Signaling Quality in Vertical Relationships

by Philippe Bontems and Philippe Mahenc

Discussion by Yassine Lefouili (TSE)

Toulouse, 16 December 2011

Summary
Setting

- This paper investigates the issue of **quality signaling through prices** in a **vertical setting** involving a manufacturer and a retailer who:
  - share the same information about quality,
  - face uninformed consumers,
  - face a competitive fringe producing a differentiated product.

- Two scenarios are considered:
  1. The manufacturer controls the whole vertical structure.
  2. The manufacturer delegates the task of setting (final) prices to the retailer.

Summary

Results

- Under the integrated structure, an infinite number of equilibria exist but the only equilibrium that survives the "intuitive criterion" (Cho and Kreps, QJE 1987) is the "Riley equilibrium", i.e. the least costly separating equilibrium.

Summary

Results

- **Central result:** Under the decentralized structure, the optimal two-part tariff contracts induce the retailer to choose a unique price for each quality level (possibly the same for both). *This outcome is obtained without invoking the kind of consumer sophistication underlying the usual equilibrium selection criteria.*
    - If the consumers are initially not too optimistic about the product's quality, i.e. $\mu_0 \leq \bar{\mu}$, then there is a unique optimal contract, which induces the retailer to set the separating Riley prices.
    - If the consumers are initially optimistic enough, i.e. $\mu_0 > \bar{\mu}$, then there are multiple optimal contracts, each of which induces a unique pooling price.

- Considering a setting where the firm producing a product of uncertain quality faces a competitive fringe is interesting as it allows to:
  - study quality signaling through prices in an "intermediate" environment between a monopoly setting (Bagwell and Riordan, AER 1991) and oligopoly settings (Daughety and Reinganum, RAND 2007, GEB 2007, Janssen and Roy, GEB 2010).
  - show that the classic result that the "Riley equilbrium" is the only one that satisfies the "intuitive criterion" in a monopoly setting extends to an environment with passive competition,
  - perform some comparative statics with respect to the intensity of competition, e.g. it would be interesting to determine and discuss the effect of the parameter t on the threshold $\bar{\mu}$.

- **However**, the central message might be better conveyed to the reader if the main result (under a decentralized structure) is first presented in a monopoly setting (provided it holds in such a setting...) before being extended to an environment where the vertical chain faces downstream competition.

- The consumers are assumed to know that any contract between the manufacturer and the retailer takes the form of a two-part tariff contract.
  - Is this assumption "weaker" than requiring out-of-equilibrium beliefs to be reasonable in the sense of the "intuitive criterion"?
  - Do the consumers also need to know that the manufacturer has the whole bargaining power?

Role of the "intuitive criterion"

- In the benchmark case (vertical integration), all the separating equilibria except for the least costly one can be ruled out by eliminating dominated strategies, which is a weaker refinement than the "intuitive criterion".
  - This reduction of the set of equilibria can be done even with consumers that are less sophisticated in terms of their out-of-equilibrium beliefs than what is required by the "intuitive criterion".
- The "intuitive criterion" is crucial, however, to rule out all the pooling equilibria.

- Can it happen that $\bar{\mu} < 1$ *and* it's not costly to signal high quality (i.e. condition C does not hold)?
  - If this is true for a non-empty subset of parameters then the optimal contract(s) can induce the retailer to set a pooling price if the consumers are initially optimistic enough even when quality signaling is costless.
- Could (some of) the results be interpreted in terms of the incentives of a manufacturer to delegate the price-setting task to a retailer according to whether it believes that it faces "sophisticated" or "unsophisticated" consumers (in the sense of the intuitive criterion) in the downstream market?

Comments

Robustness

- How would the results be affected if:
  - a share of consumers could observe the quality of the product
  - the manufacturer did not have the whole bargaining power
  - the consumers were heterogenous in their valuation of quality
  - mixed strategies were allowed