Chain-Store Competition: Customized vs. Uniform Pricing by Paul Dobson and Michael Waterson

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Summary

- Retail chains practice one of two strategies in setting prices across their stores:
  - uniform pricing, i.e. set a chain-wide price
  - local pricing, i.e. customize prices to the store level (according to local demand and competition conditions).
- This paper aims at understanding why some chain-store groups may **deliberately choose not to price discrimate** across locations.
- The authors identify a strategic incentive to soften competition by **committing** to uniform pricing and characterize the kind and range of market circumstances under which such a strategy is profitable.

Summary

- Baseline model: Firm A operating as a monopoly in market 1 and facing one competitor (firm B) in market 2.
- If firm A commits to uniform pricing across markets:
  - It will incur a profit loss in market 1
  - but, under some circumstances, it will get higher duopoly profits in market 2
- Explanation for higher duopoly profits: Commitment to uniform pricing may decrease firm A's incentives to set low prices in market 2 which will **soften competition** as it will induce its rival to be less aggressive as well (in a setting with strategic complements)
  - This will be the case if the price in the monopoly market is higher than the equilibrium price in the duopoly market (due to the averaging effect of uniform pricing).
  - Sufficient condition for the latter to hold: industry demand elasticity in market 1 is lower than the demand elasticity faced by firm A in market 2.

Summary

- Provided the latter trade-off exists, when do the gain in profits from the duopoly market exceed the loss from the monopoly market?
  - It is shown that this might be the case in some but not all situations (in a general analytical framework).
  - Full characterization under a linear demand specification.
- Commitment to uniform pricing is profitable in a relatively limited range of circumstances but there is more scope for raising overall profits through uniform pricing if:
  - there are higher costs or reduced demand from using local pricing,
  - or industry players can jointly commit to uniform pricing.

Comments

The paper is interesting as it:

- offers a convincing strategic explanation for a well-documented behavior of certain retail chains,
- provides some insight into the market and demand conditions under which such behavior is (or is not) profitable in a general analytical framework,
- explains in detail the intuition behind the trade-off faced by retailers when deciding whether to adopt such behavior.

Comments

- In this paper commitment to uniform pricing is profitable only if it allows to soften competition.
  - In other contexts, retail chains might well have incentives to commit not to customize prices across locations in order to *toughen competition* (predation / entry deterrence).
- In the extension where both firms are monopolists in two different markets and face each other in a third market, it could be interesting to solve for the (non-cooperative) two-stage game instead of assuming that firms jointly decide whether to commit to uniform pricing in the first stage and then compete in prices in the second stage:
  - Free riding
  - Asymmetric equilibria, if they exist, would explain the fact that in some sectors some retail chains commit to uniform pricing while others do not (and would also be in sharp contrast to the main message in Thisse and Vives, 1988).

Comments

- Not fully convinced by some (formal) statements in the general analytical framework:
  - Suppose firm A commited to a uniform pricing policy in the first stage of the game; then its profit function is given by:

$$\pi_A\left(p_A, p_{B2}\right) = \pi_1\left(p_A\right) + \pi_{A2}\left(p_A, p_{B2}\right)$$

  - My understanding is that prices are set simultaneously (in the second stage of the game).
  - Then, why is the F.O.C defining firm A's best response function given (in the proof of Proposition 1) by:

$$\frac{d\pi_1}{dp_A} + \frac{\partial \pi_{A2}}{\partial p_A} + \frac{\partial \pi_{A2}}{\partial p_A} . \frac{dp^*_{B2}}{dp_A} = 0$$

  instead of:

$$\frac{d\pi_1}{dp_A} + \frac{\partial \pi_{A2}}{\partial p_A} = 0$$

Suggestions

- One probably complex but interesting problem is to give *general sufficient conditions* under which the equilibrium overall profit of firm A under uniform pricing is higher than under price discrimination.
- It might be possible to derive such sufficient conditions by using the following technique (used in Schmalensee 1981 with a different purpose):
  - Assume that, due to arbitrage constraints, a discriminating firm cannot drive a wedge greater than r between its two prices.
  - Consider firm A's overall profit function $\Pi(r)$ over the range $[0, \bar{r}]$ where the constraint is binding.
  - Note that $\Pi(0)$ is the profit under uniform pricing and $\Pi(\bar{r})$ is the profit under (unconstrained) price discrimination

Suggestions

- At best, it will be possible to find a sufficient condition for $\Pi(r)$ to be monotonic in r over the whole range $[0, \bar{r}]$, which will immediately allow to compare $\Pi(0)$ and $\Pi(\bar{r})$.
- At worst, a sufficient condition for an increase of r in the neighborhood of point $r = 0$ to raise (or lower) the overall profit can be obtained (through the sign of the derivative $\Pi'(0)$).

Further considerations

- Collusion:
  - If tacit collusion under a uniform pricing policy is easier to sustain than under (third-degree) price discrimination then this might provide retail chains with an extra incentive to commit to uniform pricing.
- Welfare effects
- Model with multi-product retail chains

Minor suggestions

- It would be nice to have:
  - some factual support for some of the model predictions...for instance the fact that commitment to uniform pricing is unlikely for very low or very high values of competition intensity.
  - a graphic representation of the shift in the reaction curve of firm A (in market 2) when it commits to uniform pricing.
  - the considered two-stage game defined in the main text (and not in a footnote as it currently is).