisons can be used as evidence

Evidence

- Quantitative evidence
 - Q: Suggestions?
 - Econometric estimation of demand and cross-price elasticities
 - Price correlations
 - Past shipments between geographical areas

Applications

Application 1

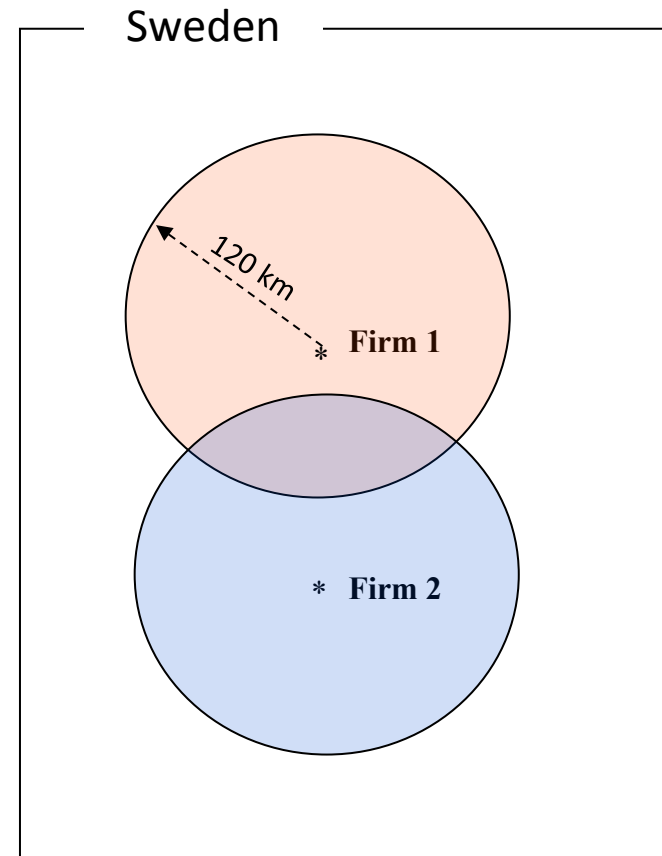
- Q: Are bananas a separate market from fruit in general?
 - Bananas and apples have different forms, colors and tastes
 - Some people don't have teeth and may have difficulties eating apples

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

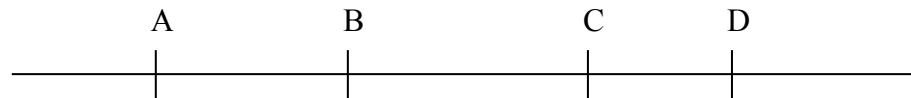
Application 1 b

- Recall Asphalt
 - Assume firms unable to set different prices to different consumers
- Q: Define relevant geographical markets
 - If sufficiently many people live in intersection (“large overlap”) compared to number of “captive consumers”
 - Then not profitable to increase prices above competitive level



Application 2

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

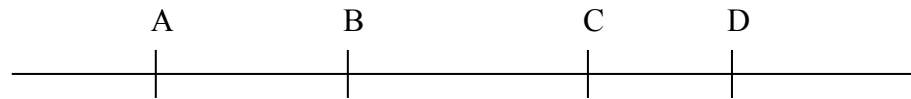


- Some choose between A and B, some between B and C, but no one between A and C
- Which stores are on A:s market?

Application 2

- Intuitively

- B is on the same market as A



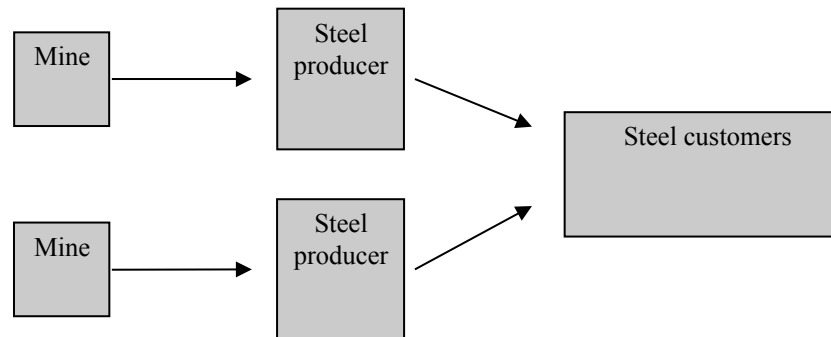
- But also C and D might put competitive pressure on A
- If C keeps low price, B has to keep low price, then A has to keep low price
- Indirect competition = chain of substitution

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

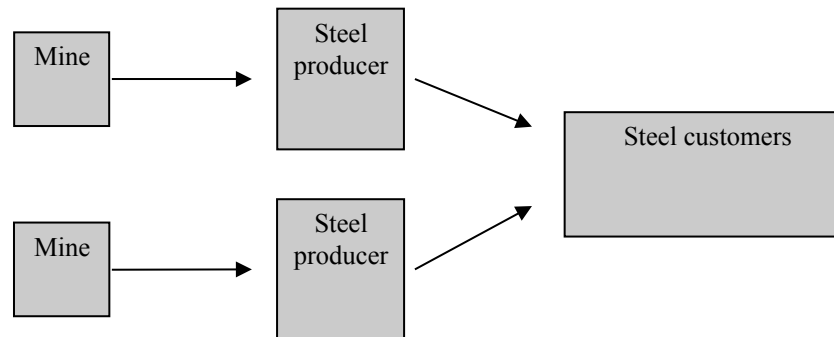
Application 3

- 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

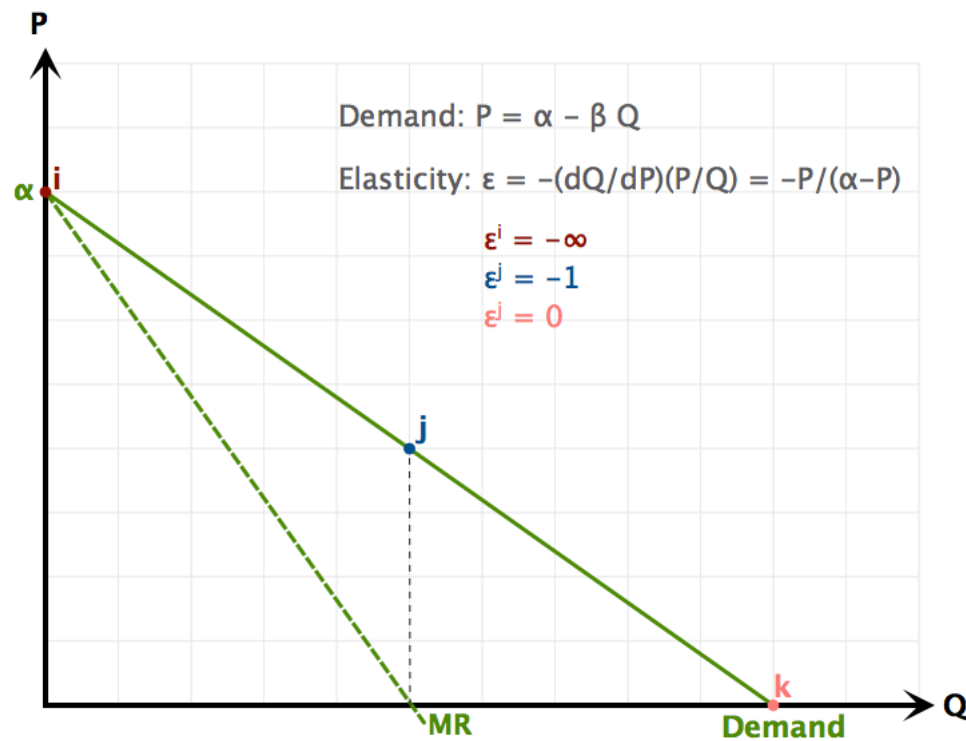
- Q: Is cellophane part of larger packaging market?
 - DuPont presented econometric evidence on price elasticities
 - DuPonts demand elastic
 - Thus: If it would increase price, customers would switch to e.g. aluminum foil

Application 5

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

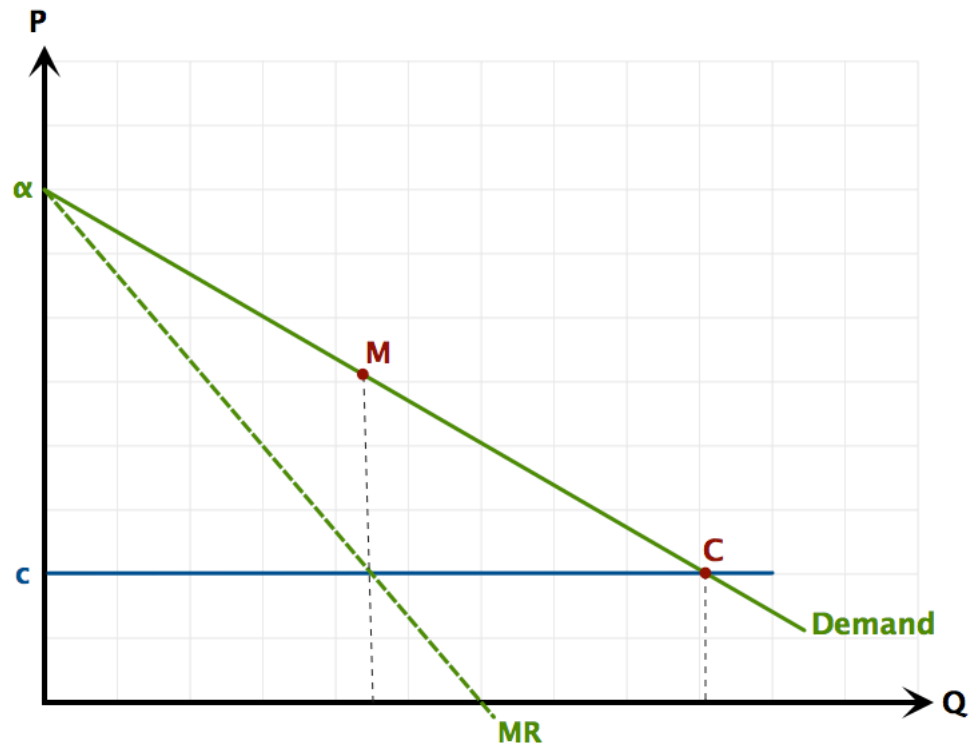
Application 5

- 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)

How are market definitions used?

How are market definitions used?

- Two areas
 - Competition policy
 - Sector regulation (e.g. telecom)
- Purpose
 - Protect competition
 - Hinder firms from exploiting market power
- Market definition
 - Horizontal mergers okay if relevant market does not become too concentrated
 - Regulatory responsibility only for firms with SMP (= large market share)

Quiz

Quiz

- European Commission prohibited Volvo from buying Scania
 - Commission: Volvo and Scania would become dominant on e.g. the Swedish and Finish markets
 - Volvo: We need to grow to be able to compete on the world market
 - Who was right?
 - How should geographical market be defined?