

# Personalized pricing and competition

*by Andrew Rhodes and Jidong Zhou*

Discussion of **Rhodes on Rhodes**  
by Martin Peitz

CRESSE, July 2023

Quick summary:

Comparison of personalized pricing to uniform pricing under imperfect competition – old-fashioned topic with new and more general results

Many great economists already commented on this paper. What shall I do?

# Model

- Consumer valuation for product  $i$  is  $v_i \in [\underline{v}, \bar{v}]$ .
- $\mathbf{v} = (v_1, \dots, v_n)$ , distributed according to exchangeable cdf  $F(\mathbf{v})$
- Single product firms  $i \in \{1, \dots, n\}$  with constant marginal cost  $c < \bar{v}$
  
- Price discrimination (fully informed firms): Each firm sets price schedule  $p_i(\mathbf{v})$
- Uniform pricing (uninformed firms): Each firm sets price  $p_i$
  
- Note: Thisse and Vives (1988): perfectly negatively correlated valuations with full coverage.

# Some results

1. Under some mild conditions, in equilibrium, the highest personalized price is larger than the uniform price.
2. Under **full coverage**, personalized (compared to uniform) pricing leads to **lower firm profit and higher consumer surplus**.
3. For **i.i.d. exponentially distributed valuations and partial coverage** under both pricing regimes, personalized (compared to uniform) pricing leads to **higher firm profits and lower consumer surplus**.
4. If firm  $i$  can condition price only on  $v_i$  but not  $v_{-i}$  (partial information), for i.i.d. distributed valuations, profits and consumer surplus are the same as under fully personalized pricing (revenue-equivalence theorem in auction theory).

# Small comments

- ❑ Result 1 says that under personalized pricing some consumers are always worse off than under uniform pricing. Does the opposite also hold?
- ❑ Some more “real-world” discussion on the setting with partial information when valuations are not i.i.d. may be helpful in light of the discussion on data sharing between competing firms (or a platform’s information sharing policy, i.e. collecting data from all sellers and providing access to competing sellers’ data).
- ❑ Any result on the surplus ranking of the three information settings (no information, partial information, full information)?