BERKELEY SODA TAX & IMPLICATIONS FOR RETAIL

Jennifer Falbe, ScD, MPH
Kristine Madsen, MD, MPH

Healthy Food Retail Working Group
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BERKELEY’S SSB EXCISE TAX

- Regular soda (not diet)
- Sweetened tea & coffee
- “Fruit” drinks
- Sports drinks
- Energy drinks

$0.01 /oz

SSB Distributors

- Milks
- 100% juice
- Medical beverages
- Alcohol
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

19% 63%

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

<table>
<thead>
<tr>
<th>Retailers</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supermarkets</strong> (chain or specialty)</td>
<td>4</td>
</tr>
<tr>
<td>Small grocery stores</td>
<td>11</td>
</tr>
<tr>
<td>Liquor stores</td>
<td>2</td>
</tr>
<tr>
<td>Convenience stores</td>
<td>5</td>
</tr>
<tr>
<td>Independent restaurants/cafes</td>
<td>9</td>
</tr>
<tr>
<td>Drugstore</td>
<td>1</td>
</tr>
<tr>
<td>UC Berkeley dining</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total retailers</strong></td>
<td>33</td>
</tr>
</tbody>
</table>
### Retailer Description of Pass-Through

<table>
<thead>
<tr>
<th>Description</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised prices of non-beverages items like food</td>
<td>0</td>
</tr>
<tr>
<td>Raised the price of taxed beverages</td>
<td>24</td>
</tr>
<tr>
<td>Also raised price of diet soda</td>
<td>3</td>
</tr>
<tr>
<td>Raised price of all beverages</td>
<td>2</td>
</tr>
<tr>
<td>Did not raise any prices</td>
<td>9</td>
</tr>
<tr>
<td>Total retailers</td>
<td>33</td>
</tr>
</tbody>
</table>

→ Not being treated as a “grocery tax” in Berkeley
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)
Adjusted mean revenue per transaction in Berkeley vs. Non-Berkeley Stores

- 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.

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

All bold values are statistically sig at p<0.001
ACKNOWLEDGEMENTS

- Lynn Silver & Suzanne Ryan-Ibarra (Public Health Institute)
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Contact: Jen Falbe, ScD, MPH | jfalbe@berkeley.edu