Algorithms, personalised pricing and coordination

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What is personalised pricing and how does it relate to algorithms?

- Recent **CMA research paper** explores two ways that algorithms might affect competition
  - Facilitate collusive agreements and/or increase the risk of tacit coordination
  - Allow increased targeting of individual consumers
- **Personalised pricing:** “Using information about individuals’ conduct or characteristics, to set different prices to different consumers based on what the business thinks they are willing to pay”
- **Two essential ingredients for personalised pricing**
  - ‘**Big data**’ on consumer conduct and characteristics
  - **Algorithms** to estimate willingness to pay and implement individual pricing strategies
Does personalised pricing exist?

- **Lots of anecdotal evidence**
  - E.g. 12% of respondents to recent European Commission survey reported having had a ‘bad experience’ of personalised pricing
  - Press reports of personalised pricing in airlines and retail markets

- **Surprisingly little robust empirical evidence so far**
  - E.g. see recent CMA and European Commission studies; also OECD summary

- **Overall: firms increasingly have the ability to charge personalised prices; but incentives currently unclear?**
Should we be worried about personalised pricing?

- **Price discrimination is frequently pro-competitive**
  - E.g. cheap air fares to marginal consumers can lead to expansion of output and strong competition between airlines

- **However, we might have concerns about**
  - Distributional impacts – good for total welfare, but not necessarily good for consumers…
  - Exploitation of vulnerable consumers
  - Impact on trust in market outcomes?

- **Recent OECD paper gives an excellent summary of the arguments**
Coordination vs personalised pricing

- Does possibility of personalised pricing make algorithmic collusion less likely?
- Economic models of coordination would suggest yes
  - Coordination is less likely where products are heterogeneous – algorithms do not change this basic result
  - Coordination over individualised prices would require coordination across each customer segment and/or for firms to have a shared understanding of each customer’s willingness to pay
- Ezrachi and Stucke (2017) argue that a market might divide into a coordinated segment and a segment with personalised prices
  - In equilibrium, firms would make individualised offers to price sensitive customers with high demand (‘high value’ customers)
  - Other customers would receive the tacitly-coordinated price
  - However, relies on very strong assumptions
- Overall: could have concerns about either coordination or personalisation, but unlikely for both to occur in the same market