EHMA 2025

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Does price disclosure lower prices in private MRI?

A difference-in-differences analysis

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EHMA Conference 4.-6.6.2025 Rennes, France

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Background of the study

- Lack of price transparency in the Finnish private health care markets
- Two price disclosures (shocks, S1 and S2) in the private MRI markets:
    - S1: 4/2012 Kelasto released average prices at the municipality level
    - S2: 12/2015 Lääkärihinta.fi released average prices at the provider level
    - Both tools excluded some MRI-procedures -> quasi experimental study design with control group
- Economic theory and empirical research suggest that increasing price information decreases prices.
- However, market conditions and the design of the price disclosure effect how providers or consumers adopt the information or react to it.

➢ Aim of the study was to estimate the effects of the two distinct price disclosures on the prices of private MRI in Finland.

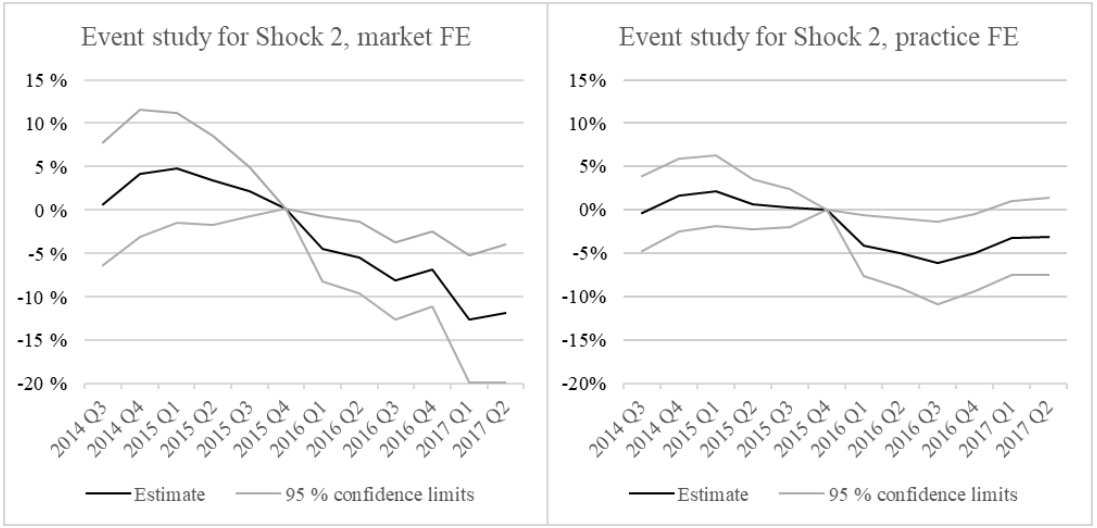
➢ We also evaluate the association of the effect with competitive market structure and the role of design of price comparison tools in promoting competition.

Data and methods

- Claims data from National Health Insurance (NHI) including years 2008-2017
  - MRI procedures (code, date, price, reimbursement), Patients (id, age, sex, income, ZIP-code), Referring physicians (id, age, sex, year of graduation, specialty), MRI practices (id, ZIP-code), Companies (id, market concentration index FTHHI)
- Difference-in-differences (DID) method utilizes the difference in the disclosure of prices between closely similar MRI procedures.
  - Base model: $log(price_{ijmt}) = \beta_0 + \beta_1(post_t \times exposure_j) + \lambda_w + \lambda_{jm} + \lambda_p + \varepsilon_{i(k)}$, with fixed effects for procedure-by-county -markets λ_{jm}, week-by-year λ_w and physicians specialty λ_p. Standard errors are clustered at MRI practice level
  - For analyzing provider responses market fixed effects are replaced with procedure and practice fixed effects
  - Analysis of heterogeneity across regions and procedures and dynamics of the effect
  - Analysis of interaction effects with market concentration index FTHHI
  - Pre-trend analysis

Results

- S1: No price effect
- S2 (market fixed effects):
  - 10,6% decrease in prices
  - Price gap expandad in time
- S2 (practice fixed effects):
  - 5,2% decrease in prices
  - Price effect diminished in time and turned statistically insignificant.



- The interaction effect of price disclosure and FTHHI was negative and statistically significant
  - Effect varied between -34% for the highest concentration (0.64) and +15% for the lowest (0.07).
- Pre-trend assumption holds validating the DiD method

Discussion

1. Disclosure of practice-level prices led to a causal 5.2% short-term price reduction by providers and longer term savings of 10,6% within markets for standardized MRI procedures
    - The provider price response (-5,2 %) is the causal average price reduction of an incumbent firm
    - Market-level savings (-10,6 %) include also the effect stemming from patient responses i.e., demand shifting between providers, but the estimated effect might be biased due to confounding differences between providers
    - Price transparency has potential in promoting competition between providers and gaining savings in Finnish private MRI markets
2. Price disclosure was more effective in more concentrated markets
    - Price disclosure is effective in inhibiting companies' ability to exert monopoly power in their pricing
3. Different effects for S1 and S2 are probably explained by differences in the:
    1. design of the tool and execution of the disclosure – S1 did not reveal the relevant price information sufficiently to ease price shopping
    2. competitive environment of the disclosure – market conditions affect the price sensitivity of both the patients and providers

- Results align with previous studies. Magnitudes of the estimated effects are also similar.
- Internal validity: Pre-trend assumption holds, but there could still be spill-over effects causing bias to our estimates.
- External validity: The effects might not be as strong for heterogeneous services, e.g. physicians' appointments, which are less easy to compare. Also, externalizing these results beyond the Finnish health care markets should be made with caution.
- Conclusion on welfare gains could not be drawn as providers could compensate price reductions by lower quality.

Conclusions

- Price transparency tools have potential in promoting competition by addressing informational frictions in health care markets, especially for standardized services
- Price comparison tools are particularly useful in concentrated markets in inhibiting companies' ability to use monopoly power in their pricing
- Effectiveness of price disclosure depends on tool design and market conditions, which should be put emphasis on when launching new price comparison tools

THANK YOU

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