Moral Hazard Induced Unraveling

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Motivation:

- Many of the recent insurance expansions in US have relied on "managed competition."
  - Private insurers.
  - Limit price discrimination.
    - Community rating.
  - Increase affordability.
    - Means-tested subsidies for premiums and out-of-pocket (OOP) payments.
  - Medicare Part D, Medicare Advantage, and the Affordable Care Act Health Insurance Exchanges all have these features.

Motivation:

- Governments offer OOP subsidies in a tradeoff of affordability and the inefficiencies from moral hazard.
- It is very common for governments to intervene in markets with adverse selection.
  - However, it is usually thought the government has less of a role to play in "correcting" moral hazard.
  - This is because there typically isn't an externality for moral hazard.
  - Community rating changes that though!

Research Questions:

- Can means-tested, OOP subsidies unravel insurance markets with community rating?
- Is this happening on the ACA Exchanges?
- How bad is the welfare loss?

Research Questions:

- **Can means-tested OOP subsidies unravel insurance markets with community rating?**
  - Yes. The combination of subsidies and community rating mimics adverse selection.
  - Shown graphically.
- **Is this happening on the ACA Exchanges?**
  - Yes. Reimbursing the MH component of OOP subsidies would lower premiums by around $1000 and increase unsubsidized enrollment.
  - Medicaid Expansion Difference-in-Differences.

Research Questions:

- **How bad is the welfare loss?**
  - About $50 per potential market participant.
  - 25% of the cost of adverse selection.
  - Structural Model.

Brief Background:

- Our empirics focus on the ACA, so I'll use that language.
  - Shown graphically, have a general theory in the paper.
- ACA subsidies on two margins: OOP and Premiums.
  - Premium Subsidies:
    - Premiums are capped at 2% of income for everyone under 400% of the FPL.
    - In practice, this is binding for most people.
  - OOP Subsidies:
    - People under 250% of the FPL have their cost-sharing subsidized.
    - People 100% - 150% FPL pay just $0.06 on the dollar for healthcare.

Example: Means-Tested OOP Subsidies

	Standard Silver – No CSR	CSR Plan for 201-250% FPL	CSR Plan for 151-200% FPL	CSR Plan for up to 150% FPL
Actuarial Value	70% AV	73% AV	87% AV	94% AV
Deductible (Individual)	$7,150	$4,500	$800	$250
Maximum OOP Limit (Individual)	$7,350	$5,700	$1,700	$550
Inpatient hospital	30% (after deductible)	30% (after deductible)	10% (after deductible)	10% (after deductible)
Physician visit	$70	$30	$10	$5

Theory:

(1) Moral Hazard means OOP subsidies induce higher costs.

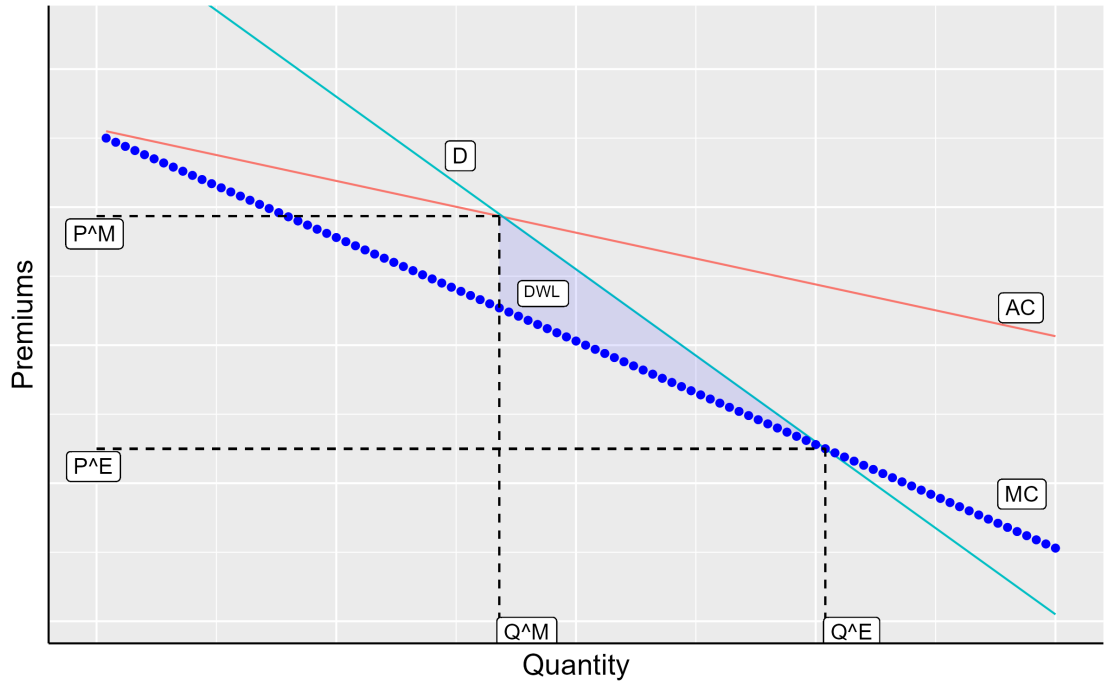
(2) Community rating spreads this increased cost to unsubsidized enrollees.

(3) Premium subsidies ensure that *only* the unsubsidized feel the cost increase.

- We can show how this works in the graphical framework of Einav and Finkelstein (2011).

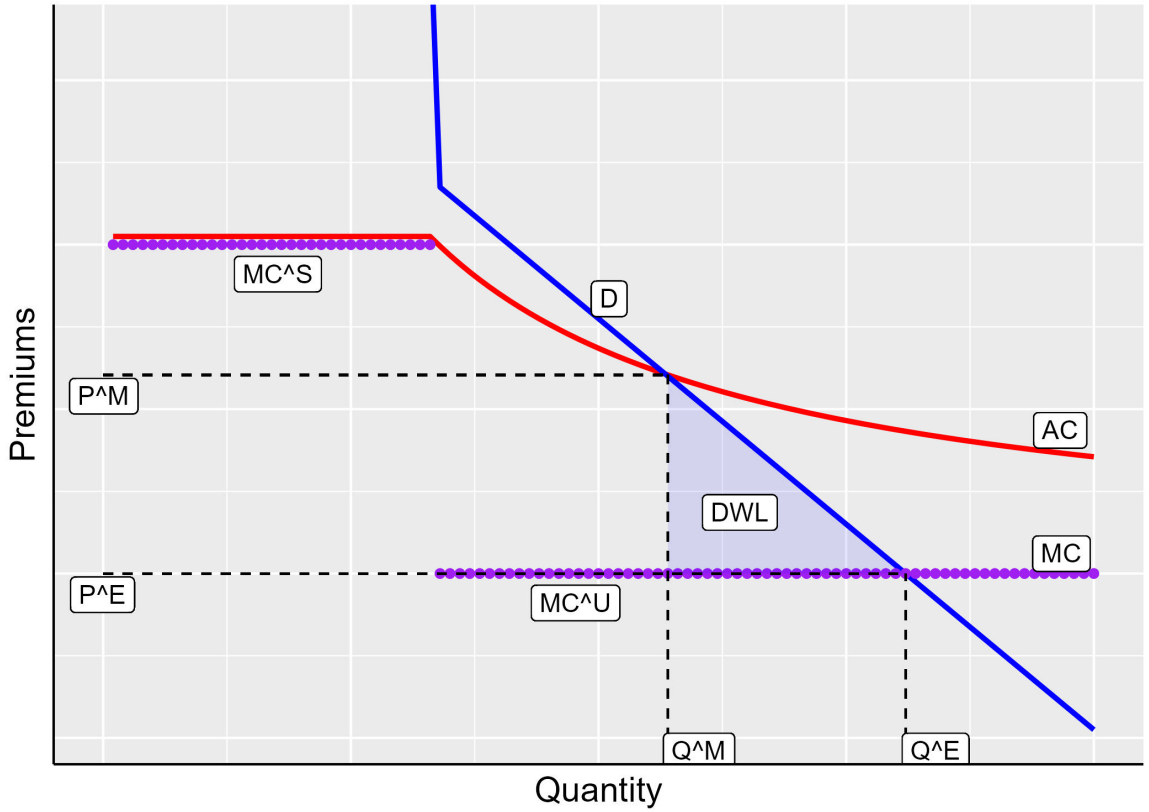
Theory: Unraveling

- Brief reminder of Einav and Finkelstein Model.
- Adverse selection means *MC* curve is downward sloping.
  - Higher cost = higher demand
- Downward sloping *MC* curve means $AC > MC$.
- Inefficiency comes from under-insurance.



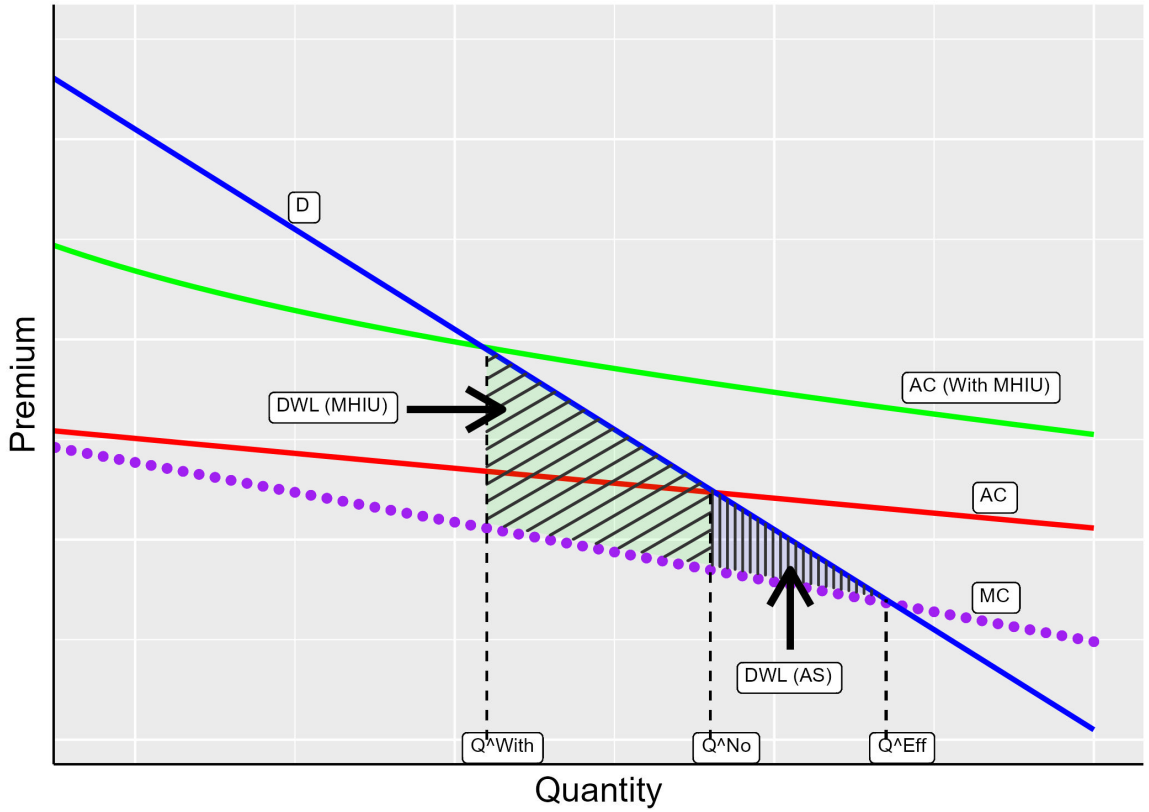
Theory: Unraveling

- Same base MC (no selection).
- OOP subsidies increase MC for some consumers.
- Premium subsidies move them to the “left".
- Makes AC curve slope down, mimicking adverse selection.



Theory: Unraveling

- What if we add adverse selection?
- The problem gets worse!
- This is because the people who are kicked out have a higher risk premium.



Welfare Estimation

Assume linear demand and cost functions (Einav, Finkelstein, and Cullen (2010)):

$$D(P) = \alpha + \beta * P$$

$$AC(P) = \gamma + \delta * P + \sigma * \mu$$

- δ and γ are the adverse selection parameters.
- μ is the additional moral hazard cost.
- σ is the share of enrollees that get subsidies.
- Equilibrium $\Longrightarrow$ D(P) = AC(P).
  - We also allow for markups later.

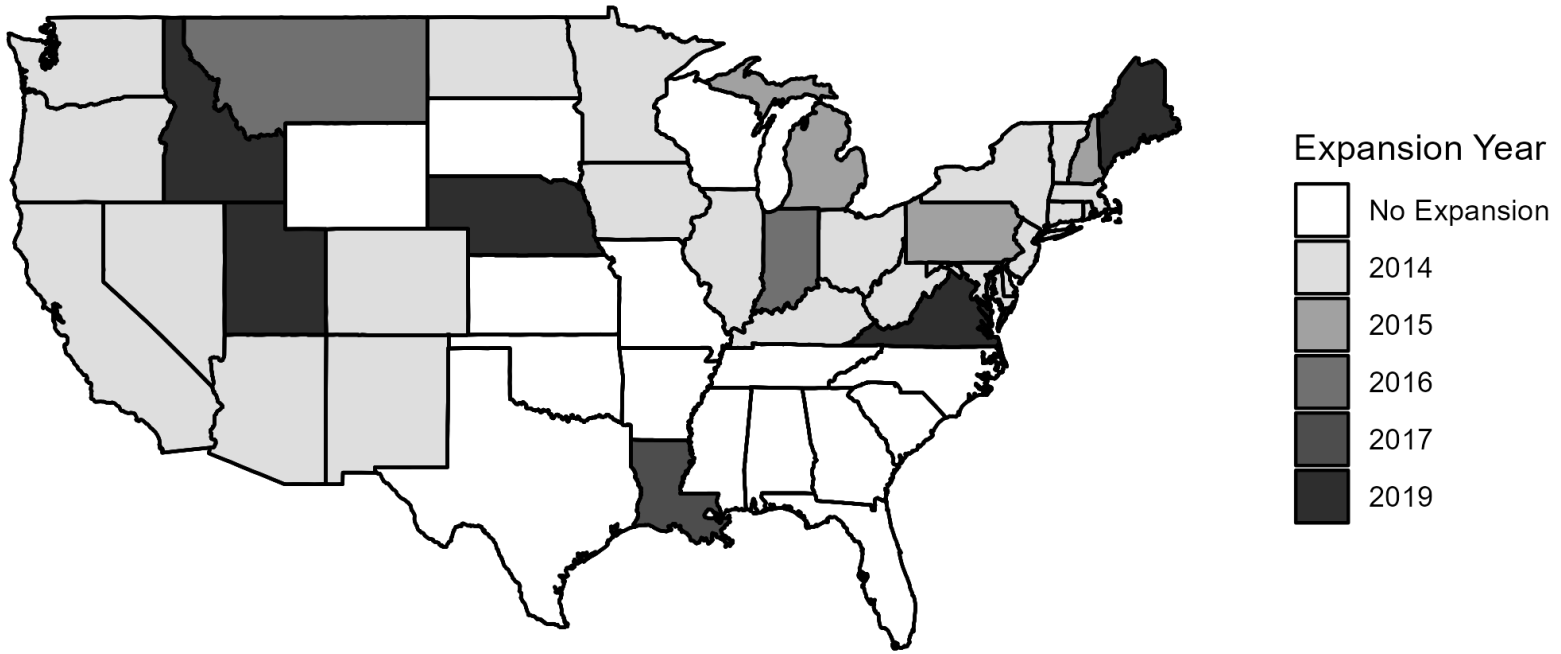
Welfare Estimation

- δ and μ we take from the literature.
  - δ = .155 (Einav, Finkelstein, and Cullen (2010))
  - μ = \$721
    - Determined by the elasticity from the RAND Health Insurance Experiment.
  - Use these to back out γ.
- σ we observe in the data.
- α and β we need to estimate.

Estimating α and β

- We need something that changes the share of subsidized enrollees, which changes premiums, but doesn't otherwise impact demand by the unsubsidized.
- The ACA's Medicaid Expansion fits this perfectly.
  - If you are eligible for Medicaid, you don't get exchange subsidies.
  - So Medicaid Expansion mechanically reduces the percentage of subsidized enrollees by about 40%.

Affordable Care Act: Medicaid Expansion



Model: Difference-in-Differences

- Borusyak et al. (2021) imputed diff-in-diff approach.

For (1) share HIX enroll 150% FPL, (2) premiums, (3) HIX enroll 400+% FPL, and (4) uninsured 400+% FPL, we estimate,

$$y_{st}^0 = x_{st}^{'}\alpha + \theta_s + \tau_t + \varepsilon_{st} \tag{1}$$

$$y_{st}^1 - \widehat{y_{st}^0} = \beta_1 Expand_{st} + \gamma_{st} \tag{2}$$

- (1) uses non-treated units and (2) uses all units.
- $x_{st} \rightarrow$ controls
- θ_s and τ_t are state (or rating-area) and year fixed effects.
- Combine estimates on HIX premiums and HIX enrollment as an IV to causally estimate demand.

Data:

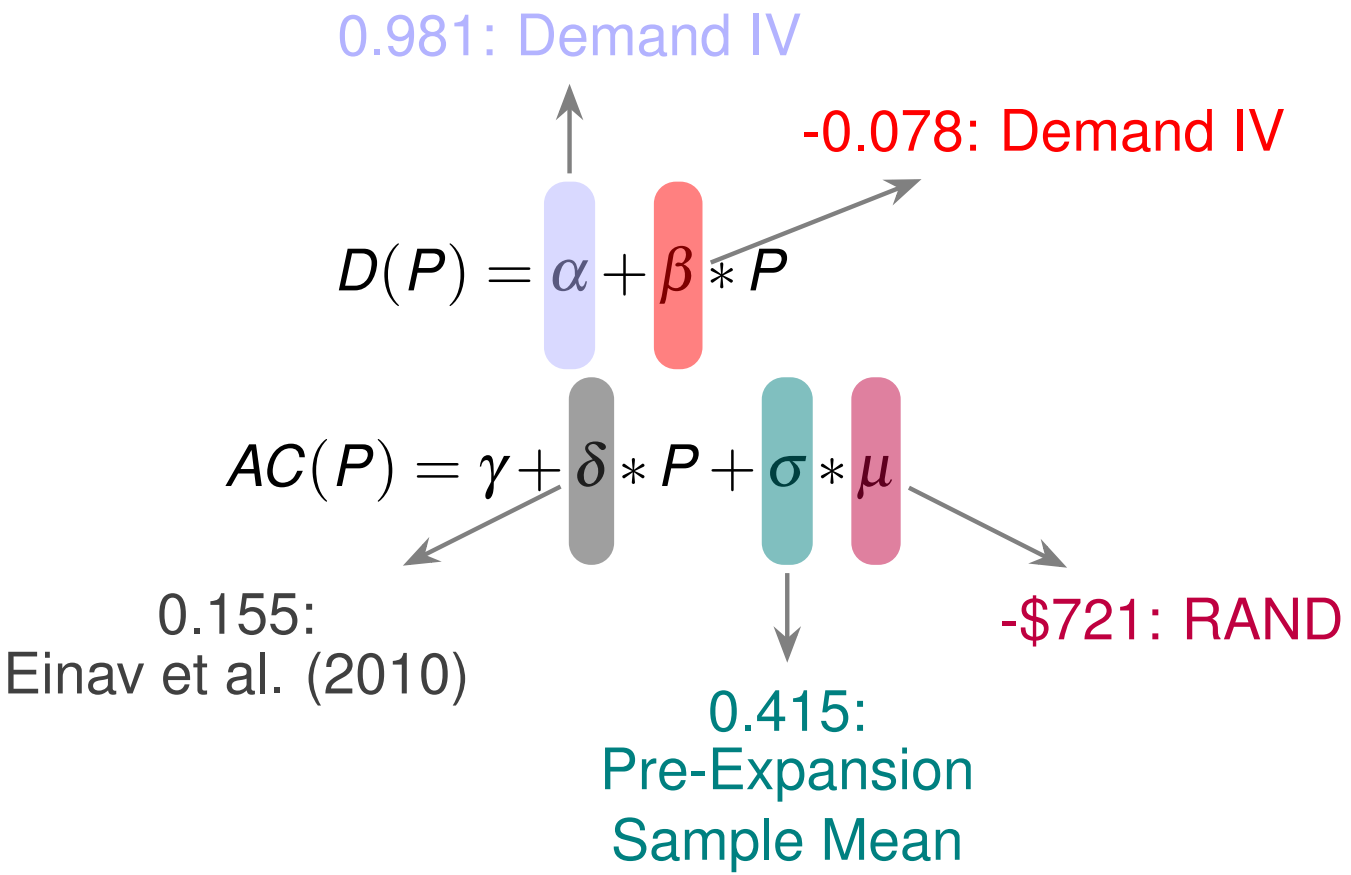
- HIX Compare: 2014-2017
  - Premiums for 27 years olds at the rating area, plan, carrier, and metal level.
  - Sample: 275 rating areas with 59,013 plans.
  - Utilize 2015-2017 expanders.
  - Avg. annual premium: $3,400.
- HIX Open Enrollment Period (OEP) Data: 2015-2017
  - Number enrollees in a given rating area based on income.
  - 40% enrolled on HIX $\rightarrow$ 100-150% FPL.
- American Community Survey (ACS): 2012-2017
  - Health insurance takeup data:
    - Uninsured Rate and Exchange Purchase.
    - Probability 400+% FPL uninsured $\rightarrow$ 3.6%

Results: Demand Estimation

	(1) Log Share of HIX 100-150% FPL	(2) Premiums (000s):	(3) P(HIX Purchase):	(4) Unsubsidized Uninsured Rate (% point):	(5) Demand IV ((3)/(2))
Estimated ATT	-0.471^{***}	-0.374^{***}	0.029^{***}	-0.126^{*}	-0.078^{***}
90% Confidence Interval	[-0.511, -0.412]	[-0.511, -0.213]	[0.012, 0.043]	[-0.281, -0.02]	[-0.125, -0.05]
Implied Intercept	-	-	-	-	0.981^{***}
90% Confidence Interval					[0.887, 1.14]
Person Controls?	No	No	Yes	Yes	-
Plan Controls?	No	Yes	No	No	-
Year Fixed Effects?	Yes	Yes	Yes	Yes	-
Rating-Area Fixed Effects?	Yes	Yes	No	No	-
State Fixed Effects?	No	No	Yes	Yes	-
Pre-Expansion Sample Mean	0.415	3.09	0.74	3.6	-
Implied Post-Expansion Mean	0.259	2.71	0.769	3.5	-
Implied No-MHIU Mean	0	2.09	0.818	3.3	-
Observations	747	59,013	213,208	3,595,818	-

Placebo Check

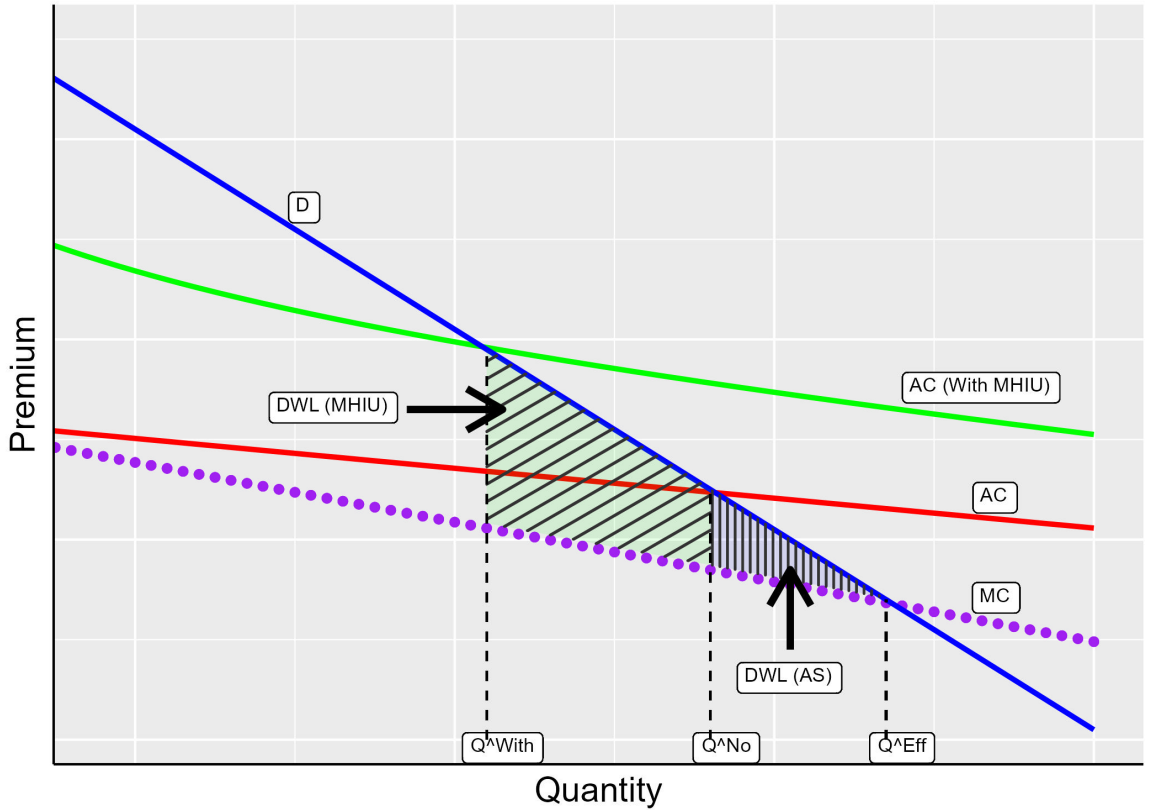
Welfare: Setup



Theory Reminder:

We are estimating:

- Size of MHIU DWL
- Size of AS DWL
- Enrollment change for AS
- Enrollment change for MHIU



Welfare Estimates

		(1) Enrollment loss due to MHIU	(2) Enrollment loss due to MHIU and AS	(3) Welfare loss (Δ_{MFE})	(4) Loss due to AS (Δ_{AGE})	(5) Loss due to MHIU (Δ_{MFGA})	(6) Share of Welfare Loss due to MHIU
1	RAND Elasticity (Base Case)	0.028	0.2	177	132	46	0.257

- Base Case: $50 DWL from MHIU
  - Compared to $130 from AS.
- Enrollment loss from AS is much bigger.
  - But welfare losses are still comparable.

Welfare Estimates

		(1) Enrollment loss due to MHIU	(2) Enrollment loss due to MHIU and AS	(3) Welfare loss (Δ_{MFE})	(4) Loss due to AS (Δ_{AGE})	(5) Loss due to MHIU (Δ_{MFGA})	(6) Share of Welfare Loss due to MHIU
1	RAND Elasticity (Base Case)	0.028	0.2	177	132	46	0.257
2	Lavetti et al Elasticity	0.018	0.188	157	128	28	0.182
3	Ellis et al Elasticity	0.061	0.241	256	143	113	0.441
4	Brot-Goldberg et al Elasticity	0.079	0.241	280	132	148	0.529

- Changing the elasticity (μ) assumption has a big effect.
  - Lavetti et al is a lower bound and drops the DWL to $28.

Welfare Estimates

		(1) Enrollment loss due to MHIU	(2) Enrollment loss due to MHIU and AS	(3) Welfare loss (Δ_{MFE})	(4) Loss due to AS (Δ_{AGE})	(5) Loss due to MHIU (Δ_{MFGA})	(6) Share of Welfare Loss due to MHIU
1	RAND Elasticity (Base Case)	0.028	0.2	177	132	46	0.257
5	No Adverse Selection	0.023	0.023	3	0	3	1
6	1/2 as Much Adverse Selection	0.025	0.095	49	27	23	0.46
7	2x More Adverse Selection	0.034	0.241	390	319	72	0.184

- Changing the level of AS has a huge effect.
- No adverse selection reduces the DWL to basically 0.
- Increasing adverse selection also increases the loss from MHIU.

Welfare Estimates

		(1) Enrollment loss due to MHIU	(2) Enrollment loss due to MHIU and AS	(3) Welfare loss (Δ_{MFE})	(4) Loss due to AS (Δ_{AGE})	(5) Loss due to MHIU (Δ_{MFGA})	(6) Share of Welfare Loss due to MHIU
1	RAND Elasticity (Base Case)	0.028	0.2	177	132	46	0.257
8	If markups are 15%	0.034	0.241	269	201	68	0.254
9	Health/Wealth Gradient	0.028	0.241	263	207	56	0.214

- Allowing for 15% markups also increases the welfare loss.
- Adding a $1000 health/wealth gradient does as well.
  - Since subsidies are means-tested, it basically just mimics MHIU

Conclusion:

- We show how community rating with means-tested OOP subsidies can unravel a market through moral hazard.
- Use the ACA HIXs and Medicaid expansion to test this empirically.
- Economically meaningful:
  - Accounts for 12% higher premiums.
  - Total welfare loss of $177 per person – about a quarter due to MHIU.

Thank you! Questions?

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Results: Placebo Check

	150-400% FPL:	400+% FPL:
	(1)	(2)
	P(HIX Purchase):	Employer-Sponsored Insurance Rate:
Estimated ATT	−0.001	0.001
90% Confidence Interval	[-0.014, 0.013]	[-0.001, 0.004]
Pre-Expansion Sample Mean	0.435	0.962
Observations	499,980	3,595,818

Return