



Economics of Competition Analysis

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Competition Act, 2004

- Prohibitions
 - Sect 34: Agreements to prevent, reduce or distort competition
 - Sect 47: Abuse of a dominant position in the market
 - Sect 54: Merger that lessen competition



Outline

- Market definition
- Elasticity
- Market share vis-à-vis market power
- Countervailing efficiencies



Market definition

- Anti-competitive agreements less effective if parties have small market share (Sect 34)
 - Aggregate 20% threshold in same market
 - 25% threshold each across different markets
- Business with small share less likely to dominate the market (Sect 47)
 - 60% threshold
- Merger of two entities in separate markets less likely to affect competition (Sect 54).

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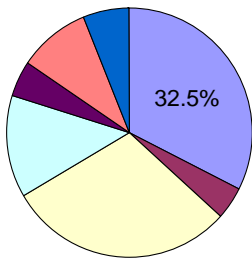
Market definition

- SPH newspapers are Singapore's leading provider of advertising.
 - What is SPH's market share?

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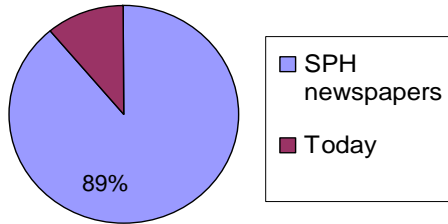
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Advertising, 2004



- SPH newspapers
- Today
- MediaCorp TV
- SPH MediaWorks
- Periodicals
- Radio
- Others

Newspaper Advertising, 2004





U.S. Dept of Justice Merger Guidelines, 1982

- "A market is defined as a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximizing firm ... that was the only present and future producer or seller of those products in that area likely would impose at least a 'small but significant and non-transitory' increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and a geographic area that is no bigger than necessary to satisfy this test."

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Extent of market

- What is effect of SSNIP (small but significant non-transitory increase in prices)?
- How much increase?
 - U.S. Dept of Justice – 5%
 - European Commission – 5-10%
 - Competition Commission of Singapore – 10%

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SSNIP test: Iteration

- ❑ Start with the narrowest candidate market:
 - Market for newspaper advertising?
 - Consider objective and subject attributes
 - How good (close) are actual/potential substitutes?
- ❑ Could hypothetical monopolist profitably raise price by 10%?
 - If yes, stop – you've identified the market boundaries;
 - If no, broaden market – include close substitutes on demand and supply side.
- ❑ Continue broadening until get "yes".

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SSNIP test: Rationale

- ❑ If hypothetical monopolist cannot sustain SSNIP,
 - There are close substitutes on either demand or supply side.
 - These constrain the hypothetical monopolist.
 - Hence these products must belong to same economic (product/geographical/time) market.
- ❑ Actually, SSNIP test is subject to false negative:
 - Might be that hypothetical monopolist cannot sustain SSNIP because buyers drop out rather than switch to substitutes.

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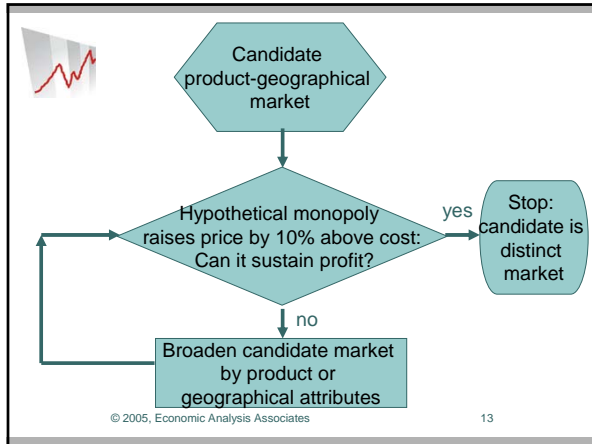


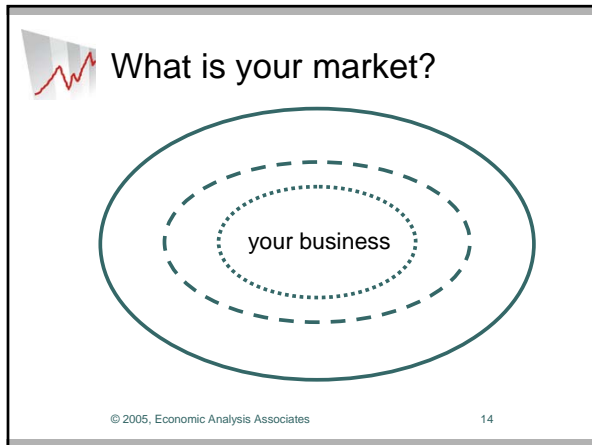
SSNIP test: Operation

- ❑ Starting point of SSNIP
 - price equal to cost
- ❑ Do not start from prevailing price
 - Could fall into *Cellophane fallacy* (Dupont)

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- Reference: I. Png, *Managerial Economics*, Chapter 3, pp. 63-71.
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Effect of SSNIP

- Buyer side: mathematically measured by (own) price elasticity.
 - Buyers switch to other products
 - Buyers stop consuming/using



(Own) price elasticity

- Definition: percentage change in quantity demanded resulting from 1% increase in price of the item.
- Alternatively,

$$\frac{\%_change_in_quantity_demanded}{\%_change_in_price}$$

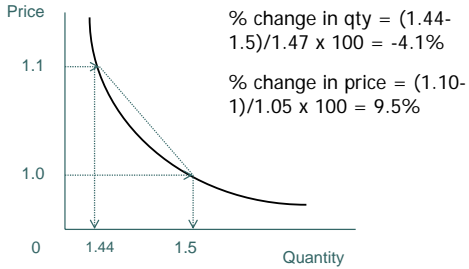


(Own) price elasticity

- Elasticity is *ratio* – independent of units of measure.
 - Negative number, because higher price leads to reduction in quantity demanded.
 - However, often expressed in absolute value (without negative sign).
 - Ranges of elasticity
 - Elastic demand: price elasticity < -1
 - Inelastic demand: price elasticity > -1



(Own) price elasticity: Calculation

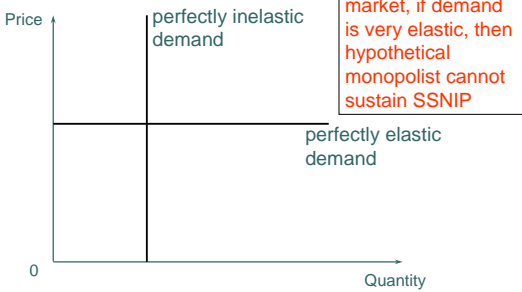


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(Own) price elasticity: Demand curves



Within candidate market, if demand is very elastic, then hypothetical monopolist cannot sustain SSNIP

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(Own) price elasticity – Measurement

- Econometric methods
 - Residual demand
 - Multinomial logit discrete-choice model
- Sales
 - Units
 - Values – accounts for price differences.

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(Own) price elasticity

- Measurement – limited data
- Alternative – intuitive guesstimate



(Own) price elasticity: Intuitive factors

- Availability of substitutes
 - direct
 - indirect (functional)
 - newspaper / internet
 - beer / stout
 - electricity / gas
- Cost / benefit of economizing – buyer's "involvement".



(Own) price elasticity: Intuitive factors

- Buyer's prior commitments
 - learning
 - complementary purchases – service, spare parts, customization
 - taste
- Separation of buyer and payee



Example – Newspaper advertising

- If SPH raises price of advertising by 10%,
 - By how much will advertisers switch to other newspaper?
 - By how much will they reduce advertising?



Example – Concrete

- If one producer raises price of concrete by 10%,
 - By how much will builders switch to other brands?
 - By how much will builders reduce concrete consumption?



What is your elasticity of demand?

| price | % chg in price | % chg in sales volume | elasticity |
|-------|----------------|-----------------------|------------|
| | +20% | | |
| | +15% | | |
| | +10% | | |
| | +5% | | |
| cost | 0% | | |



Effect of SSNIP

- ❑ Buyer side: mathematically measured by (own) price elasticity.
- ❑ Can analyze (own) price elasticity into:
 - Buyers switch to other products (which might be part of same market)
 - Cross elasticity – more precise measure of SSNIP.
 - Buyers stop consuming/using.



Cross elasticity of demand

- ❑ Definition: percentage change in quantity demanded of one item resulting from 1% increase in price of another item.
- ❑ Alternatively,

$$\frac{\% \text{ change in quantity demanded of } X}{\% \text{ change in price of } Y}$$



Cross elasticity of demand

- ❑ Elasticity is ratio – independent of units of measure.
 - Positive if the two items are substitutes
 - Negative if they are complements
- ❑ The closer two items are substitutes, the higher their cross-price elasticity will be.



Cross elasticity of demand

- Consider your own business –
 - What are substitutes/complements?
 - What are cross-elasticities?



Cross elasticity of demand : Queensland Wire

- “in the determination of a 'market' for particular purposes, regard shall be had to substitute products, being products which have a reasonable interchangeability of use and which have high cross-elasticity of demand, ie where a small decrease in the price of a particular product would cause a significant quantum of demand for a similar product to switch to the product in question” Mason CJ and Wilson J (1989) Australia.



Market adjustment

- Buyer-side adjustment – substitution;
- Seller-side adjustment – entry/exit.
 - “the definition of the relevant market requires a consideration of substitutability both on the demand and on the supply side” Mason CJ and Wilson J (1989) Australia.



Supply cross-elasticity

- Definition: percentage change in quantity supplied of one item resulting from 1% increase in price of another item.
- Alternatively,

$$\frac{\% \text{ change in quantity supplied of } X}{\% \text{ change in price of } Y}$$



Supply cross-elasticity

- Do not consider new entry into market in gauging supply-side substitution.
 - New entry will take too long to affect the hypothetical monopolist – price increase must be profitable over extended period.
- Consider effects of entry at market analysis stage.



Elasticities – Measurement

- Sales
 - Units
 - Values – accounts for price differences.
- Capacity
- Potential capacity – including potential entrants.



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- Reference: I. Png,
Managerial Economics,
Chapter 8, pp. 267-278.



Glaxo: Life-and-death monopoly

- “Once its products were approved, a big drug firm such as Glaxo could sell them at almost whatever price it wanted”
(Economist, Jan. 28, 1995)

- *True or false?*



Market power

- Ability to substantially influence price or other condition of sale or purchase.
 - Demand must be price inelastic
 - (Own) price elasticity measures market power.

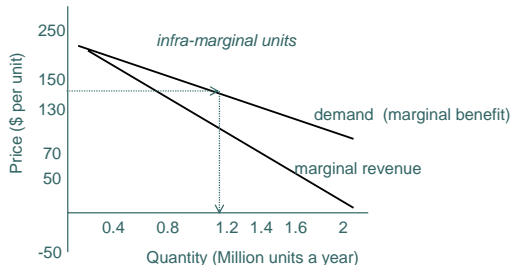


Market power

- Contrast with market share
 - High market share *may be correlated* with high market power
 - PC operating systems
 - gambling
 - armed security transport services
 - advertising
 - electricity
 - TV broadcasting



Operating scale: Marginal revenue and price



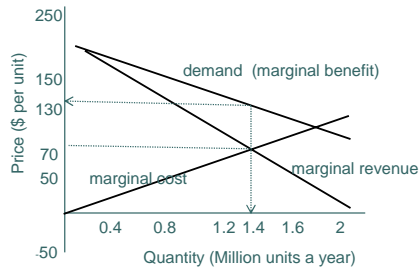


Operating scale: Profit maximum

- To maximize profit, operate at scale where marginal revenue = marginal cost.
- Justification:
 - If marginal revenue > marginal cost, sell more and increase profit
 - If marginal revenue < marginal cost, sell less and increase profit



Operating scale: Profit maximum



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“Cellophane fallacy”

- Seller with market power maximizes profit by setting price such that demand is *elastic*.
- If demand is *inelastic*, price increase leads to
 - Proportionately smaller reduction in purchases
 - On balance, *higher* expenditure = higher revenue
 - Since costs lower, result is *higher* profit

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“Cellophane fallacy”

- Observation: demand could be *elastic* because seller is
 - a monopoly in the relevant market, *and*
 - maximizing profit.

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 - Reference: I. Png, *Managerial Economics*, Chapter 7, pp. 229-255.



Countervailing efficiencies

- Economies of scale – fixed cost
 - Buyer side
 - Saving on purchasing
 - Joint R&D



Countervailing efficiencies

- Economies of scale – fixed cost
 - Seller side
 - Saving on common overhead, eg, merger of Value Air with Jetstar Asia.
 - “Market is too small”, eg, MediaCorp acquisition of SPH TV.



Countervailing efficiencies

- Economies of scope – joint cost
 - Buyer side
 - Seller side
 - Cable network, eg, Starhub – telephone and cable TV service





MAS-SIA revenue pool

- Since 1988, two airlines operated a revenue pool on Singapore-KL route.
 - SIA shares 50% of all net revenue with MAS but bears all operating costs.
 - How to justify economically?



References

- Massimo Motta, *Competition Policy: Theory and Practice*, Cambridge Univ Press, 2004.
- Ivan Png, *Managerial Economics – Asia-Pacific Edition*, Pearson Asia, 2005.
- <http://www.econaa.com/resources.htm>
