04-1: Market definition

U.C. Berkeley, Boalt Hall School of Law, Silicon Valley Antitrust, Fall 2013

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Product market: hM + SSNIP

Not profitable Not a market	Not profitable Not a market	Not profitable Not a market	Profitable = Market

10% price increase
30% drop in quantity

P1

Step 1: The hypothetical monopolist (HM) raises prices by 10% and loses 30% of its customers. The price increase is not profitable. (Price elasticity of demand = 3). P1 is not a relevant product market.

10% price increase
20% drop in quantity

P1
P2

Step 2: We add another product, P2. The HM increases price for P1 and P2. Still not profitable.

10% price increase
15% drop in quantity

P1
P2
P3

Step 3: Yet another product, P3. The HM increases price for P1, P2, and P3. Still not profitable.

10% price increase
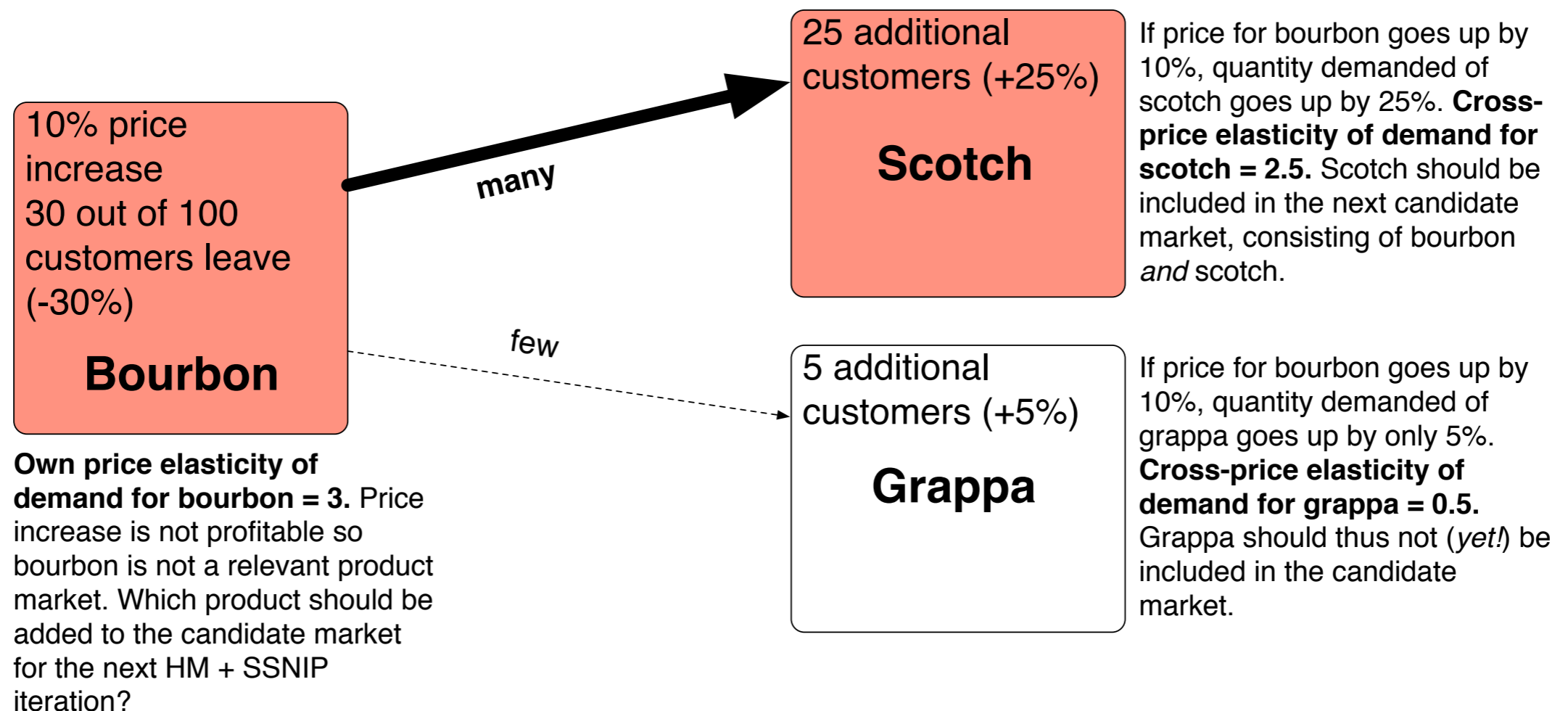8% drop in quantity

P1
P2
P3
P4

Step 4: Finally, after adding P4, a price increase over P1, P2, P3, and P4 would be profitable. (Price elasticity of demand = 0.8). The relevant product market consists of P1, P2, P3, and P4.

Note that the focus on revenues is only the first step. The question of profitability also depends on costs. A complete analysis would have to calculate the *critical loss*.

How do we know which products to add?

- The hypothetical monopolist (hM) + SSNIP test identifies relevant markets using the own price elasticity of demand for the hM's products (P1, P2, P3, P4)

  - The own price elasticity tells us that if prices go up by p% then q% of the customers go elsewhere. It doesn't tell us where they are going. That's where cross-elasticity of demand comes in.

- Cross elasticity helps us identify products to add to the candidate markets (P2, P3, P4)

  - E.g., high cross-elasticity suggests adding tangerine juice (P2) but not milk to orange juice (P1)

Using own and cross price elasticity of demand

Bourbon
10% price increase
30 out of 100 customers leave (-30%)

Own price elasticity of demand for bourbon = 3. Price increase is not profitable so bourbon is not a relevant product market. Which product should be added to the candidate market for the next HM + SSNIP iteration?

many

Scotch
25 additional customers (+25%)

If price for bourbon goes up by 10%, quantity demanded of scotch goes up by 25%. **Cross-price elasticity of demand for scotch = 2.5.** Scotch should be included in the next candidate market, consisting of bourbon *and* scotch.

few

Grappa
5 additional customers (+5%)

If price for bourbon goes up by 10%, quantity demanded of grappa goes up by only 5%. **Cross-price elasticity of demand for grappa = 0.5.** Grappa should thus not (*yet!*) be included in the candidate market.
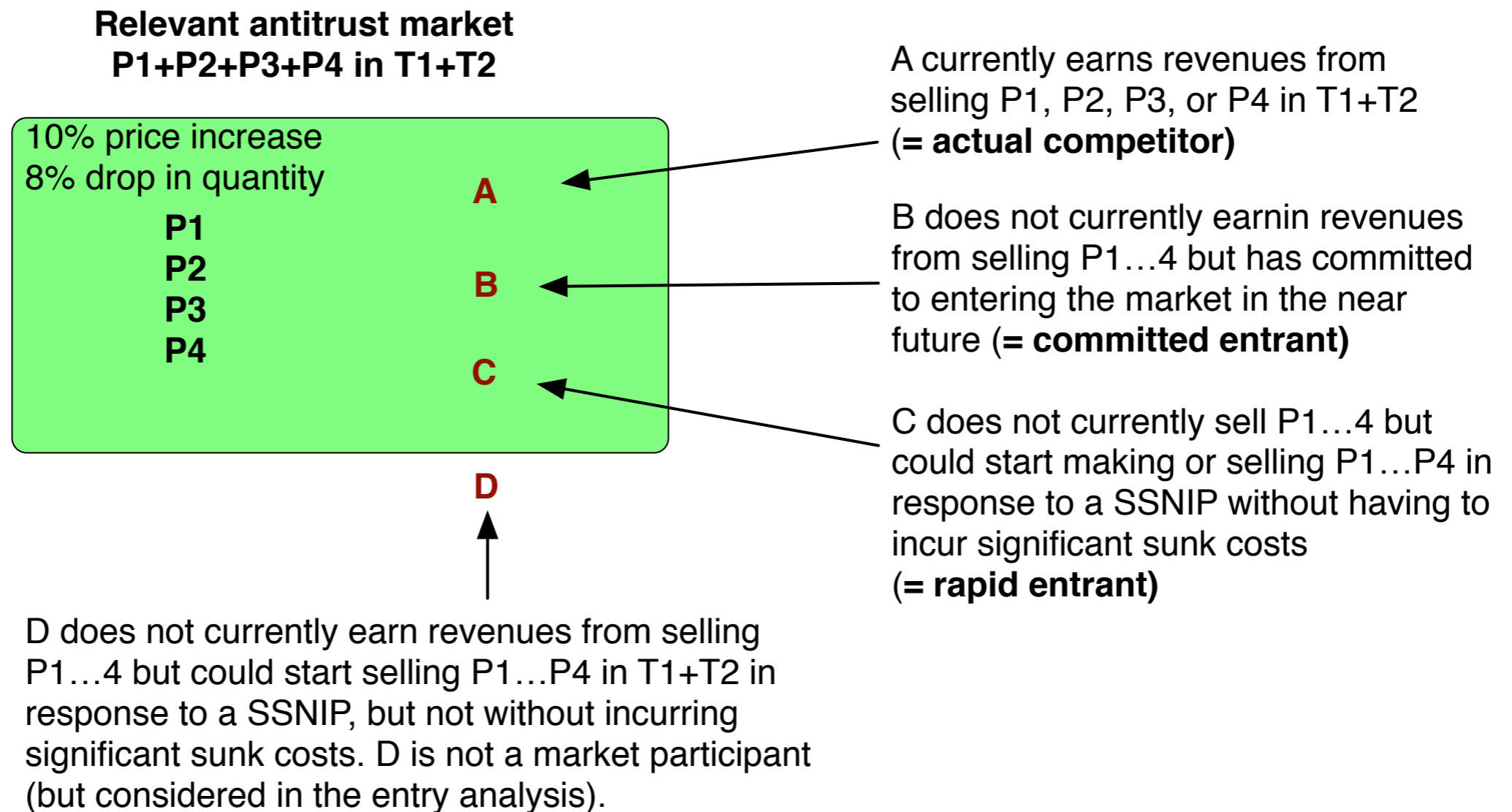
Note: The 30 customers = 30%, 25 customers = 25%, etc. numbers are for illustration only. What counts are the %, not the absolute numbers. Similarly, what's significant is the decrease in *quantity demanded*. Losing "customers" is just a commonly used shorthand for a drop in quantity demanded.
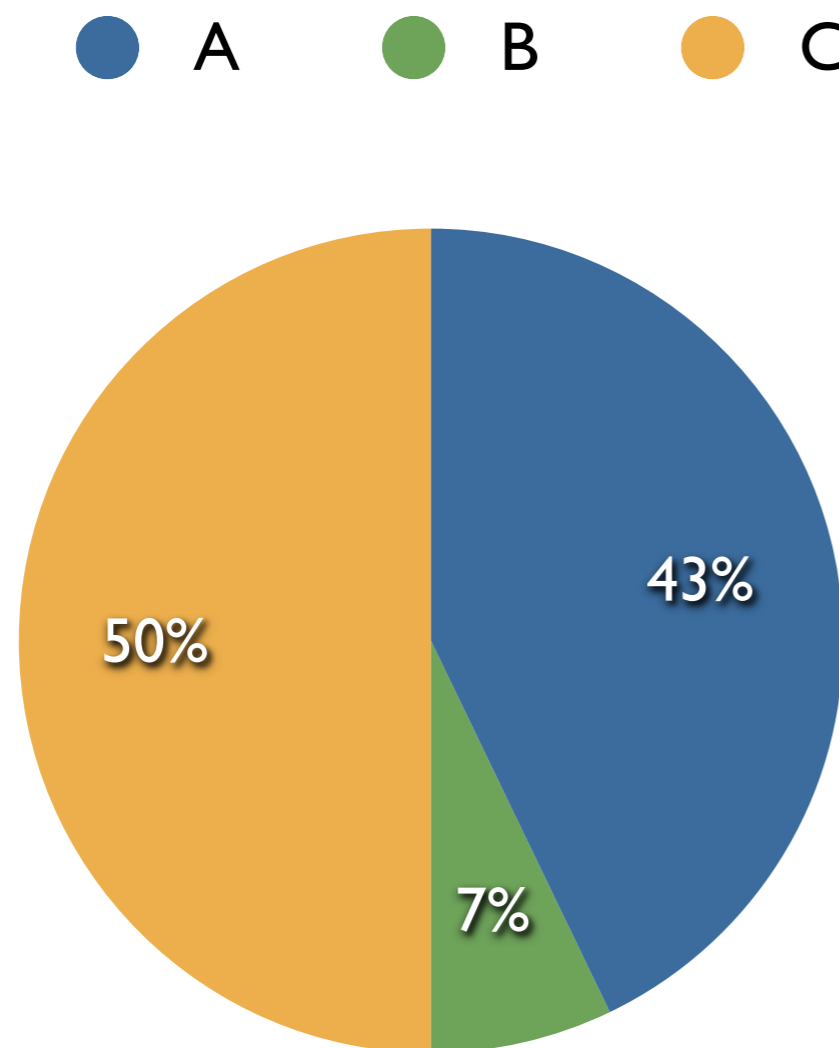
Geographic market definition: Same test

- Take the set of relevant products (P1, P2, P3, P4)
- Start with the smallest reasonable candidate territory (T1). Would a SSNIP by the hM for P1, P2, P3, and P4 in T1 be profitable?
  - Depends on how many customers who are presently purchasing from within T1 would switch to sources located outside of T1 (own price elasticity of demand)
- If not, expand the territory (T1, T2...Tn) and repeat, until the price increase would be profitable
  - Identify candidates for T2...Tn based on cross price elasticity of demand (if prices in T1 go up, demand in T2 increases)

Identify the market participants on the basis of the products the market

Relevant antitrust market
P1+P2+P3+P4 in T1+T2

10% price increase
8% drop in quantity

P1
P2
P3
P4

A

B

C

D

A currently earns revenues from selling P1, P2, P3, or P4 in T1+T2 (**= actual competitor**)

B does not currently earnin revenues from selling P1…4 but has committed to entering the market in the near future (**= committed entrant**)

C does not currently sell P1…4 but could start making or selling P1…P4 in response to a SSNIP without having to incur significant sunk costs (**= rapid entrant**)

D does not currently earn revenues from selling P1…4 but could start selling P1…P4 in T1+T2 in response to a SSNIP, but not without incurring significant sunk costs. D is not a market participant (but considered in the entry analysis).

Assign market shares

Legend: A (blue), B (green), C (orange)

Pie chart: 43% (A), 7% (B), 50% (C)

- A makes P1 ($100,000) and P2 ($50,000)

- B will make P3 ($25,000)

- C could easily make P2 ($75,000) and P4 ($100,000) in the event of a SSNIP

- D could make P3 ($125,000) in the event of a SSNIP

- Market size = $350,000
  - $100,000 + $50,000 + $25,000 + $75,000 + $100,000
  - Not D's $125,000, because D is not a market participant

Beware of the Cellophane fallacy

- Δ's argue: "Because P5 is a good substitute for P1 it should be in the relevant market."

  - The mere fact that demand for P5 goes up by 20% in response to a 10% price increase of P1 (= high cross elasticity of demand) doesn't imply that P5 is a good substitute for P1 at the competitive price. It only tells us that at the prevailing price P5 is a good substitute for P1.

  - The prevailing price, however, may well be the monopoly price!

- The Cellophane fallacy is less of a problem in *ex ante* merger analysis, because of its focus on incremental market power gains from the proposed merger

- The Cellophane fallacy, however, can be a serious challenge in monopolization cases