ORGANIZACIÓN INDUSTRIAL EMPÍRICA IN7E0

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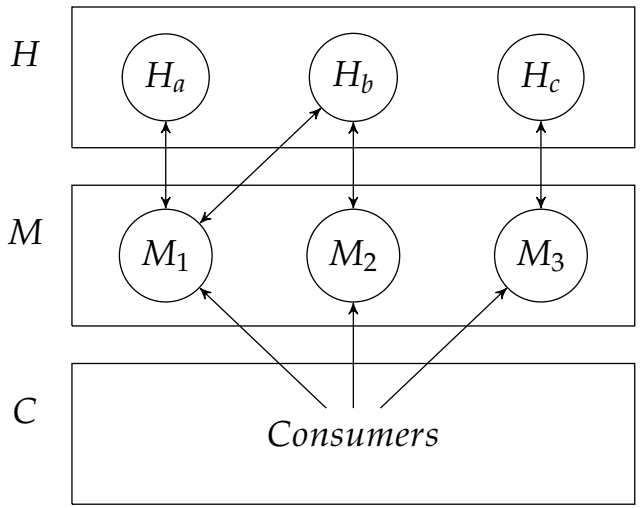
Outline

Motivation

- Multiple recent changes in U.S. health insurance markets:
  - Multiple horizontal mergers recently proposed (e.g. Aetna and Humana)
  - Hospital allegations of non-competitive agreements by insurers
- Insurer competition may increase quality and reduce premiums and costs...
  - ...but effects on other outcomes are ambiguous, particularly on hospital prices
  - ...and may not be welfare improving
- This paper provides an equilibrium framework to study health markets
  - Emphasis on price setting: bargaining rather than Nash-Bertrand

U.S. health care market



- Consumers enroll in insurers offered by employer, accessing to a hospital network
- Networks, premiums and prices are determined by bilateral negotiation
- Increased insurer competition can:
  - Lead to reductions in premiums
  - Increase hospital leverage to negotiate higher prices
- Net price effect theoretically ambiguous and context dependent

Ho and Lee (Econometrica 2017)

1. Develop a theoretical framework including:
   - Employer-insurer bargaining over premiums
   - Hospital-insurer bargaining over prices
   - Households demand for insurance
   - Individual demand for health services
   - A decomposition of the effects of insurer competition
2. Estimate the model:
   - Setting is the California Public Employees' Retirement System (CalPERS)
   - Recover preferences over insurers and hospitals, and bargaining parameters
3. Implement counterfactual simulations:
   - Study the effect of decreases in insurer competition
   - Results show that premiums in general increase, but not always...
   - ...and that prices may increase or decrease

Related literature

1. Market concentration on hospital prices
   - Mostly regressions of prices on HHI:
     - Insurer concentration: Melnick et al (2010), Dafny et al (2010, 2012),...
     - Hospital concentration: Capps Dranove (2004), Dafny (2009),...

   → Propose formal model able to conduct out-of-sample counterfactuals and measure welfare effects
2. Structural models of hospital-insurer demand and bargaining:
   - Most of them simplify aspects of the market and focus on hospital mergers
   - Capps et al (2003), Lewis Pflum (2013), Gowrisankaran et al (2014), ...

   → Allow for both insurer and hospital competition
3. Broader literature on bargaining in vertical markets in IO:
   - Add to recent literature: Crawford Yurukoglu (2012), Crawford et al (2015)

Model

- Sets of insurers and hospitals in market are $\mathcal{M}$ and $\mathcal{H}$, denoted by j and i
- Network of insurers and hospitals denoted by $\mathcal{G}$
- Three stages of the game:
  1. Price and premium determination:
     - Employer and insurers bargain over premiums ϕ
     - Hospitals and insurers $ij \in \mathcal{G}$ bargain over prices p
  2. Consumers purchase health insurance:
     - Choice is conditional on premiums and networks, market demand $D_j(\mathcal{G}, \phi)$
  3. Consumers get sick and choose hospital:
     - Choice is conditional on insurance choice, market demand is $D_{ij}^H(\mathcal{G}, \phi)$

Profits

Insurers

$$\pi_j^M(\mathcal{G}, p, \phi) = D_j(\cdot)(\phi_j - \eta_j) - \sum_{h \in \mathcal{G}_j^M} D_{hj}^H(\cdot) p_{hj}$$

Hospitals

$$\pi_i^H(\mathcal{G}, p, \phi) = \sum_{n \in \mathcal{G}_i^H} D_{in}^H(\cdot)(p_{in} - c_i)$$

Bargaining over premiums

- Premiums determined by Nash bargaining (Horn and Wollinsky, 1988):
  - Simultaneously maximize weighted gains from trade of parts
  - Weights determined by bargaining power
- Employer maximizes employees' welfare net of premium payments
- For every insurer, premiums satisfy:

$$\phi_j = \arg\max_{\phi_j} \Big[\underbrace{\pi_j^M(\mathcal{G}, p, \phi)}_{GFT_j^M} \Big]^{\tau^\phi} \times \Big[\underbrace{W^E(\mathcal{M}, \phi) - W^E(\mathcal{M}\backslash j, \phi_{-j})}_{GFT_j^E} \Big]^{(1-\tau^\phi)}$$

Bargaining over hospital prices

- Hospital prices also determined via simultaneous Nash bargaining
- For every insurer and hospital, prices satisfy:

$$p_{ij} = \arg\max_{p_{ij}} \Big[\underbrace{\pi_j^M(\mathcal{G}, p, \phi) - \pi_j^M(\mathcal{G}\backslash ij, p_{-ij}, \phi)}_{GFT_{ij}^M} \Big]^{\tau_j} \times \Big[\underbrace{\pi_i^H(\mathcal{G}, p, \phi) - \pi_i^H(\mathcal{G}\backslash ij, p_{-ij}, \phi)}_{GFT_{ij}^I} \Big]^{(1-\tau_j)} \quad \forall ij \in \mathcal{G}$$

Equilibrium premiums

- From the FOCs of the employer-insurer bargaining equation:

$$\frac{\partial \pi_j^M}{\partial \phi_j} = \frac{1-\tau^\phi}{\tau^\phi} \times \frac{\pi_j^M \times -\frac{\partial GFT_j^E}{\partial \phi_j}}{GFT_j^E} \quad \forall j$$

  such that:
  - $\tau^\phi = 1$ yields Nash-Bertrand premium pricing
  - $\tau^\phi \in (0,1)$ implies that employers constrain insurers away from Nash-Bertrand
  - $\tau^\phi = 0$ implies that premiums are sub that insurer cover costs

4 Effects on Equilibrium hospital prices

- From the FOCs of the hospital-insurer bargaining equation:

$$\underbrace{p_{ij}^{*} D_{ij}^{H}}_{Payments} = (1-\tau_j)\left[\underbrace{[\Delta_{ij} D_j](\phi_j - \eta_j)}_{(1)} - \underbrace{\sum_{h \in \mathcal{G}_j^M \setminus ij} p_{hj}^{*}[\Delta_{ij} D_{hj}^{H}]}_{(2)}\right]$$

$$+\tau_j\left[\underbrace{c_i D_{ij}^{H}}_{(3)} - \underbrace{\sum_{n \in \mathcal{G}_i^H \setminus ij} [\Delta_{ij} D_{in}^{H}](p_{in}^{*} - c_i)}_{(4)}\right] \quad \forall ij \in \mathcal{G}$$

1. Premium and enrollment: effect on insurer revenues
2. Price reinforcement: effect on insurer payments to hospitals other than i
3. Hospital cost: increases in costs result in τ_j-unit increases in payments
4. Recapture: effect over hospital revenues from insurers other than j

The effects of insurer competition

- From the employer-insurer bargaining equation:
  - If $\tau^{\phi} = 1$, back to Nash-Bertrand and less competition increases premium of j
  - If $\tau^{\phi} < 1$, the effect on premiums is ambiguous:
    - Less competition may increase or decrease GFT_j^E
    - Effect hinges on relative effect of less competition on GFT_j^E and π_j^M
- From the hospital-insurer bargaining equation:
  - For reduced competition:
    - *Premium effect* depends on change in premium $\rightarrow$ likely higher prices
    - *Enrollment effect* becomes smaller $\rightarrow$ higher insurer leverage, lower prices
  - Moreover, different effects affected in different directions by competition
  - Thus, not possible to theoretically sign the effect of competition in this model
- Effects of competition depends on primitives and context: demand, firm heterogeneity, institutional details

Setting and data

- California (CalPERS 2004):
  - Agency that manages pension and health benefits of CA employees
  - Market definition based on HSAs, 14 markets
  - Institutional constraints on premiums depending on household composition
- Choice set includes 3 insurers:
  - Blue Shield HMO (BS): 45%
  - Blue Cross PPO (BC): 16%
  - Kaiser Permanente (K): 39%
- Data:
  - Inpatient admissions
  - Claims: Observed prices per admission and DRG weights
  - Enrollment: Household composition, income
  - Networks: 400 insurer-hospital pairs with > 10 admissions
  - Other: AHA hospital data, including costs, system, characteristics
  - Caveat: Admissions and claims data not available for Kaiser

Constructing hospital prices

- The model is tailored to bargaining over a price index
  - They construct DRG-adjusted prices
  - DRG weights adjust for cost intensity of admissions
- Assumption is:

$$p_a = p^*_{ij} \times DRG_a + \varepsilon_a$$

and estimate p^*_{ij} as:

$$\hat{p}_{ij} = \frac{\sum_{\forall a \in \mathcal{A}_{ij}} p_a}{\sum_{\forall a \in \mathcal{A}_{ij}} DRG_a} = p^*_{ij} + \varepsilon^A_{ij}$$

where ε^A_{ij} is a mean zero error term

Summary statistics

		BS	BC	Kaiser
Premiums (per year)	Single	3782.64	4192.92	3665.04
	2-Party	7565.28	8385.84	7330.08
	Family	9834.84	10901.64	9529.08
	Revenues (per individual)	2860.34	3179.39	2788.05
Insurer Characteristics	# Hospitals in Network	187	220	27
	# Hospital Systems in Network	119	147	-
	Hospital Prices (per admission)	7146.29	6029.46	-
	Hospital Payments (per individual)	621.55	554.91	-
	Hospital Costs (per admission)	1599.43	1601.90	-
Household Enrollment	Single	19313	8254	20319
	2-Party	16376	7199	15903
	Family	35058	11170	29127
	Avg. # Individuals/Family	3.97	3.99	3.94

- Relevant features:
  - Households pay $\sim$ 20% of annual premiums, state covers $\sim$ 80%
  - Premiums effectively increasing with family size (multiples are 2$\times$, 2.6$\times$)

Taking the model to the data

Model	Inputs	Outputs
3. Hospital demand	Admissions w/demographics, hospital attributes, hospital networks	Hospital demand system, WTP for networks
2. Insurer demand	HH enrollment w/demographics, plan premiums, WTP for networks	Insurer demand system
1. Bargaining over premium and prices.	Premiums, prices, networks, hospital demand system, insurer demand systems	Insurer costs, bargaining weights

Hospital demand

- Estimate by MLE a Discrete choice model at individual level, conditional on HH insurance plan
- Upon admission, a diagnosis l is assigned
- Observable heterogeneity at the age-sex level
- Utility of individual k assumed to be:

$$u^H_{kilm} = \delta_i + z_i v_{kl} \beta^z + d_{ik} \beta^d_m + \varepsilon^H_{kilm}$$

- Shocks ε^H_{kilm} uncorrelated with hospital characteristics
- No selection into insurance plans on unobservable preferences for hospitals

WTP for network of plan j in market m:

$$WTP_{kjm}(\mathcal{G}_{jm}) = \gamma^a_{\kappa(k)} \sum_{l \in \mathcal{L}} \gamma_{\kappa(k)l} \log \sum_{h \in \mathcal{G}_{jm}} \exp(\hat{\delta}_h + z_h v_{kl} \hat{\beta}^z + d_{hk} \hat{\beta}^d_m)$$

where $\gamma^a_{\kappa(k)}$ and $\gamma_{\kappa(k)l}$ are sickness/diagnosis probabilities taken from data

Insurer demand

- Discrete choice model at HH level, considering individual preferences
- Choice set is given by three available plans
- Utility of household f from $j \in \{BS, BC\}$ is given by:

$$u^M_{fjm} = \delta_{jm} + \alpha^{\phi}_f \phi_{\lambda(f)j} + \sum_{\forall \kappa} \alpha^W_\kappa \sum_{k \in f, \kappa(k)=\kappa} WTP_{kjm} + \varepsilon^M_{fjm}$$

where $\lambda(f)$ indicates HH type and α^{ϕ}_f is a function of income y_f

- Kaiser is the outside option
- Identification:
  - Within-plan variation in premiums across HH types
  - Within-plan and within-market variation in WTP due to variation in distance to hospitals in network

Insurer demand results

- Higher income HHs are less price sensitive
- HHs overall prefer plans that provide higher network WTP
- Estimated elasticities are in line with literature:

	Single	2-Party	Family
BS	-1.25	-2.18	-2.56
BC	-1.62	-2.50	-2.94
Kaiser	-1.20	-2.04	-2.41

Insurer costs, premium and price bargaining

Objective is $\theta = \{\eta, \tau\}$, with $\eta = \{\eta_{BC}, \eta_{BS}, \eta_K\}$ and $\tau = \{\tau_{BC}, \tau_{BS}, \tau^{\phi}\}$
Strategy is to construct 3 moments based on FOCs and outside data

1. Premium bargaining:

$$\omega^1(\theta) = \tau^{\phi} \times \frac{\partial \pi_j^M}{\partial \phi_j} - (1 - \tau^{\phi}) \times \frac{\pi_j^M \times \frac{\partial GFT_j^E}{\partial \phi_j}}{GFT_j^E} \quad \forall j$$

2. Insurer margins:

$$\omega^2(\theta) = \underbrace{MLR_j^o}_{\text{data}} - \underbrace{\frac{\hat{D}^E(\cdot)\eta_j + \sum_{h \in \mathcal{G}_j} \hat{D}_{hj}^H(\cdot)\hat{p}_{hj}}{\phi_j \Phi' \hat{D}_j(\cdot)}}_{\text{model}} \quad \forall j$$

where instruments are a constant and the number of hospital systems in insurers' networks

Insurer costs, premium and price bargaining

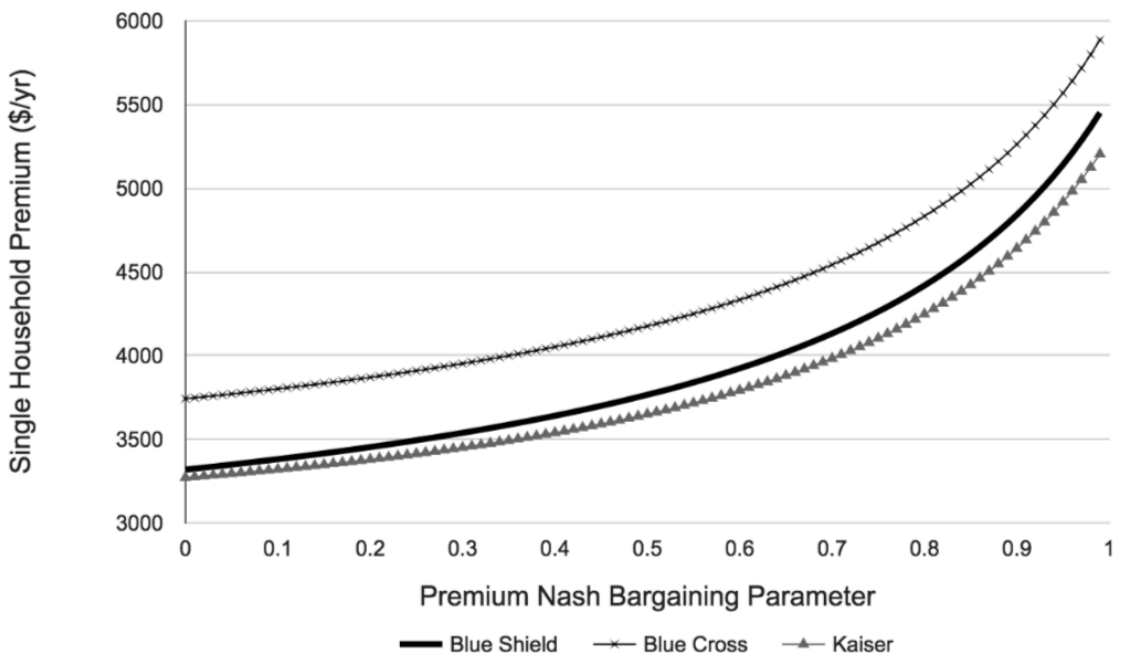
3. Price bargaining:

$$\omega^3(\theta) = p^*_{ij}D^H_{ij} - (1-\tau_j)\left[[\Delta_{ij}D_j](\phi_j - \eta_j) - \sum_{h\in\mathcal{G}^M_j\setminus ij} p^*_{hj}[\Delta_{ij}D^H_{hj}]\right]$$
$$-\tau_j\left[c_iD^H_{ij} - \sum_{n\in\mathcal{G}^H_i\setminus ij}[\Delta_{ij}D^H_{in}](p^*_{in}-c_i)\right] \quad \forall ij\in\mathcal{G}$$

- Instruments are constructed replacing prices in each term by c_i or ΔWTP
- Identification relies on the correlation of prices with costs and changes in enrollment
- θ is estimated by 2-step GMM using all moments jointly

Identification of premium bargaining parameter

- Using estimates, compute optimal premiums for $\tau^{\phi} \in [0, 1]$
- Premiums are increasing in τ^{ϕ}:
  - Roughly cover costs at $\tau^{\phi} = 0$
  - Substantially larger than observed at $\tau^{\phi} = 1$
  - Employers effectively constrain premium setting!



Supply side estimates

Comparing Nash-Bertrand and bargaining premium setting

- Margins implied under Nash-Bertrand larger, estimated costs lower
- Employer bargaining power estimated to be substantial, constrains pricing

		(i)	(ii)
Insurer Non-Inpatient	η_{BS}	948.90	1,697.66
Marginal Costs		68.30	12.25
(per individual)	η_{BC}	1,416.96	1,959.32
		120.31	84.41
	η_K	1,442.00	2,491.37
		-	1.21
Nash Bargaining Parameters	τ_{BS}	0.34	0.32
		0.03	0.06
	τ_{BC}	0.42	0.34
		0.03	0.02
	τ^{ϕ}	1.00	0.51
		-	0.00
Use Margin Moments		N	Y
Number of Bilateral Pairs		266	266

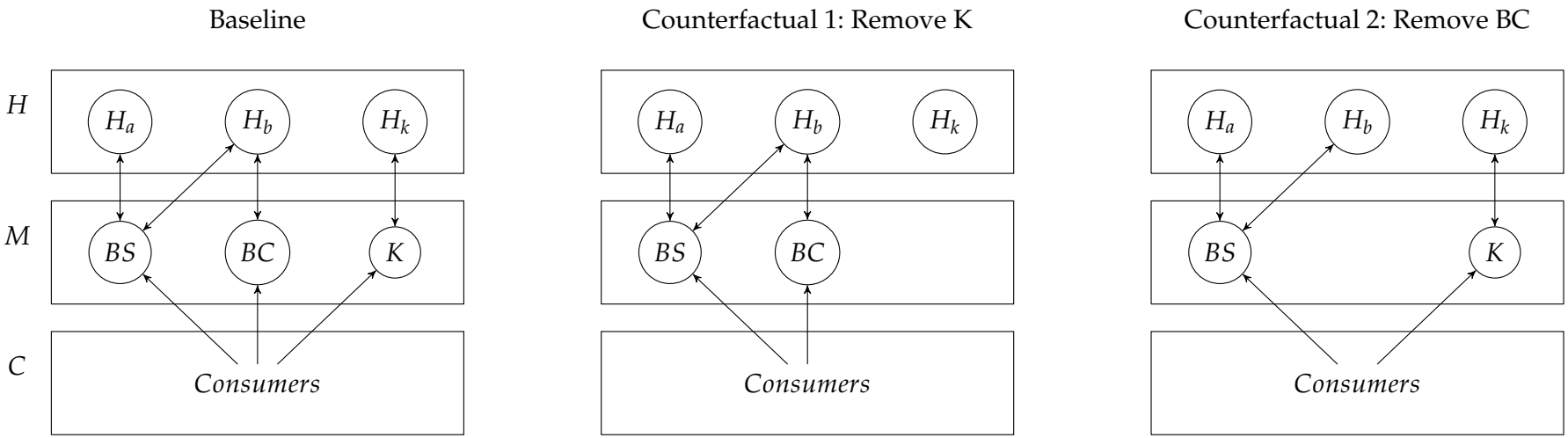
Decomposing hospital prices

- Using estimates, decompose hospital prices:
- Premium, enrollment and price reinforcement effects dominate others

	Price	(i) Premium & Enrollment	(ii) Price Reinforcement	(iii) Hospital Costs	(iv) Recapture Effect
BS	7146.29	24.6%	65.9%	8.9%	0.7%
		[19.5%, 26.4%]	[53.1%, 71.1%]	[2.4%, 7.5%]	[0.2%, 0.5%]
BC	6029.46	33.0%	54.0%	10.4%	2.7%
		[28.0%, 31.5%]	[46.0%, 51.8%]	[7.8%, 9.8%]	[2.0%, 2.6%]

Removing an insurer from the market

- Objective is to study equilibrium effects of a decrease in insurer competition
- Simulate removal of Kaiser and of BC:



- Use model to recompute equilibrium prices, premiums, enrollment, utilization
- Hold fixed networks, hospital characteristics, entry and exit in both markets

Results for insurance outcomes

- Recall theoretical predictions for premiums:
  - Employers effectively constrain prices away from Nash-Bertrand
  - If removing an insurer increases GFT^E, then premiums may increase
  - But, GFT^E may decrease if removed insurer is of high cost for employer

Results for insurance outcomes

- Removing K induces premium increases by BC and BS:
  - Market power effect
  - Increased GFT for employer $\rightarrow$ upward pressure on premiums towards B-N
- Removing BC induces premium decreases by K and BS:
  - BC is the most expensive plan in the market
  - Removing it actually decreases GFT^E with K and BS for employer
  - Bargaining effect overcomes market power effect

		Baseline	(i) Remove Kaiser		(ii) Remove BC	
		Amount	Amount	% Change	Amount	% Change
Premiums (per year)	BS	3.78 [3.75, 3.79]	4.43 [4.33, 4.44]	17.19% [14.9%, 17.3%]	3.65 [3.59, 3.66]	-3.44% [-4.8%, -3.3%]
	BC	4.19 [4.16, 4.20]	4.82 [4.72, 4.83]	14.86% [13.0%, 15.0%]	-	-
	Kaiser	3.67 [3.65, 3.67]	-	-	3.61 [3.59, 3.61]	-1.43% [-1.9%, -1.4%]
Household Enrollment	BS	72.12 [71.86, 72.89]	124.38 [124.36, 124.52]	72.45% [70.5%, 73.1%]	85.31 [85.17, 86.81]	18.28% [18.1%, 20.0%]
	BC	26.92 [26.91, 26.94]	38.34 [38.20, 38.36]	42.43% [41.9%, 42.5%]	-	-
	Kaiser	63.68 [62.89, 63.94]	-	-	67.45 [65.96, 67.58]	5.92% [4.0%, 6.1%]

Results for hospital outcomes

- Recall theoretical predictions for hospital prices:
  - Premium effect: weaker competition, higher p_{ij}
  - Enrollment effect: enrollment decrease for an insurer from dropping a hospital is lower, improves proves insurer outside option, lower p_{ij}
  - Recapture effect: fewer consumers may switch plans to keep access to a dropped hospital; hospital outside option becomes worse, lower p_{ij}
  - Price reinforcement effect: mixture of changes in both enrollment and other hospital prices; ambiguous effect on p_{ij}
- Overall prediction not clear, but can decompose effects

Results for hospital outcomes

- Removing K increases prices for BC, but not for BS:
  - Premium effect dominates other bargaining effects for BC
  - Premium effect is offset by other bargaining effects for BS
- Removing BC decreases prices for BS:
  - Likely the case that other insurers gain leverage
  - Countervailing effects dominate in this case

		Baseline	(i) Remove Kaiser		(ii) Remove BC	
		Amount	Amount	% Change	Amount	% Change
Hospital Payments (per individual)	BS	0.66 [.64, .67]	0.66 [.60, .67]	0.82% [-8.3%, 1.0%]	0.60 [.53, .61]	-8.08% [-19.5%, -7.8%]
	BC	0.56 [.55, .58]	0.70 [.67, .72]	23.95% [21.6%, 26.2%]	-	-
Hospital Prices (per admission)	BS	7.15 [6.99, 7.29]	7.21 [6.47, 7.31]	0.89% [-8.6%, 1.1%]	6.55 [5.66, 6.64]	-8.36% [-20.3%, -8.1%]
	BC	6.03 [6.00, 6.42]	7.46 [7.21, 7.67]	23.72% [21.4%, 26.0%]	-	-

More on prices

Results for profits and surplus

- Consumer welfare may decrease:
  - Particularly when premiums, prices increase
  - Removal of valued hospital networks part of the explanation as well
- However, welfare losses are smaller when premiums, prices decrease

		Baseline	(i) Remove Kaiser		(ii) Remove BC	
		Amount	Amount	% Change	Amount	% Change
Surplus	Insurer	0.45	1.00	122.75%	0.39	-13.10%
(per individual)		[.45, .45]	[.99, 1.00]	[120.9%, 123.4%]	[.39, .40]	[-13.3%, -9.3%]
	Hospitals	0.29	0.52	75.98%	0.27	-8.55%
	(Non-K)	[.29, .30]	[.47, .53]	[60.1%, 76.9%]	[.23, .27]	[-20.7%, -8.0%]
	Δ Cons.	-	-0.20	-	-0.01	-
			[-.20, -.19]		[-.01, .00]	

Conclusions

- Equilibrium effects of changes in competition in insurer markets ambiguous:
  - Premiums likely but always increase
  - Effects on prices are ambiguous
  - Results support plausible countervailing effects
  - Potential cost savings from reduced insurer competition in some settings
- Pricing institutions crucial: bargaining vs Nash-Bertrand

- Limitations and further work:
  - No market responses to changes in competition: entry/exit, mergers
  - Are bargaining parameters structural?
  - Limited scope for *steering* by insurers

The effect of competition on prices

Back

$$
\begin{aligned}
p^{CF}_{\mathcal{S}_j} - p^{o}_{\mathcal{S}_j} \quad = \quad & (1-\tau_j)\Bigg[\underbrace{\frac{[\Delta_{\mathcal{S}_j}\hat{D}^{o}_{j}]}{\hat{D}^{H,CF}_{\mathcal{S}_j}}(\phi^{CF}_{j}-\phi^{o}_{j})}_{\Delta \text{ in premium effect}}\Bigg] \\
& +(1-\tau_j)\Bigg[\underbrace{\Big(\frac{[\Delta_{\mathcal{S}_j}\hat{D}^{CF}_{j}]}{\hat{D}^{H,CF}_{\mathcal{S}_j}}-\frac{[\Delta_{\mathcal{S}_j}\hat{D}^{o}_{j}]}{\hat{D}^{H,o}_{\mathcal{S}_j}}\Big)\phi^{CF}_{j}-\Big(\frac{[\Delta_{\mathcal{S}_j}\hat{D}^{E}_{j}]}{\hat{D}^{H,CF}_{\mathcal{S}_j}}-\frac{[\Delta_{\mathcal{S}_j}\hat{D}^{E,o}_{j}]}{\hat{D}^{H,o}_{\mathcal{S}_j}}\Big)\eta_j}_{\Delta \text{ in enrollment effect}}\Bigg] \\
& -(1-\tau_j)\Bigg[\underbrace{\frac{\sum_{h\in\mathcal{G}^{M}_{j}\setminus\mathcal{S}_j} p^{CF}_{hj}[\Delta_{\mathcal{S}_j}\hat{D}^{H,CF}_{hj}]}{\hat{D}^{H,CF}_{\mathcal{S}_j}}-\frac{\sum_{h\in\mathcal{G}^{M}_{j}\setminus\mathcal{S}_j} p^{o}_{hj}[\Delta_{\mathcal{S}_j}\hat{D}^{H,o}_{hj}]}{\hat{D}^{H,o}_{\mathcal{S}_j}}}_{\Delta \text{ in reinforcement effect}}\Bigg] \\
& +\tau_j\Bigg[\underbrace{\frac{\sum_{i\in\mathcal{S}} c_i\hat{D}^{H,CF}_{ij}}{\hat{D}^{H,CF}_{\mathcal{S}_j}}-\frac{\sum_{i\in\mathcal{S}} c_i\hat{D}^{H,o}_{ij}}{\hat{D}^{H,o}_{\mathcal{S}_j}}}_{\Delta \text{ in cost effect}}\Bigg] \\
& -\tau_j\Bigg[\underbrace{\sum_{n\in\mathcal{G}^{H}_{\mathcal{S}},n\neq j}\frac{\sum_{i\in\mathcal{S}}[\Delta_{\mathcal{S}j}D^{H,CF}_{in}](p^{CF}_{in}-c_i)}{\hat{D}^{H,CF}_{\mathcal{S}_j}}-\frac{\sum_{i\in\mathcal{S}}[\Delta_{\mathcal{S}j}D^{H,o}_{in}](p^{o}_{in}-c_i)}{\hat{D}^{H,o}_{\mathcal{S}_j}}}_{\Delta \text{ in recapture effect}}\Bigg]
\end{aligned}
$$

Looking closer at prices

Back

- Substantial variation across markets → effects depend on *local* context
- Premium effect depends on actual change in premiums
- Enrollment effect always negative → less competition, higher insurer leverage

	Avg. Hospital Price ($ / admission)					Decomposition of Change ($ / admission)				
		Fix Premiums		Adjust Premiums		(ia) Prem	(ib) Enroll	(ii) Price	(iii) Cost	(iv) Re-
	Baseline	CF	% Change	CF	% Change	Effect	Effect	Reinforce	Effect	Capture
(ia) REMOVE KAISER: BS PRICES										
All Mkts	7146.31	6439.32	-9.89%	7164.86	0.26%	649.50	-1176.44	504.16	0.54	40.78
2. Sacramento	8217.80	7419.97	-9.71%	7842.85	-4.56%	635.67	-1616.02	580.04	1.63	23.74
4. SF Bay W.	8830.07	8027.74	-9.09%	8620.39	-2.37%	642.37	-1476.35	563.38	-0.96	61.89
5. E. Bay	7339.10	6017.12	-18.01%	6578.92	-10.36%	732.20	-1814.24	274.26	0.13	47.49
9. C. Valley	6551.47	6323.72	-3.48%	7280.30	11.12%	576.33	-581.93	675.46	0.04	58.92
10. S. Barbara	7975.46	7820.59	-1.94%	8737.12	9.55%	410.05	-195.67	516.33	3.11	27.84
11. LA	5725.24	4711.52	-17.71%	5537.66	-3.28%	674.08	-1151.90	261.95	0.52	27.78
14. SD	6707.39	6119.59	-8.76%	6681.55	-0.39%	476.29	-914.89	393.69	-0.09	19.16
(ib) REMOVE KAISER: BC PRICES										
All Mkts	6029.43	5981.34	-0.80%	7385.22	22.49%	737.35	-142.33	691.20	0.17	69.39
2. Sacramento	6586.68	6647.51	0.92%	8322.99	26.36%	912.66	-148.31	874.75	1.58	95.63
4. SF Bay W.	7615.43	7737.98	1.61%	9391.44	23.32%	917.17	-174.15	876.10	-0.65	157.53
5. E. Bay	7183.67	7157.43	-0.37%	8777.37	22.18%	922.62	-242.61	801.68	0.08	111.93
9. C. Valley	5192.68	5190.33	-0.05%	6956.22	33.96%	965.62	-147.99	834.89	0.06	110.97
10. S. Barbara	5143.06	5097.44	-0.89%	6577.43	27.89%	767.44	-97.00	717.45	2.86	43.62
11. LA	6096.05	5777.28	-5.23%	7102.05	16.50%	750.50	-415.79	640.07	0.19	31.03
14. SD	5345.53	5445.44	1.87%	6952.33	30.06%	879.05	-148.40	806.08	-0.07	70.15
(ii) REMOVE BLUE CROSS: BS PRICES										
All Mkts	7146.31	6878.10	-3.75%	6610.39	-7.50%	-129.76	-232.74	-146.57	0.02	-26.88
2. Sacramento	8217.80	8129.33	-1.08%	7843.47	-4.56%	-126.99	-120.31	-112.50	-0.02	-14.52
4. SF Bay W.	8830.07	8663.20	-1.89%	8398.56	-4.89%	-128.33	-178.36	-88.73	0.14	-36.22
5. E. Bay	7339.10	7230.69	-1.48%	6908.12	-5.87%	-146.28	-104.30	-158.90	0.00	-21.49
9. C. Valley	6551.47	5951.51	-9.16%	5789.31	-11.63%	-115.14	-461.97	-125.26	-0.02	-59.77
10. S. Barbara	7975.46	7342.01	-7.94%	7266.15	-8.89%	-81.92	-586.06	12.59	-0.37	-53.54
11. LA	5725.24	5483.53	-4.22%	5180.87	-9.51%	-134.67	-204.99	-185.21	-0.03	-19.48
14. SD	6707.39	6437.35	-4.03%	6240.80	-6.96%	-95.15	-218.51	-139.88	0.00	-13.05

CF under Nash-Bertrand

Back

		Baseline	(iii) Remove BC (Nash-Bertrand)	
		Amount	Amount	% Change
Premiums (per year)	BS	3.78 [3.75, 3.79]	4.19 [4.14, 4.21]	10.87% [10.5%, 11.1%]
	BC	4.19 [4.18, 4.21]	-	-
	Kaiser	3.67 [3.65, 3.67]	3.99 [3.96, 4.00]	8.82% [8.3%, 9.1%]
Household Enrollment	BS	72.12 [71.74, 73.21]	81.06 [80.76, 81.91]	12.40% [11.7%, 12.7%]
	BC	26.92 [26.18, 27.20]	-	-
	Kaiser	63.68 [63.34, 63.80]	73.05 [72.46, 73.29]	14.72% [14.4%, 14.9%]
Hospital Payments (per individual)	BS	0.66 [.64, .67]	0.66 [.64, .67]	-0.09% [-.4%, .5%]
	BC	0.56 [.55, .58]	-	-
Hospital Prices (per admission)	BS	7.15 [6.98, 7.29]	7.09 [6.94, 7.25]	-0.73% [-1.0%, -.1%]
	BC	6.03 [6.02, 6.44]	-	-
Surplus (per individual)	Insurer	1.28 [1.28, 1.29]	1.59 [1.57, 1.59]	23.76% [22.5%, 24.3%]
	Hospitals (Non-K)	0.29 [.29, .30]	0.29 [.28, .29]	-2.44% [-3.5%, -1.6%]
	Δ Cons.	-	-0.08 [-.09, -.08]	-