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.

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

- 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

- τ_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.

		(1)	(2)	(3)	(4)
Effect of MLR Regulation	λ	0.133	0.143	0.145	0.152
		(0.01)	(0.007)	(0.01)	(0.009)
Nash Bargaining Parameters	τ_0	0.498	0.428	0.31	0.403
		(0.028)	(0.591)	(0.03)	(0.041)
	τ_1		-0.1		-0.035
			(0.089)		(0.216)
Insurer Fixed Cost	C^F	1.285	1.227	0.255	1.226
		(0.041)	(1.366)	(0.065)	(0.035)
	C^F_{NFP}			0.047	0.063
				(0.02)	(0.015)
N observations		796	796	796	796

Note: Standard errors are calculated by the parametric bootstrap method.

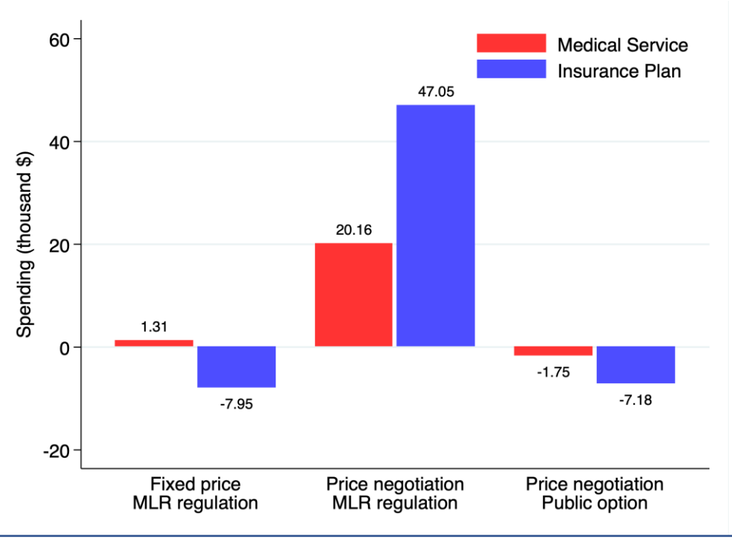
Counterfactual Analysis

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→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→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→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