Fast Food Restaurant Taxes, Soda Taxes, and Weight Outcomes among U.S. Adults

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Background: Soda

• Link between state-level Soda Taxes and BMI
  – Weak among adults (Fletcher, Frisvold, and Tefft 2009)
  – NOT significant among adolescents (Powell, Chriqui, & Chaloupka 2009)

• No research examining state-level restaurant taxes and weight outcomes
Background: Restaurant

• Increase in the consumption of foods away from home (FAFH), food at full-service and fast food restaurants.

• Over 45% of household food budgets and over 6% of total household budgets are spent on FAFH (McGranahan 2008).

• Link between number of fast-food and full-service restaurants and adult obesity (Chou, Grossman, & Saffer 2004).
Purpose

To assess the potential of fast food restaurant and soda taxes as potential policy instruments to address the obesity epidemic among U.S. adults.
Definitions: Soda Tax

• Depending on the state definitions, taxes on sodas and other beverages are based on either the general sales tax or the food sales tax.

• General sales tax applies when “food” is defined to explicitly exclude items of interest.
  • E.g., KY Rev Stat Ann 139.485: “Food and food ingredients” are not taxable items; however, “food and food ingredients” shall not include...soft drinks.
    • In this example, food generally is not taxed but soft drinks are taxed at a rate of 6% (same as state sales tax).
2008 Soda Taxes in the U.S.

Pale yellow = 0%
Yellow = 1-3%
Orange = 4-5%
Red = 6-7%
Definitions: Restaurant Tax

• Taxes on restaurants and prepared food bought for home consumption (or on-premises consumption) apply based on the general state sales tax rates and not based on the food tax rates.
  • And, thus, these taxes are higher than tax rates applied to food items generally.

• Restaurant taxes do not differ based on full-service, fast food, carryout or drive-through/quick service.

• 47 states tax restaurant/prepared food sales based on primary legal research conducted by the Bridging the Gap Program.
Definitions: Restaurant Tax Cont.

• 14* states specifically mention restaurants in their definition of taxable items
  • *For example, AZ Rev. Stat. specifically defines restaurants as a type of establishment subject to transaction privilege taxes based on proceeds from gross receipts*

• 34* states specifically mention prepared food or food purchased away from home in their definition of taxable items
  • *For example, ME Rev Stat Ann tit. 36 & 1752: “Prepared food means...(c) all food and drinks sold from an establishment whose sales of food and drinks that are prepared by the retailer account for more than 75% of the establishment’s gross receipts”*

• 2* states and DC specifically tax restaurant sales
  • *For example, D.C. CODE ANN. 47-2001(g-1): “Food or drink for immediate consumption includes...all food or drink, served by, or sold in or by, restaurants....”*

*Data are not mutually exclusive*
2008 Restaurant Taxes in the U.S.

- Pale yellow = 0%
- Yellow = 1-4%
- Orange = 5-7%
- Red = 8-10%

bridging the gap
Data

• (BRFSS) Behavioral Risk Factor Surveillance System
  – Nationally representative sample of adults
  – Pooled cross-sections 1997-2008
  – Body mass index (BMI) and obesity (BMI≥30)

• State Tax Data
  – Our own data file containing specific tax amount for each state for each year
  – Fast food restaurant and soda taxes
Sample

- Final N=1,948,833

- Exclusion Criteria:
  - Currently pregnant
  - Younger than 20 years of age
  - Older than 64 years of age
  - Missing on height weight or control variables
Analysis

• **Models**
  – Logistic for probability of obese
  – OLS for BMI

• weighted using the BRFSS sampling weights

• State level clustering

• **Unobserved trends**
  – year fixed effects
  – state median household income control

• **Additional Controls**
  – individual demographics and ses, state cigarette tax
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<td>1.07 (0.95 – 1.19)</td>
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Limitations

- only examine state-level taxes, not including county or local taxes
- Models do not include information about consumption
- stability of the elasticity
  - Reduced by % of population with significant effect
  - Restaurant taxes are somewhat stable across time
Conclusions

• Current tax rates are too small to generate substantial changes in consumption or weight outcomes

• Restaurant-specific taxes hold more potential than soda

• Restaurants may be a good point of intervention for the obesity epidemic