

Screening in Exchanges: Some Facts and Findings from Geruso, Layton, Prinz (2016)

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UT Austin and the National Bureau of Economic Research

September 2017
Penn LDI HIX Conference

Despite RA, Concerns about Screening in Exchanges

Thinking here about selection influencing not risk pool, but plan design

HIV Patients Accuse Health Plans of Using Drug Costs to Discriminate

by John Tozzi
@jtozz

from **BloombergBusinessweek**

Health care law did not end discrimination against those with pre-existing conditions

By Kay Tillow

THE WALL STREET JOURNAL.

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<http://blogs.wsj.com/pharmalot/2015/02/24/health-insurers-discriminate-against-patients-who-need-specialty-drugs/>

LIFE

Health Insurers Discriminate Against Patients who Need Specialty Drugs?

By ED SILVERMAN

Feb 24, 2015 9:06 am ET

In a final rule issued last week concerning health benefits provided by the Affordable Care Act, the federal government noted that some health insurers are using “potentially discriminatory practices” against people with certain illnesses. As a result, they are paying more for their



ANDREW ROBERTS

Despite RA, Concerns about Screening in Exchanges

- Even in the absence of direct discrimination via premiums or coverage denials, possibility of dissuading consumers from joining plans via benefit design
- Anecdotes point to limiting access to entire classes of drugs as a backdoor discrimination. (Undoes intended protections for pre-existing conditions.)
- In November 2015, the National Multiple Sclerosis Society filed a comment with HHS's Office for Civil Rights explaining that "common health insurance practices that can discriminate against people with MS are formularies that place all covered therapies in specialty tiers."
- Separately, HHS has noted that one method indicating discrimination is to place "most or all drugs that treat a specific condition on the highest cost tiers."

Drug Tiering in Exchanges/Marketplaces

- We study selection-related formulary design in 2015 in the ACA Exchanges
- Investigate whether drugs treating chronic conditions are a plausible screen
 - Prices are relatively transparent
 - Patient needs are predictable, and coverage may be salient at enrollment

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- First, examine whether there is scope for selection: Does drug use predict profits net of risk adjustment?

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- First, examine whether there is scope for selection: Does drug use predict profits net of risk adjustment?
- Second, ask whether formularies of Exchange plans track the incentive

Part 1: How Well is Payment System Performing in Neutralizing Screening Incentives?

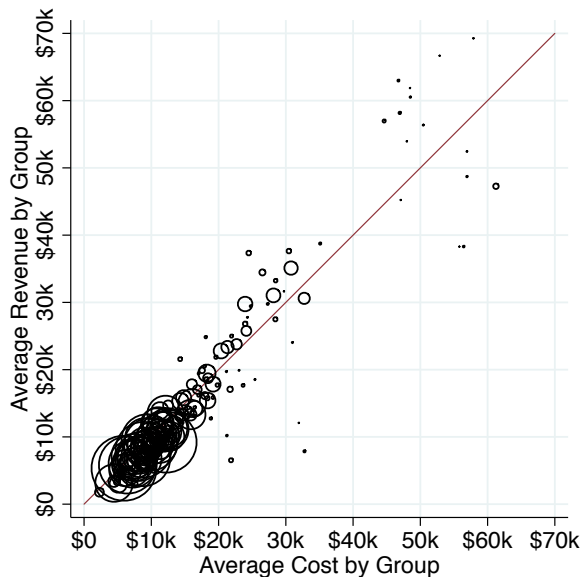
Selection Incentive - Data

- Marketscan administrative health insurance claims data (mostly self-insured employers) for about 12M people
- For each individual we observe
 - Demographics
 - Total spending
 - Prescription drug claims
 - All diagnoses appearing in claims
- Use HHS formulas/software to simulate person-specific plan revenues
 - Premiums
 - Risk adjustment transfer
 - Reinsurance
- Note that this is not Exchange data: Instead, we use it to produce out-of-sample predictions of which drugs insurers are incentivized to ration due to selection

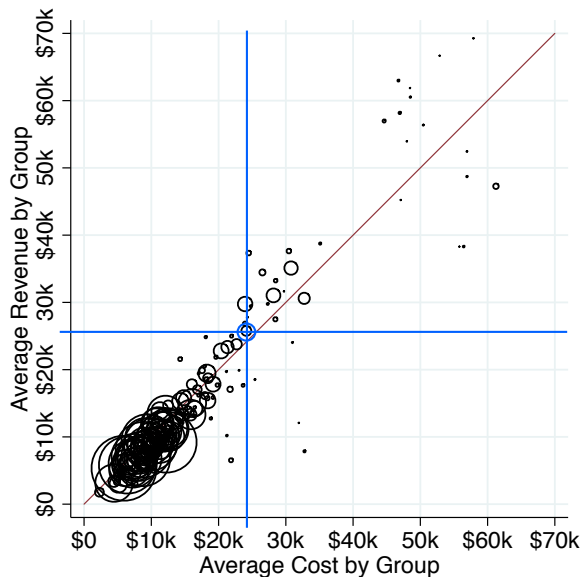
Selection Incentive - Aggregating up to Therapeutic Classes

- We group into standard therapeutic classes using REDBOOK e.g., *Anticoagulants* (blood thinners), *Antihyperlipidemics* (statins); *Oral Contraceptives*; *Antidiabetic Agents*, *Insulins*
- 220 mutually exclusive drug classes c
- Goal is to avoid conflating screening with steering patients to lower cost alternatives among classes of substitutes.
- From patient-specific costs, C_i , and revenues, R_i , calculate means \overline{C}_c and \overline{R}_c among consumers who fill a prescription for a drug in class c

Fact 1: For most classes, selection incentives neutralized

[▶ zoom in](#)[▶ zoom out](#)

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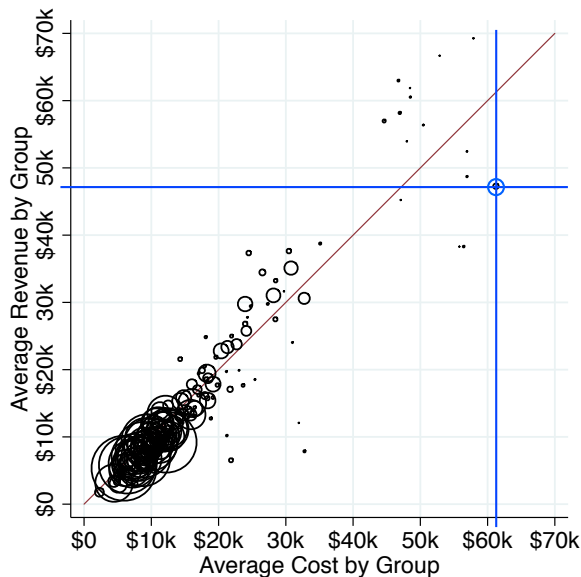
vasodilating agents
(treat angina)

~\$24,000 in costs

~\$26,000 in revenue =

\$4,200 in premiums,
\$17,878 in RA, and
\$3,680 in reinsurance

Fact 2: For some outliers, drug consumption signal of profitability



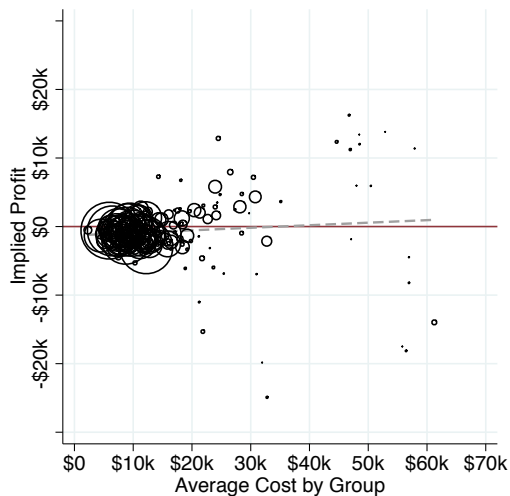
biological response modifiers (treat multiple sclerosis, others)

~\$61,000 in costs

~\$47,000 in revenue =

\$4,200 in premiums,
\$34,420 in RA, and
\$8,648 in reinsurance

Fact 3: No overall correlation between profitability and cost



- No correlation btwn cost and implied profit
- Implies RA + Reinsurance succeed in decoupling profitability from patient costs on avg
- Implies that if plan designs track these incentives, some sophistication on part of insurers

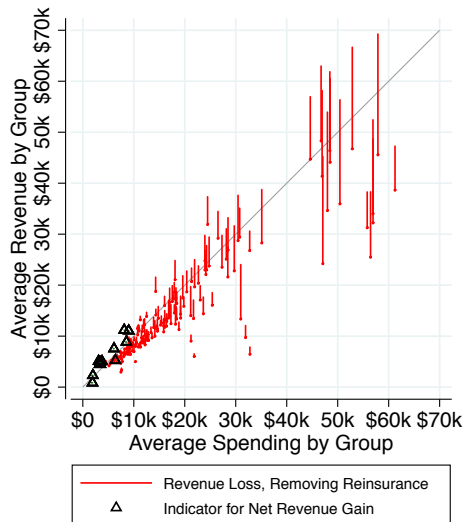
▶ zoom in

▶ zoom out

Why the 'Errors' in the Payment System?

- Possible technological change in the intervening period between calibration and now (Carey 2016)
- HHS-HCC system based on Medicare Advantage's CMS-HCC system; in fact, does a good job compensating diabetes and heart disease.
- More generally, no reason to believe that predictors (drug utilization) that were not included in the RA algorithm are orthogonal to profitability

Fact 4: Reinsurance affects predictable profitability



- For the low cost groups (triangles on left) there is a small increase in profitability
- For the high cost groups (red lines on right) there is a large decrease in profitability

Part 2: Does Formulary Design Track the Incentive?

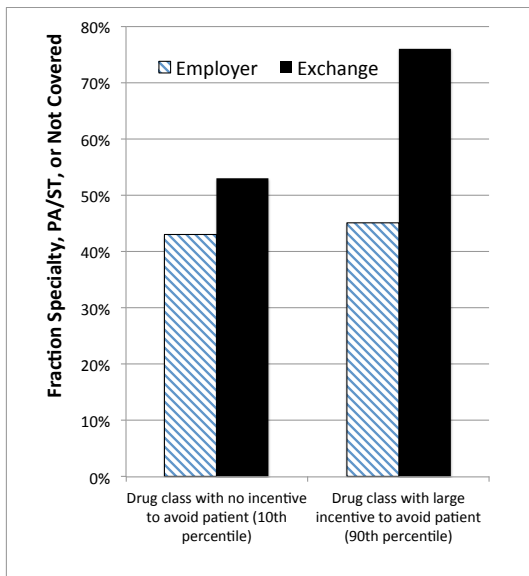
Data

- Question: Are drugs that predict unprofitable patients covered ungenerously?
 - If an unprofitable group of consumers uses a cheap drug, an insurer will want to inefficiently distort coverage to be poor for that cheap drug
- Unit of analysis: drug class \times plan, because class captures the set of substitutable therapies.
- We require data on formulary restrictiveness by drug class
 - Formulary tiering for the universe of state and federal exchanges in 2015 from MMIT

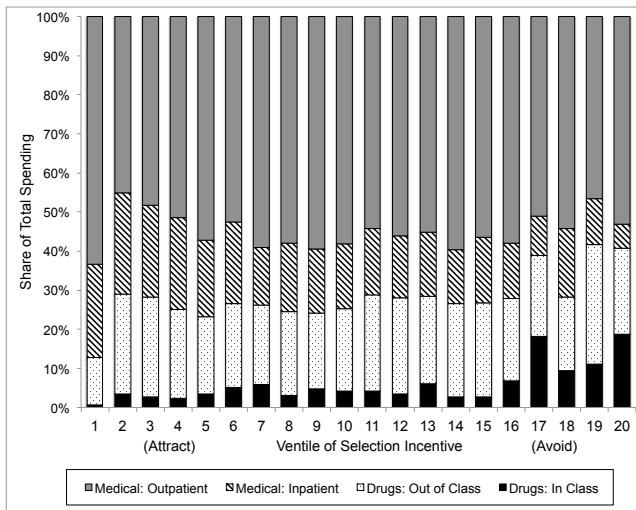
Restrictiveness - Measure

- To measure restrictiveness we use harmonized tiers
 1. Generic Preferred
 2. Generic
 3. Preferred
 4. Covered/ Non-preferred Brand
 5. **Specialty**
 6. **Not listed**
 7. **Medical**
 8. **Prior authorization/Step therapy**
 9. **Not covered**
- We draw a line below “covered” and call tiers below the line “restrictive” and tiers above the line “non-restrictive”
- For each REDBOOK drug class, we define formulary restrictiveness as the % of drugs in the class on a restrictive tier

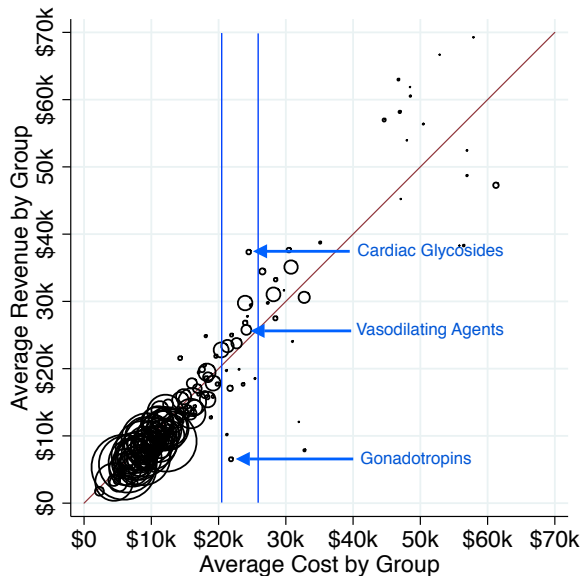
Fact 5: Drug Predicting Unprofitable Patients Are Restricted



Fact 6: Drugs are a small share of spending even among groups whose drug use flags them as unprofitable. Indicates sophistication.



What Are Insurers Responding To? Not Costs!



Already controlling for drug class FEs, but perhaps HIX plans are *differentially* attentive to high cost consumers...

Look within vertical slices: Equally costly but differentially profitable

Indicates sophistication

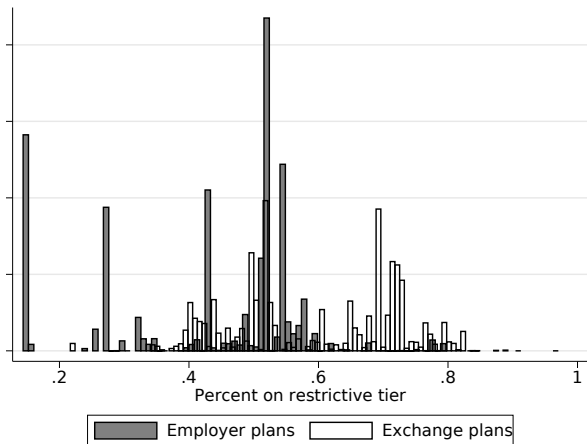
Concluding Observations

1. Risk adjustment + reinsurance do a good job overall in neutralizing screening incentives. *But some very unprofitable outliers exist*
2. Reinsurance important in reducing the incentive to avoid high-cost types
3. This is not about plans nudging consumers to lower cost or generic options
4. Both cost-sharing and utilization management are margins of distortion
5. It is not high drug costs that determine high cost sharing. It is drugs that are unprofitable, net of RA/Reinsurance. We see plans making it hard/expensive to access even cheap drugs.
6. EHB cannot solve this problem. Too many hard to measure and hard to regulate plan features (prior-authorization, requirement to use in-house mail-in pharmacy)
7. Problems may be solveable with fairly minor reforms
 - Incorporating diagnoses X drug utilization into RA scheme; currently considered

APPENDIX

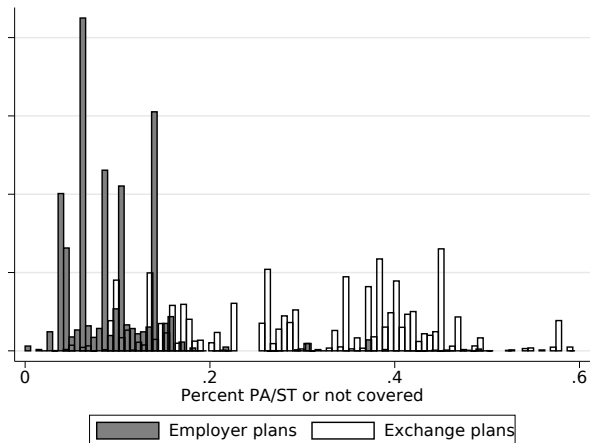
Fact 5: HIX Formularies More Restrictive on Price and Non-Price

Figure : Frequency of Assignment to Restrictive Tier



Fact 5: HIX Formularies More Restrictive on Price and Non-Price

Figure : Frequency of Non-price Hurdles to Access



Selection Incentives - Top Drug Classes

Here limiting to classes with > 0.01% takeup

Class (1)	Most Used Drug in Class (2)	Conditions Treated by Most Used Drug (3)	Net Loss: Cost - Revenue (4)
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Largest Incentives to Avoid

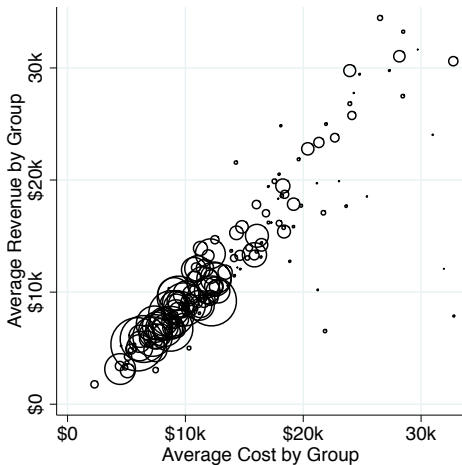
Gonadotropins, NEC	Ovidrel	infertility in women	\$15,326
Biological Response Modifiers	Copaxone	relapsing multiple sclerosis	\$13,977
Opiate Antagonists, NEC	naltrexone	substance abuse disorders	\$5,977
Ovulation Stimulants, NEC	clomiphene citrate	infertility in women	\$5,304
Pituitary Hormones, NEC	desmopressin	diabetes insip., hemophilia A	\$4,633
Vitamin A and Derivatives, NEC	Claravis	severe nodular acne	\$4,428
Analg/Antipyr, Opiate Agonists	hydrocodone-acetamin.	moderate to severe pain nerve pain; fibromyalgia;	\$3,001
CNS Agents, Misc.	Lyrica	seizure poisonings; pre-surgical preparations	\$2,965
Mydriatics EENT, NEC	atropine		\$2,877
Androgens and Comb, NEC	AndroGel	low testosterone	\$2,688

Selection Incentives - Top Drug Classes

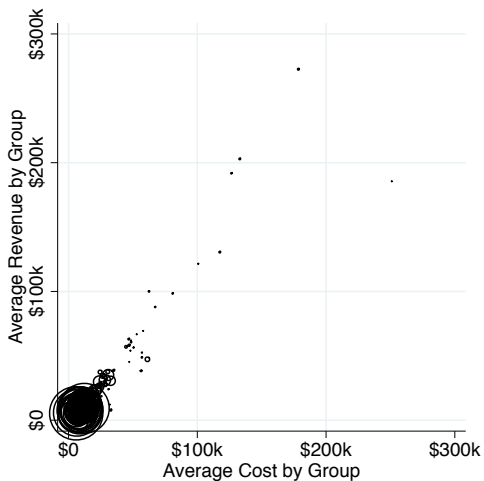
Largest Incentives to Attract

Antineoplastic Agents, NEC	methotrexate sodium	various cancers; various autoimmune diseases	-\$2,885
Multivit Prep, Multivit Plain	Folbic	vitamin deficiency	-\$3,058
Coag/Anticoag, Anticoagulants	warfarin	blood clots; stroke prevention	-\$4,328
Cholelitholytic Agents, NEC	ursodiol	primary biliary cirrhosis; gallstones	-\$4,751
Diuretics, Loop Diuretics	furosemide	edema due to heart, liver, kidney disease; high blood pressure	-\$5,813
Ammonia Detoxicants, NEC	lactulose	complications of liver disease	-\$7,181
Anticonv, Hydantoin Derivative	phenytoin sodium ext.	seizures; heart arrhythmias; neuropathic pain	-\$7,275
Cardiac, Antiarrhythmic Agents	amiodarone	heart arrhythmias	-\$7,942
Digestants and Comb, NEC	Creon	chronic pancreatitis; cystic fibrosis; pancreatic cancer	-\$12,350
Cardiac, Cardiac Glycosides	Digox	heart arrhythmias; heart failure	-\$12,857

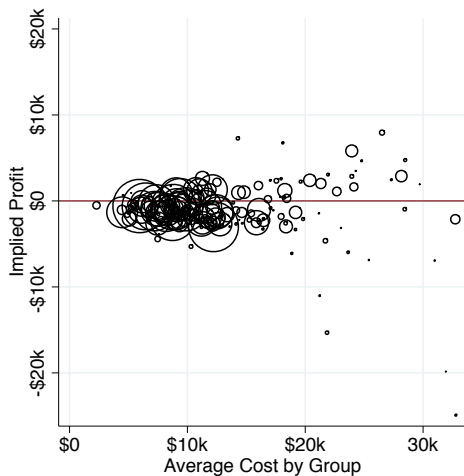
Fact 1: For most classes, selection incentives neutralized [▶ Back](#)



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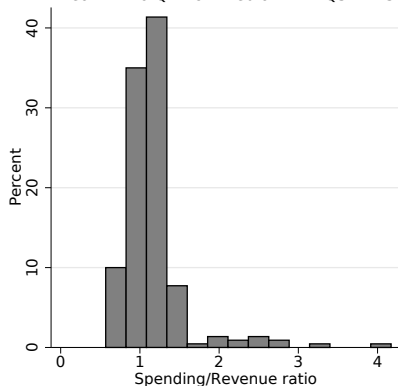
Fact 3: No overall correlation between profitability and cost [▶ Back](#)



Most classes are clustered very near neutral

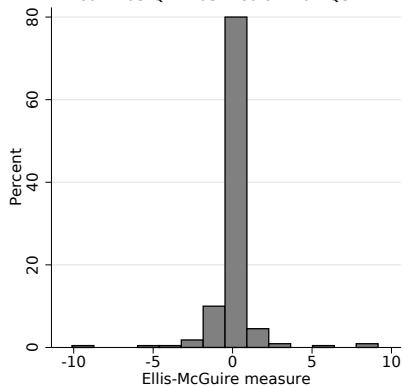
Ratio Measure

Mean: 1.16 Q1: .92 Median: 1.1 Q3: 1.25



Ellis-McGuire Measure

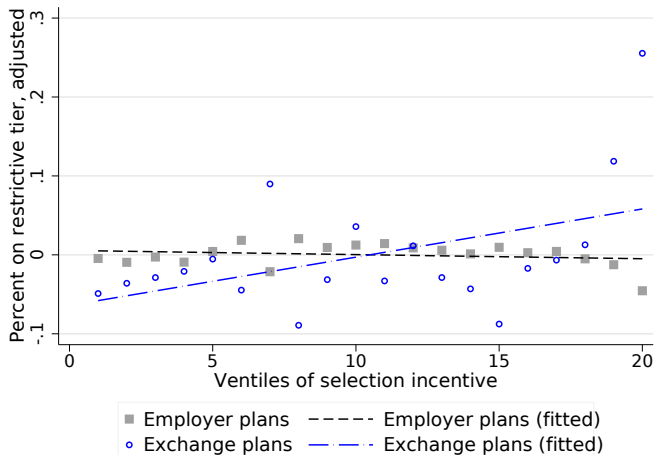
Mean: .05 Q1: -.05 Median: .07 Q3: .22



Residuals: Difference Measure

Residuals from $Y_{jc} = \gamma_c + \alpha_j + \epsilon_{cj}$

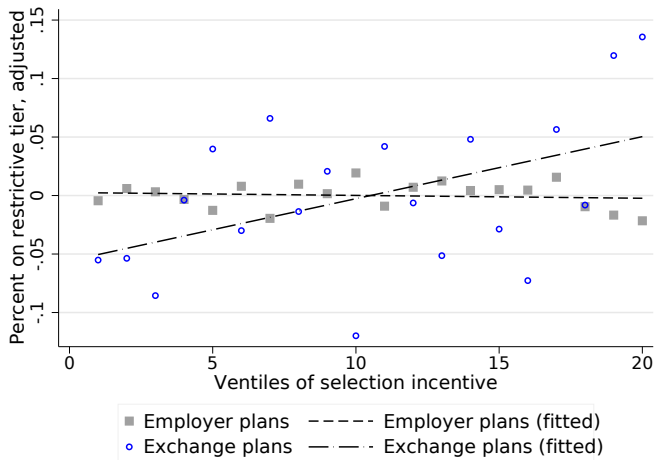
Grouping classes into 20 bins by selection incentive (Difference). [▶ back](#)



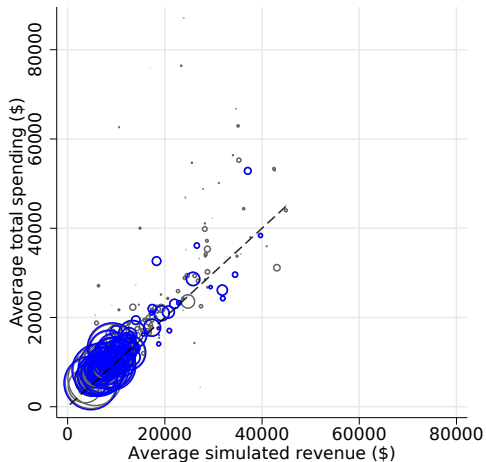
Residuals: Ratio Measure

Residuals from $Y_{jc} = \gamma_c + \alpha_j + \epsilon_{cj}$

Grouping classes into 20 bins by selection incentive (Ratio). [▶ back](#)



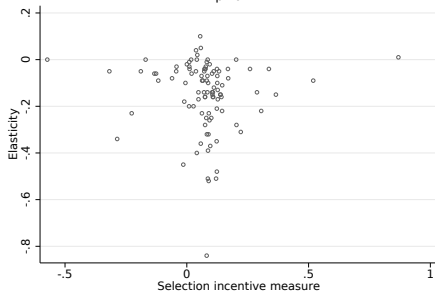
Moral Hazard? We recode data to be matchable to Einav, Finkelstein, and Polyakova (2016)

[▶ Back](#)

Moral Hazard? No: Selection Incentive Uncorrelated with Elasticity

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Ellis McGuire Incentive

 $p=0.71$ 

Ratio Incentive

 $p=0.57$ 