Price-cost tests and loyalty discounts

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EAGCP Plenary meeting
March 6th, 2018

Antitrust tests

- Generally speaking antitrust tests are subject tot two types of errors
  - Measurement errors: e.g. in predation cases it may be difficult to measure costs
  - Theory errors: e.g. predation may not require prices below costs, and prices below cost may not involve predatory intent
- Hence, bothe folse positive and false negative are generally possible
- Good tests are those for which errors are limited

Contribution of the paper

- Price cost tests for loyalty discounts have been criticized mainly on the ground of measurement errors that they involve
- In this paper we focus on «Theory errors»
- We use a reasonable model of loyalty discounts where these practices may be either pro or anti competitive
- Abstracting from measurement issues, we demonstrate that price cost test generate too many false positive and false negative

Loyalty discounts

- Probably, one of the most controversial area of competition policy today
- *Loyalty discounts* is a broad antitrust category that includes different practices
  - Some forms of *volume discounts*
    - namely, personalized discounts and retroactive (or all-units) discounts
  - *Bundled discounts*
  - *Market-share discounts*
  - *Exclusivity discounts*
- In this talk we focus on market-share and exclusivity discounts
- These are conditional pricing strategies where a firm's price depends on rivals' volumes

Policy debate

- Broadly speaking, two different schools of thought in the policy debate
  - One likens loyalty discounts to *predatory pricing*
    - profit sacrifice/recoupment logic
  - The other likens loyalty discounts to *exclusive dealing* arrangements
    - Prior to the ECJ decision on the *Intel* case, near per se illegality
- What approach after the *Intel* decision?

Intel case

- The Commission adopted a price-cost test
- The ECJ says that the court of appeal must reconsider whether the test was applied properly
- The price-cost test follows the profit sacrifice/recoupment logic
- However, that logic does not seem to fit well the *Intel* case where
  - Contracts could be terminated at will
  - The share of the market foreclosed was relatively small
  - There never was a real risk that Intel's competitor might exit the market

Alternative approach

- Loyalty discounts can be profitable directly, by increasing the demand for the dominant firm's product
- Our previous work shows that this mechanism works whenever marginal prices are distorted upwards
  - Calzolari & Denicolò (AER 2013,2015); Calzolari Denicolò and Zanchettin (CEPR DP 2016)
  - Marginal prices are optimally distorted when it is costly to extract the buyer's rent by means of fixed fees
  - This may be so for various reasons
    - Adverse selection
    - Moral hazard (the buyer is risk averse)
    - Competition among buyers
    - Behavioural effects

Alternative approach

- The alternative approach better fits the *Intel* case
  - The main conclusion is that loyalty discounts are anticompetitive when the dominant firm's competitive advantage is large, procompetitive when it is small
  - Taking the market share as a proxy for the competitive advantage, Intel's discounts are likely to be anticompetitive
  - Simple and robust Theory of harm
- Can the same conclusion be obtained by means of a price-cost test?

Model

- Two differentiated goods A and B
- Firm A produces good A and firm B good B and simultaneously compete
- A (single) buyer/retailer obtains a (gross) profit $V(q_A, q_B)$
- Competitive advantage of firm A:
  - more efficient in production: marginal cost of A is $c_A = 0$, that of B $c_B \geq 0$
  - better quality: buyer's payoff is $V(q_A, q_B) - c_B\, q_B$
  - firm B has limited ability to serve the buyer, up to $q_B \leq k$
    - Demand for B vanishes when $q_B > k$, or B is capacity constrained

Pricing

- Firms compete in two-part tariffs

$$P_i = p_i\, q_i + F_i$$

  - Fixed fees involve costs and thus marginal prices p_i are optimally distorted upwards

- Market share discounts: dominant firm charges two different prices
  - p_A^E if $\frac{q_A}{q_A+q_B} \geq s$
  - p_A^H if $\frac{q_A}{q_A+q_B} < s$
  - s=1 is the limiting case of exclusivity discounts

- For the presentation we discuss the limiting cases linear pricing and exclusivity discounts

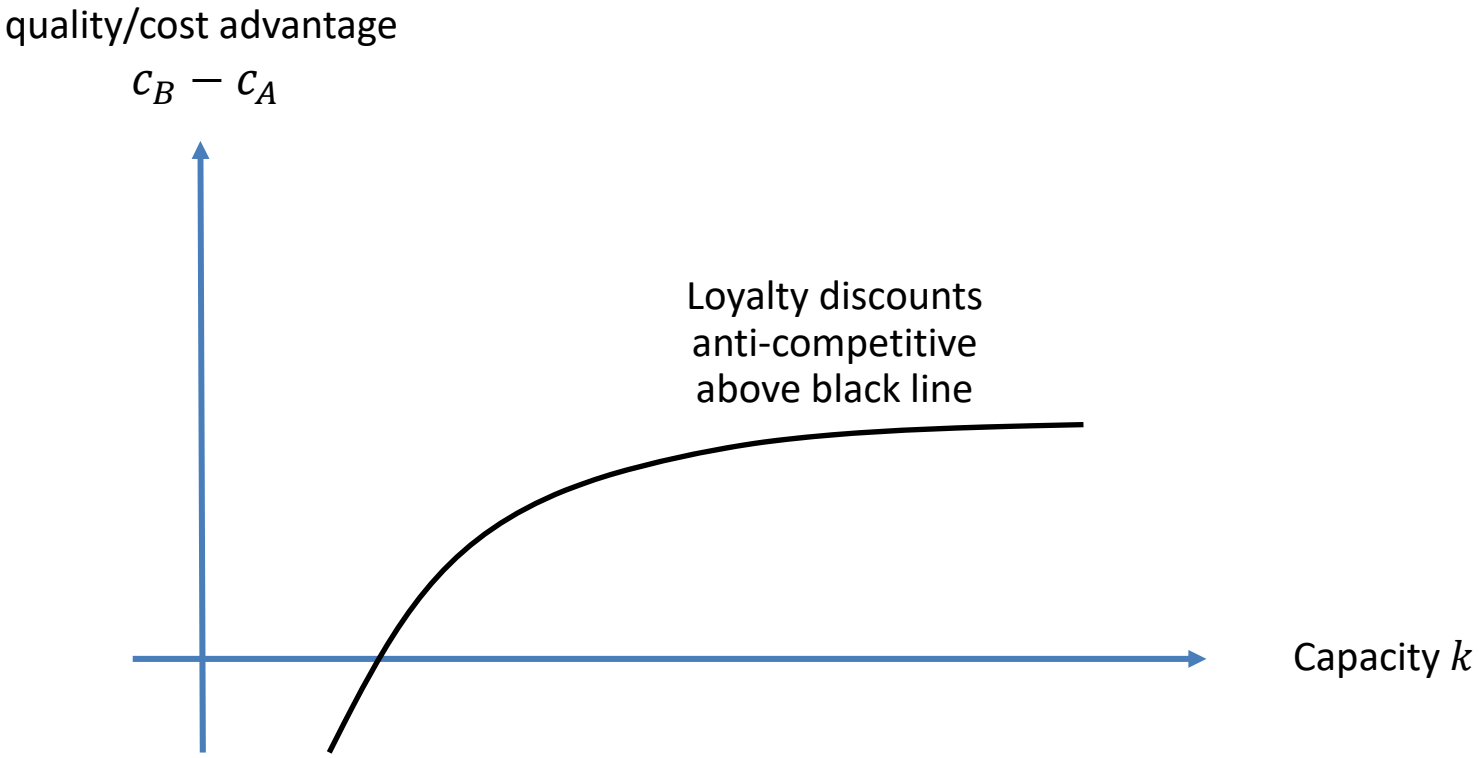
Equilbrium

- In equilibrium exclusivity discounts are always used
- The weaker firm prices at cost and the dominant undercuts the rival
- This implies that p_A^E is determined by the condition

$$max_{q_A} \left\{ v(q_A, 0) \; - q_A p_A^E \; \right\} = max_{q_{B \leq k}} \left\{ v(0, q_B) \; - q_B \; c_B \right\}$$

- Note: r.h.s decreases as c_B increases and k decreases
- Hence, p_A^E increases with strong competitive advantage (decreases with weak advantage)

Effects of loyalty discounts



- k is an inverse measure of the competitive advantage, the smaller is k the stronger is the competitive advantage

The *As-Efficient-Competitor* test

- The AEC test:
- *Would an as-efficient-competitor be able to capture some of the dominant firm's sales without incurring in losses?*
  - If yes, the test is passed, if no the test is failed
- In applying the test, it may be taken into account that the AEC may divert only part of the sales (the «contestable share» of the market)
  - In practice, assessing the contestable share raise a number of problems
- In our model, contestable sales are k

The *As-Efficient-Competitor* test

- The test is passed if

$$q_A^E \; p_A^E \geq k \; c_A + \left(q_A^E - k\right) p_A^H$$

  - q_A^E is the dominant firm's output with the exclusivity discount
  - p_A^E is the discounted price
  - p_A^H is the price that the dominant firm would charge if the buyer buys from rival
  - k is the contestable volume

- A decrease in k raises likelihood that discounts are anti competitive and the test more difficult to pass: this goes in the right direction
- But there also indirect effects, vie as k and $c_B - c_A$ affect the endogenous variables in the test: problem!

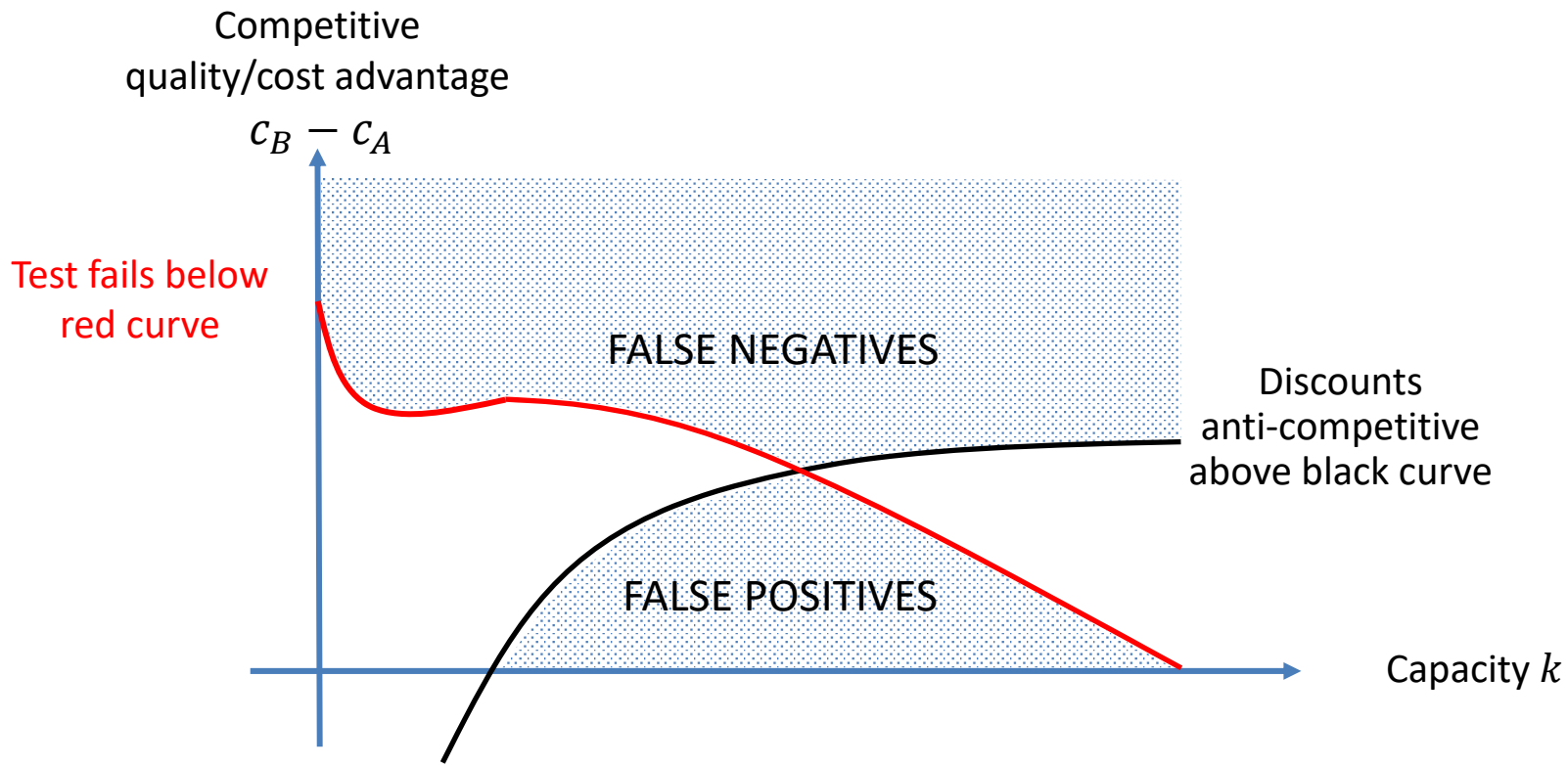
AEC test: implementation

- Equivalently, the test requires a comparison between the *Contestable Share* and the *Required Share*

$$S_C = \frac{k}{q_A^E} \quad \geq \quad \frac{p_A^H - p_A^E}{p_A^H - c_A} = S_R$$

- Not only the contestable share, but also the high (undiscounted price p_A^H) may also be difficult to observe
- We set p_A^H at its lower bound, assuming the dominant firm prices to minimize the risk of antitrust intervention

AEC test: Type I and type II errors



AEC test is uninformative

- Many type I or type II errors
- AEC test is as informative as tossing a coin
- The flaw in the test is that it looks for low prices, while loyalty discounts are anticompetitive when they lead to high prices

Global and local "as efficiency"

- AEC cannot be really as efficient in all relevant respects
  - If it were, it could never be foreclosed
- The AEC logic makes sense only if one distinguishes between the ability to compete for marginal units (*local* as efficiency) and the ability to compete for the entire market (*global* as efficiency)
- This is captured by our parameter k

Global and Local "as efficiency"

- However, the same distinction may be captured even when k is so large that the constraint is never binding
- Firms A and B are locally as efficient at $\bar{q}_A, \bar{q}_B$ if

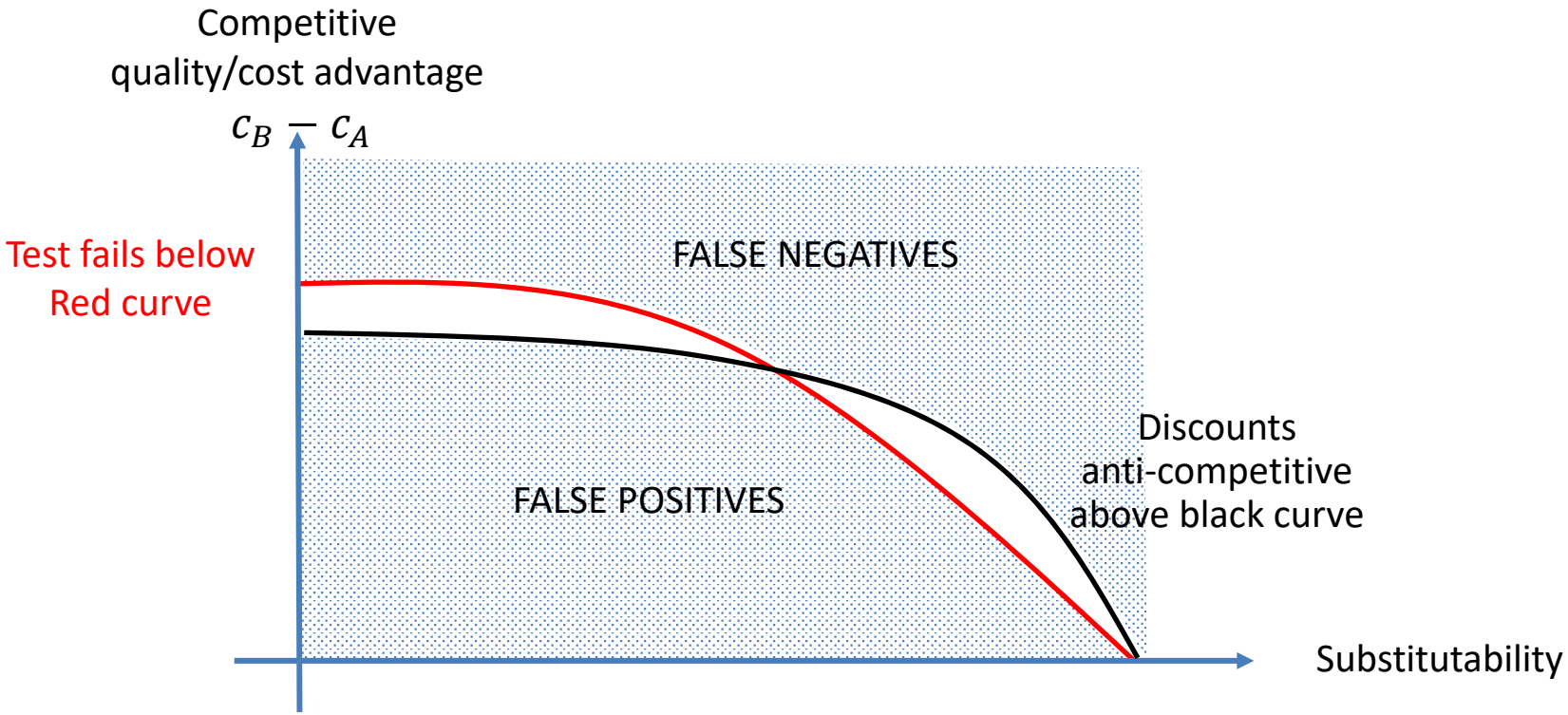
$$\frac{\partial v(\bar{q}_A, \bar{q}_B)}{\partial q_A} - c_A = \frac{\partial v(\bar{q}_A, \bar{q}_B)}{\partial q_B} - c_B$$

- Firms A and B are *globally* as efficient if

$$max_{q_A} \{v(q_A, 0) - q_A c_A\} = max_{q_B \leq k} \{v(0, q_B) - q_B c_B\}$$

- We have re-runned the test using this local notion of as efficiency (and abstracting from the constraint $q_B \leq k$)

The AEC test with local “as efficiency”



Conclusion

- AEC test is at best uninformative, at worst completely misleading
- Of course, the conclusion holds when loyalty discounts are directly profitable
- Profit sacrifice/recoupment logic may apply when loyalty discounts are not directly profitable

Suggested approach

1. Did the defendant use loyalty discounts?
   - Proof not necessarily obvious as contracts are often informal
2. Analysis of dominance
   - Strong dominance
     - presumptively illegal
   - Weak dominance
     - theory of recoupment is needed
     - price-cost test may be informative
       - yet, price-cost tests may be problematic for other reasons
3. Efficiency defenses