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Economic Analysis of Privacy in M&A cases

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Privacy in Merger Review

Introduction

- Mergers may affect the scope and depth of data collection
- "Orthodox view" on privacy in merger control
  - E.g. EU contribution at OECD Competition Committee(2018):
    "The issues of data protection and privacy are not, as such, a matter for EU competition law. […] [D]ata protection and privacy may be relevant in the Commission's merger analysis when they relate to the competitive process. For example, privacy may be an important element of quality of a product/service or data may be a necessary input for other products/services. In such circumstances, as with other non-price factors, the Commission will take data-related issues into account in its merger assessment."
- Relevant if a parameter of competition

Privacy in Merger Review

Challenges for quantitative analysis

- Concept of privacy
  - Right to privacy
  - Multidimensional feature of service quality:
    - Quantity and quality of data collected
    - Extent of data ownership
    - Data usage and sharing
    - Right to be forgotten
    - Security of storage
- Measurement
  - Again: Multidimensional character
  - How much do people value privacy?
  - Trade-offs with price and other product characteristics
  - Rational consumer, fully informed, perfect foresight?

Privacy in Merger Review

Challenges for quantitative analysis

- Multi-sided markets
  - “Free” online services
- Extent of privacy competition
  - Limited (why?)
- Relation between privacy and quality
  - General relation might not exist
  - Both scenarios plausible
    - Privacy ↓ Quality ↓
    - Privacy ↓ Quality ↑

A model of downward pressure on privacy

Waehrer (2016)

- Starting point
  - No general model possible
  - Frequent scenario for online firms
    - You offer a free internet service (price constrained to zero)
    - You earn revenue by supplying targeted advertising
  - Look at changes in privacy at the margin
- Two firms merge
  - Facing demand $d_i(t_1, t_2)$ for their online service
  - Online service is offered to consumers for free ($p_s = 0$)
  - Competition on quality/privacy t_i
  - Revenues from supplying advertising ($p_a > 0$)
  - Earning margins $m_i(t_i)$ with both revenues and costs depending on t_i

A model of downward pressure on privacy

Waehrer (2016)

- Profits
  - Single firm: $m_i(t_i)d_i(t_i, t_{-i})$
  - Merged entity: $m_1(t_1)d_1(t_1, t_2) + m_2(t_2)d_2(t_1, t_2)$
- How do profits react to changes in t_i after the merger
  - $m_2(t_2)\frac{\partial d_2(t_1,t_2)}{\partial t_1}$
- If the average consumer values t_i
  - $\frac{\partial d_2(t_1,t_2)}{\partial t_1} < 0$
- In this case, optimal price setting after merger implies a decrease in privacy

A model of downward pressure on privacy

Waehrer (2016)

- Assuming that firm 1 achieves an efficiency gain when merging changes the post-merger profit function of the merged entity to
  - $[m_1(t_1) - \Delta c]d_1(t_1, t_2) + m_2(t_2)d_2(t_1, t_2)$
- Profit maximization w.r.t t_i requires
  - $-\Delta c \frac{\partial d_1(t_1,t_2)}{\partial t_1} + m_2(t_2) \frac{\partial d_2(t_1,t_2)}{\partial t_1} = 0$
  - $\Delta c = m_2(t_2) \frac{\partial d_2(t_1,t_2)}{\partial t_1} / \frac{\partial d_1(t_1,t_2)}{\partial t_1}$
  - $\Delta c = m_2(t_2)\delta_{12}$
    - where $\delta_{12} = \frac{\partial d_2(t_1,t_2)}{\partial t_1} / \frac{\partial d_1(t_1,t_2)}{\partial t_1}$
- Symmetric for firm 2

A model of downward pressure on privacy

Waehrer (2016)

- Expression in percentage changes
  - $\frac{\Delta c}{m_1} = \frac{m_2}{m_1}\delta_{12}$
- We do not necessarily need to be able to measure quality/privacy in order to calculate the DQP
  - Need profit margins and diversion ratios w.r.t. changes in t_i
  - Measurement

Conclusion

- Decide on a case-by-case approach
  - Is privacy is a parameter of competition?
  - What does the quality-privacy relation look like on the margin?
  - Is pricing constrained?
- Useable in front of the courts?
- Direct consumer harm?
- Tinbergen Rule

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Thank you
for your attention!