BERKELEY SODA TAX & IMPLICATIONS FOR RETAIL

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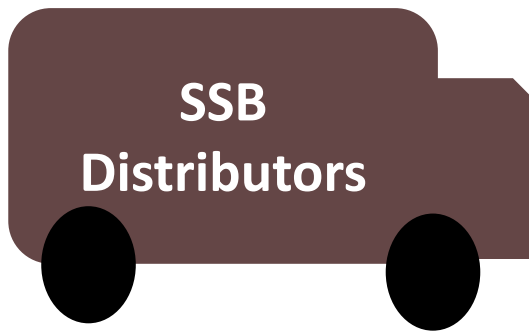
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BERKELEY'S SSB EXCISE TAX

SSB Distributors

$0.01 /oz

- **Regular soda (not diet)**
- **Sweetened tea & coffee**
- **"Fruit" drinks**
- **Sports drinks**
- **Energy drinks**

- **Milks**
- **100% juice**
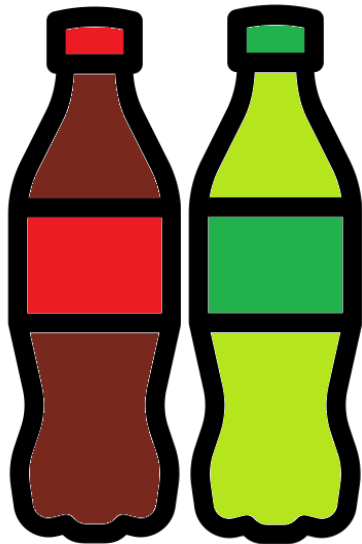- **Medical beverages**
- **Alcohol**

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EVALUATION

1. Pass-through to higher SSB retail prices
2. Impacts on SSB consumption
3. **Implementation evaluation → retailer response & impact**

PASS-THROUGH

Soda: ~70% of the tax

SSBs: ~50% of the tax

How Berkeley's 'soda tax' changed the drinking habits of low-income residents

% change in consumption five months after passage of the tax

■ Berkeley   ■ Oakland/San Francisco

Total SSBs

-21%   4%

Water   63%   19%

SAN FRANCISCO, OAKLAND, & ALBANY WILL VOTE ON "SODA TAXES" IN NOVEMBER

Anti-tax messaging

IMPLEMENTATION EVALUATION

- Key informant interviews: Summer 2015-Summer 2016

- **Retailer pass-through:**
  - If and how they are making up for any added costs from the tax
  - Probes: taxed & untaxed beverages, non-beverages items likes food

- Recorded and coded in NVivo10

RETAILER SAMPLE

Retailers	N
Supermarkets (chain or specialty)	4
Small grocery stores	11
Liquor stores	2
Convenience stores	5
Independent restaurants/cafes	9
Drugstore	1
UC Berkeley dining	1
Total retailers	33

RETAILER DESCRIPTION OF PASS-THROUGH

	N
Raised prices of non-beverages items like food	0
Raised the price of taxed beverages	24
Also raised price of diet soda	3
Raised price of all beverages	2
Did not raise any prices	9
Total retailers	33

→ **Not being treated as a "grocery tax" in Berkeley**

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BUSINESS IMPACT:
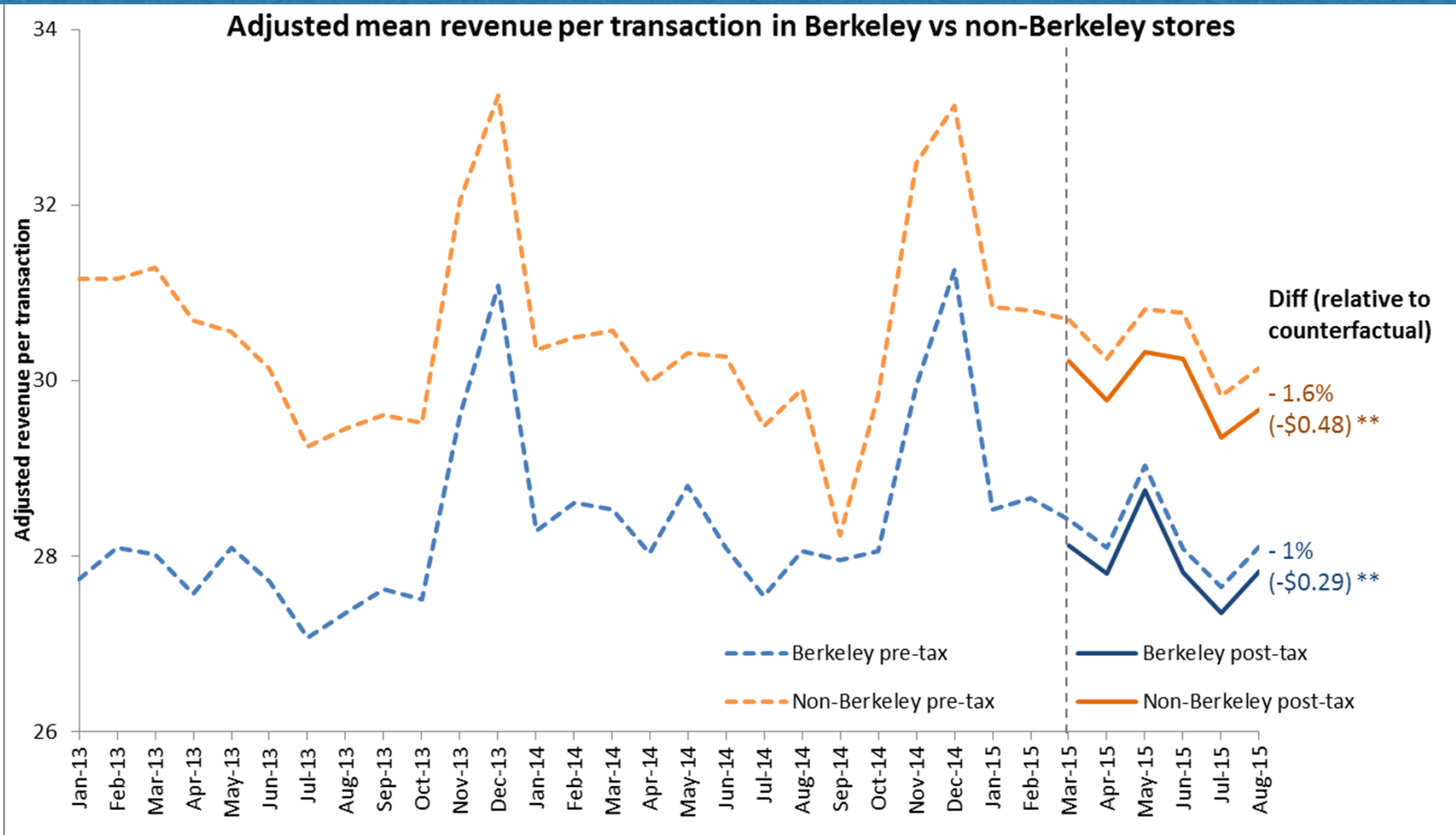# DO CUSTOMERS SPEND LESS AT STORES BECAUSE OF THE TAX?

PHI-UNC study using retailer data
Shared by Shu Wen Ng

- **2 large grocery chains, Jan 2013-Aug 2015 (to date)**
  - 3 stores in Berkeley
  - 6 stores outside Berkeley in Bay Area
  - 3 'zones' of comparison stores (base on distance to Berkeley)

- **UPC & Customer Transaction data from each store**
  - Date, UPC scanned, units sold, price paid
  - Jan 2013-Aug 2015: **>100 million UPC transactions**

- **Store-day level analysis** (N= 9 stores X ~900 days; >8000)
  - Outcome: Mean store revenue $ per transaction (mean $ paid by customers per transaction)
  - OLS regression controlling for:
    - storeid (s): store time invariant factors (e.g., size, location)
    - i.month##i.storeid & i.year##i.storeid: store time varying factors
    - posttax##i.storeid
    - day of week (d), Holiday (d) & Holiday eve (d)
    - Correct SE by clustering at City level
  - Predict post-tax values based on posttax=1 vs 'counterfactual'(if tax did not occur based on pre-tax estimates, setting posttax=0)
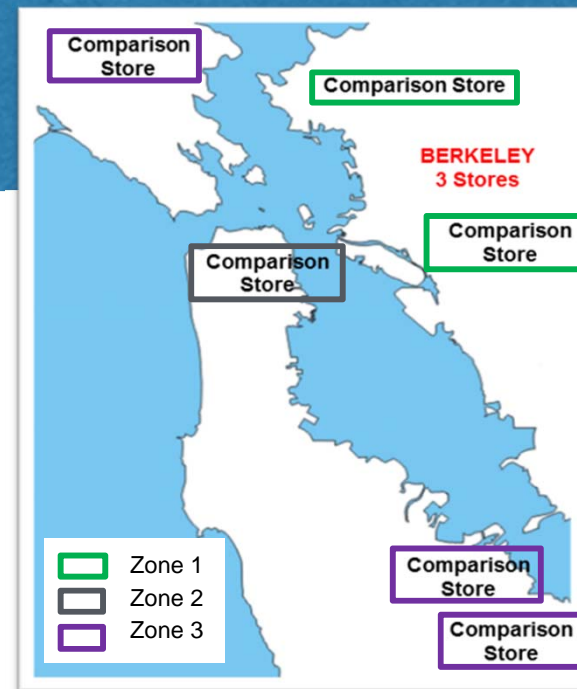
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Adjusted mean revenue per transaction in Berkeley vs. Non-Berkeley Stores

Adjusted mean revenue per transaction in Berkeley vs non-Berkeley stores

Diff (relative to counterfactual)

- 1.6% (-$0.48) **

- 1% (-$0.29) **

- - - Berkeley pre-tax
- - - Non-Berkeley pre-tax
——— Berkeley post-tax
——— Non-Berkeley post-tax

6 month average difference (compared to CF)	Berkeley	NB	NB Zone 1	NB Zone 2	NB Zone 3
Absolute ($/transaction)	-$0.29	-$0.48	-$0.08	-$0.28	-$0.81
Relative (% of CF)	-1.0%	-1.6%	-0.3%	-0.8%	-2.6%

All bold values are statistically sig at p<0.001

- **Statistically significant reduction in revenue per transaction in both Berkeley & non-Berkeley stores**
- **Reduction in Berkeley store less than reduction in non-Berkeley store (by $0.19/transaction) suggests that tax did not affect revenue.**

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