Predatory pricing

Cédric Argenton

Tilburg University

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Predation

- A running theme in competition policy is the difficulty to distinguish "good" from "bad" practices
- A given agreement or conduct can be pro-competitive in some circumstances and anti-competitive in some others
- Risk of adjudication error
- Especially true in the case of predatory pricing = the maintenance of prices which are so low that preys exit the market, leaving the predator with market power post-exit
- Now, in principle we like low prices!
- So, predation is, in some sense, "too much of a good thing"
- Main concern = over-deterrence = risk of chilling pro-competitive behavior (price cuts) by threatening firms with sanctions in case those prices are deemed too low ex post facto

US vs. EU

- Predatory pricing is not treated in the same manner in the US and in the EU
  - Enforcement is more or less dead in the US: no plaintiff has prevailed in a court case since 2003
  - Enforcement is alive in the EU: agencies routinely run predatory pricing cases
- There are historical, institutional, and ideological reasons for this divide:
  - historical: there used to be a lot of predatory pricing cases in the US till the 1980s, and observers agree that many went wrong
  - institutional: private enforcement + jury decision
  - ideological: influence of the Chicago critique (valid objections + prior about prevalence)
- Two main differences:
  - requirements for proving predatory pricing more stringent in the US (recoupment)
  - "margin squeeze" is treated as predatory pricing in the US while a separate offense in the EU

Economic theory

- For economics, predation is an *intertemporal trade-off* akin to standard investment:
  - invest in low prices/low profits now (loss)
  - to reap high profits in the future (recoupment)
- This can work only if:
  - predator has the ability to sustain losses till the exit of the prey
  - prey does not have the same ability to sustain losses
  - predator has the ability to exercise market power post-exit
- If strategy is successful, consumers gain in the short term but lose out in the long term

Economic theory (2)

- Many objections to any theory of predatory pricing, including:
  - the predator, if big, is likely to suffer more losses than the prey
  - why would the prey exit, knowing that the predator intends to raise prices in the future?
  - why would the predator choose to prey, when it can increase profit by more direct means (merger, collusion, side-payment)?
  - why is it that the predator could increase prices post-exit without triggering (re-)entry?
- So, like vertical foreclosure, economists have had to work hard to provide consistent, convincing theories of predatory pricing. As in the case of foreclosure this happened in 1980s and 1990s.

Economic theory (3)

- Two main strands of models:
  - **manipulation of beliefs** of the prey or its creditors: predator and prey are different; asymmetric information in favor of predator; predator acts in a way that makes prey believe that market is unprofitable (low demand, low cost of the prey, etc...)
  - **learning-by-doing**: current marginal cost is a function of cumulative output; producing a lot now reduces future marginal cost

US treatment

- Since *Matsushita* 1986, firm belief of the Supreme Court that "predatory pricing schemes are rarely tried, and even more rarely successful"
- Since *Brooke* 1993, insists on proof
  - (1) that pricing is below "an appropriate measure of costs"
  - (2) that there is a "dangerous probability" of recoupment of short-term losses
- If initial motion by a plaintiff does not contain evidence to this effect, summarily dismissed (= does not go to "discovery" phase)

EU treatment

- In effect, EU courts agree on the price-cost test but do not impose proof of the likelihood of recoupment
- Since AKZO 1991, the case law can be simplified as follows:
  - A price above ATC is conclusively lawful
  - A price between ATC and AVC is presumptively unlawful if there is extra evidence of a plan for eliminating competitors
  - A price below of AVC is presumptively unlawful
- Can always argue that price is objectively justified
- The CJEU recently reaffirmed the absence of need to prove actual or likely recoupment (although that can be used to show credible intent to exclude)

The "long-purse" / "deep-pocket" theory

- Old idea: if prey does not have easy access to funding, can be eliminated through predatory pricing (cannot sustain losses)
- Not obvious: why would the prey be capital-constrained in first place?
- Why couldn't it downscale operations and explain to creditor that it is preyed upon but that the market is in fact profitable?
- Careful response: Bolton-Sharfstein AER 1990
- Creditors do not know whether the firm is preyed upon or just "bad"
- More precisely, moral hazard on the part of firm requires incentive-contracting (do not renew funding if bad performance); predator can take advantage of this by making sure that the prey does perform badly; anticipating this, there is premature exit

Model of agency relationship

- Two firms, A and B
- Both incur fixed cost F at the beginning of every period
  - self-financed for A
  - externally financed for B (by monopoly investor)
- B's gross profit in any period is either $\pi_1 < F$ with probability θ or $\pi_2 > \pi_1$
- Valuable investment: $\bar{\pi} = \theta\pi_1 + (1-\theta)\pi_2 > F$
- $\pi_2 - \pi_1$: non-contractible component of profit; that is, level of profit is not observable

Model of agency relationship (2)

- 2 periods
- Revelation game:
  - investor gives firm F at the beginning of period 1
  - firm reports π_i at the end of period 1; pays R_i
  - investor renews funding with probability β_i (function of report π_i) at the beginning of period 2
  - firm reports π_j at the end of period 2; pays R_{ij}

Optimal contract without predation (Section I)

- One must have $R_{i1} = R_{i2} = R^i$ (incentive-compatibility)
- One must have $R^1 \leq \pi_1 - R_i + \pi_1$ (limited liability)
- Optimal contract

$$\max_{\beta_i, R_i, R^i} \quad -F + \theta\left[R_1 + \beta_1(R^1 - F)\right] + (1-\theta)\left[R_2 + \beta_2(R^2 - F)\right]$$

s.t. (1) $\pi_2 - R_2 + \beta_2(\bar{\pi} - R^2) \geq \pi_2 - R_1 + \beta_1(\bar{\pi} - R^1)$

(2) $R_i \leq \pi_i$

(2') $\pi_i - R_i + \pi_1 \geq R^i,\ i = 1, 2$

(3) $\theta\left[\pi_1 - R_1 + \beta_1(\bar{\pi} - R^1)\right] + (1-\theta)\left[\pi_2 - R_2 + \beta_2(\bar{\pi} - R^2)\right] \geq 0$

Optimal contract without predation (2)

- (3) (the participation constraint) does not bind (follows from (2) and (2'))
- (1) (the incentive-compatibility constraint) binds (firm has an incentive to lie about high profit)
- Can focus attention on contract with $R^1 = R^2 = \pi_1$
- So, $\max_{\beta_i, R_i} \quad -F + R_1 + \beta_2 (1-\theta)(\bar{\pi} - F) - \beta_1 [\theta F + (1-\theta)\bar{\pi} - \pi_1]$ s.t. $R_i \leq \pi_i$
- Solution:
  - $R_1^* = \pi_1$
  - $\beta_2^* = 1$
  - $\beta_1^* = 0$
  - $R_2^* = \bar{\pi}$

Optimal contract without predation (3)

- Give maximal incentive to report high profit: punish report π_1 (complete surplus extraction, no continuation), reward report π_2 (tax less, funding renewal)
- Investor cannot set $R_2 = 0$, for he would collect only $\pi_1 < F$ in period 2 (loss)
- Need to extract profit in period 1 (to the extent IC is satisfied) + F cannot be too large
- Expected profit for investor: $\pi_1 - F + (1 - \theta)(\bar{\pi} - F)$
- Proposition 1

Optimal contract with predation (Section II)

- Now, we add product-market interaction
- For unobservable cost $c > 0$, A can increase probability of low profit from θ to μ
- If B exists in period 2, then A is a monopolist and earns π^m
- If B stays, duopoly profits π^d
- A preys is benefits>costs: $(\mu - \theta)(\beta_2 - \beta_1)(\pi^m - \pi^d) > c$
- The previously financially optimal contract *maximizes* the benefit from predation!
- Denote $\Delta \equiv c / \left[(\mu - \theta)(\pi^m - \pi^d)\right]$. Predation occurs if $\Delta < \beta_2 - \beta_1$
- Assume financial contract is observable

Optimal contract with predation (2)

- By reducing $\beta_2 - \beta_1$, investor can deter predation
- Identify bets contract that deters predation
- Compare profit to contract that does not deter predation
- For first task, same program as before but with extra, no-predation constraint
- Constraint is binding. So, $\beta_2 - \beta_1 = \Delta$
- $R_1 = \pi_1$ as before; from IC, $R_2 = \pi_1 + \Delta(\bar{\pi} - \pi_1)$
- Solution, $\beta_1^* = 0$ and $\beta_2^* = \Delta$
- To get to a target $\beta_2 - \beta_1$, it is costly to increase β_1 (investor is ripped off in period 2) whereas it is less costly to decrease β_2 (tax less in period 1)

Optimal contract with predation (2)

- Obviously, outcome depends on Δ
- B enters only if Δ is high
- If very high, then predation is deterred post entry; if intermediate, predation takes place (Proposition 2)
- So, predation threat magnifies distortion (firm B is liquidated even more often in period 2)

Discussion

- How to detect predation according to this theory?
- Is this a theory of predatory *pricing*?
- Does it speak to the fundamental problem of enforcement mistakes?