Price-cost tests and loyalty discounts

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Antitrust tests

• Generally speaking antitrust tests are subject to 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, both a false positive and a 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?
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

- \( p^E_A \) if \( \frac{q_A}{q_A + q_B} \geq s \)

- \( p^H_A \) 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
Equilibrium

• In equilibrium exclusivity discounts are always used
• The weaker firm prices at cost and the dominant undercuts the rival
• This implies that \( p^E_A \) is determined by the condition
  \[
  \max_{q_A} \left\{ v(q_A, 0) - q_A p^E_A \right\} = \max_{q_B \leq k} \left\{ v(0, q_B) - q_B c_B \right\}
  \]
• Note: r.h.s decreases as \( c_B \) increases and \( k \) decreases
• Hence, \( p^E_A \) 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.

quality/cost advantage

$c_B - c_A$

Capacity $k$

Loyalty discounts anti-competitive above black line
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
  \[ q_A^E p_A^E \geq k c_A + (q_A^E - k) p_A^H \]
  - \( q_A^E \) 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:

\[ S_C = \frac{k}{q^E_A} \geq \frac{p^H_A - p^E_A}{p^H_A - c_A} = S_R \]

• Not only the contestable share, but also the high (undiscounted price \( p^H_A \)) may also be difficult to observe.

• We set \( p^H_A \) at its lower bound, assuming the dominant firm prices to minimize the risk of antitrust intervention.
AEC test: Type I and type II errors

Competitive quality/cost advantage

Test fails below red curve

FALSE NEGATIVES

Discounts anti-competitive above black curve

FALSE POSITIVES

Capacity $k$

$C_B - C_A$
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-run 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”

Competitive
quality/cost advantage

Test fails below
Red curve

FALSE POSITIVES

FALSE NEGATIVES

Discounts
anti-competitive
above black curve

Substitutability

$C_B = C_A$
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