Medical Loss Ratio Regulation and Insurer Pricing
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Introduction

- Regulating ratio of cost to revenue disincentivizes efficient cost-cutting.
- When input prices are negotiated, the effect of regulation will affect input prices via the negotiation channel.
- Since Jan 2011, the Affordable Care Act (ACA) Medical Loss Ratio (MLR) regulation imposes a minimum threshold to insurers on the ratio of medical cost to revenue.

\[
\text{threshold} \leq \text{MLR} = \frac{\text{Medical Care Claims} + \text{Quality Improvement Expenses}}{\text{Premium Revenue} - \text{Taxes and Fees}}
\]

- Insurer’s strategy when there is no regulation
  - bargain for low service prices (→low medical cost)
  - enjoy large profits (= premium revenue−medical cost)
- Insurer’s strategy when regulation is binding
  - realize no-regulation solutions are non-compliant
  - execute part of the bargaining power, allowing higher health service prices
  - achieve the required MLR threshold
  - keep large profits

Research question

- How MLR regulation affects insurer pricing in the light of insurer-provider price negotiation?
- What are the effects on prices and welfare?

Theoretical Framework

1. Price negotiation
   - insurers and health care providers bargain on health service prices.
   - Nash-bargaining model with regulation

2. Premium determination:
   - insurers determine premiums of the insurance plans to maximize their profit, given the negotiated health service prices.
   - Profit-maximization model with regulation

3. Demand for health insurance plans:
   - consumers choose health insurance plans based on plan characteristics and plan premium.
   - Discrete choice model

Data

- healthcare.gov: plan characteristics
- Center for Consumer Information and Insurance Oversight: Marketplace enrollment data and MLR reports containing firm characteristics
- Area Health Resources Files: market characteristics

Estimation Strategy

- Use random coefficient logit model to estimate demand
- Use GMM to estimate bargaining and cost parameters

Estimation Results

- \( \tau_1 \) is the difference in the bargaining power between compliant and non-compliant insurers.
- \( \lambda = 0.152 \) implies that 23.8% of marginal cost for non-compliant insurers is due to the MLR regulation.

<table>
<thead>
<tr>
<th>Effect of MLR Regulation</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \lambda )</td>
<td>0.133</td>
<td>0.143</td>
<td>0.145</td>
<td>0.152</td>
</tr>
<tr>
<td>( \tau_0 )</td>
<td>0.498</td>
<td>0.428</td>
<td>0.31</td>
<td>0.403</td>
</tr>
<tr>
<td>( \tau_1 )</td>
<td>0.1</td>
<td>-0.1</td>
<td>-0.035</td>
<td></td>
</tr>
<tr>
<td>Insurer Fixed Cost ( C^F )</td>
<td>1.285</td>
<td>1.227</td>
<td>0.255</td>
<td>1.226</td>
</tr>
<tr>
<td>Insurer Fixed Cost ( C^F \text{APP} )</td>
<td>(0.041)</td>
<td>(1.366)</td>
<td>(0.065)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>N observations</td>
<td>796</td>
<td>796</td>
<td>796</td>
<td>796</td>
</tr>
</tbody>
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Note: Standard errors are calculated by the parametric bootstrap method.

Counterfactual Analysis

1. Baseline (simulated pre-regulation ACA marketplace)
   - No regulation on profit, health service prices negotiated;

2. Fixed price and MLR regulation
   - Effective MLR regulation, prices fixed at no-regulation negotiated level;
   - \( 1 \to 2 \): same price, premium↓, demand↑, profit↓, consumer welfare↑4%

3. Price negotiation and MLR regulation
   - MLR regulation is effective, and health service prices negotiated;
   - \( 1 \to 3 \): price↑, premium↑, demand↓, similar profit, consumer welfare↓37%

4. Price negotiation and public option
   - No regulation on profit, health service prices negotiated, one public option with MLR=0.8.
   - \( 1 \to 4 \): price↓, premium↓, demand↑, profit↓, consumer welfare↑5%

Conclusion

From the bargaining model

- Price negotiation opens a channel for insurers to strategically change their cost containment behavior
- MLR regulation rules out bargaining equilibria with low health service prices

From the estimates in the individual ACA exchange marketplace

- The ACA MLR regulation leads to health service prices ↑ and consumer welfare ↓.

From the counterfactual analysis

- Price negotiation + MLR regulation ⇒ welfare loss
- A well-designed public health insurance option improves welfare by enhancing competition among insurers

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