Public Health & Revenue Implications of a Sugar Sweetened Beverage Tax in Vermont

Vermont House Ways and Means Committee
March 11, 2015

Frank J. Chaloupka
Distinguished Professor of Economics and Public Health
University of Illinois at Chicago, Chicago IL
Overview

• Economic rationales for SSB taxation
• Experiences with tobacco taxation
• Impact of food taxes/prices on consumption and consequences
• Sugar-sweetened beverage taxation
• Oppositional arguments – myths & facts
Rationale for SSB Tax

• **Efficient revenue generation**
  – Considerable revenue potential
  – US Estimates suggest that 1¢ per ounce tax on SSBs would generate nearly $13.5 billion nationally

• **Promote public health**
  – Growing evidence that raising price of unhealthy foods/beverages would reduce consumption, promote healthier eating, and improve weight outcomes

• **Cover the external costs of obesity**
  – In US, health care costs from treating obesity estimated at $147-210 billion, with about half covered by public insurance programs
Impact of Taxes & Prices on Tobacco Use
Prices and Tobacco Use

• **Increases in tobacco product prices:**
  – Induce current users to try to quit
    • Many will be successful in long term
  – Keep former users from restarting
  – Prevent potential users from starting
    • Particularly effective in preventing transition from experimentation to regular use
  – Reduce consumption among those who continue to use
Cigarette Prices and Cigarette Sales
Vermont, FY1970-2014

Source: *Tax Burden on Tobacco*, 2014, and author’s calculations
Cigarette Prices & Adult Smoking Prevalence
Vermont, 1995-2010

Prevalence

Year

Prevalence

Price (Jan. 2015 dollars)


$2.50 $3.00 $3.50 $4.00 $4.50 $5.00 $5.50 $6.00 $6.50 $7.00 $7.50

Source: Tax Burden on Tobacco, 2014, BRFSS, and author’s calculations
Cigarette Prices and Cessation
US States & DC, 2009

\[ y = 0.028x + 43.08 \]
\[ R^2 = 0.371 \]

Source: BRFSS, *Tax Burden on Tobacco*, 2010, and author’s calculations
Source: YRBS, *Tax Burden on Tobacco*, 2010, and author’s calculations
Cigarette Price & Youth Smoking Prevalence 
Vermont, 1993-2011

Source: Tax Burden on Tobacco, 2014, YRBS, and author’s calculations
Taxes, Prices and Health
US, 1980-2005

Medscape

Cigarettes per adult per day

Lung cancer death rates per 100,000 (divided by 4): men age 35–44

Relative price


Number per adult per day and death rates

Source: Nat Rev Cancer © 2009 Nature Publishing Group
Impact of Food Prices on Diet and Weight
Selected Food Price & Adult Weight Trends
1961-2009, Inflation Adjusted

Selected Food Price & Youth Weight Trends
1971-2009, Inflation Adjusted

Selected Food Price & Adult Weight Trends
1961-2009, Inflation Adjusted

Selected Food Price & Youth Weight Trends
1971-2009, Inflation Adjusted

Food Prices and Consumption

• Estimates from recent economic research show significant effects of food & beverage prices on consumption

• 10% price increase reduces:
  • Sugar sweetened beverage consumption by 12.1%
  • Fast food consumption by 5.2%
  • Vegetable consumption by 4.8%
  • Fruit consumption by 4.9%

Source: Powell, et al., 2013
Food Prices and Weight Outcomes

Relatively limited research with increasingly strong findings to date on impact of food and beverage prices and weight outcomes:

• Higher sugary food prices reduce prevalence of overweight/obesity among adults (Miljkovic et al., 2008)

• 10% higher fast food prices would reduce prevalence of adolescent obesity by almost 6% (Powell, et al., 2007)

• Higher soda sales taxes associated with reduced weight gain, particularly for overweight kids (Sturm, et al., 2010)

• Higher carbonated beverage prices significantly related to lower BMI in children (Wendt and Todd, 2011)

Source: Powell et al., 2013
Food Prices and Weight Outcomes

The weight of the evidence increasingly indicates that changes in relative prices for healthier and less healthy foods will affect weight outcomes, with greater impact on:

• Lower income, less educated populations
• Younger populations
• Populations at greater risk for obesity

Source: Powell, et al., 2013
Sugar Sweetened Beverage Taxes
Why Sugar-Sweetened Beverage Taxes?

• Link to obesity
  • Several meta-analyses conclude that increased SSB consumption causes increased weight, obesity
  • Increased calories from SSBs not offset by reductions in calories from other sources

• Other health consequences
  • type 2 diabetes, lower bone density, dental problems, headaches, anxiety and sleep disorders
Soda Consumption & Obesity
California Counties, 2005

% Overweight Adults vs % Adults Drinking One or More Sodas per Day

\[ y = 16.44 \ln(x) + 6.114 \]
\[ R^2 = 0.665 \]

Source: Babey, et al., 2009 and authors' calculations.
Carbonated Beverage Prices & Youth Obesity
1995-2009, Inflation Adjusted

Source: BLS; YRBS
States with Sales Taxes on Regular Soda
(as of January 1, 2014)

Sales Tax Rates for Soda (%)

- 0 (16 States)
- > 0 - 4 (9 States)
- > 4 - 6 (14 States & the District of Columbia)
- > 6 - < 7 (7 States)
- 7 (4 States)

Notes:
Does not include rates for 3 states with mandatory statewide local sales taxes: CA (1%), UT (1.25%), and VA (1%).

The following States also impose additional, non-sales taxes on regular soda: AL, AR, RI, TN, VA, WA, WV.

Data Source: Bridging the Gap Program, University of Illinois at Chicago, 2014
Best Practices in SSB Taxation

• From a public health perspective, specific excise tax on SSBs only preferable to sales tax or ad valorem excise tax or to a broader beverage tax that includes low/no-calorie options
  • More apparent to consumer
  • Easier administratively
  • Reduces incentives for switching to cheaper brands, larger quantities
  • Revenues more stable, not subject to industry price manipulation
  • Greater impact on consumption; more likely impact on weight outcomes
  • Disadvantage: need to be adjusted for inflation

Source: Chriqui, et al., 2013
SSB Taxation & Revenues

- Revenue generating potential of beverage tax is considerable
  - Tax of two cents per ounce could generate:
    - $33.8 million in Vermont if on SSBs only
  - Earmarking tax revenues for obesity prevention efforts would add to impact of tax
Oppositional Arguments
Myths & Facts
Impact on Jobs

• SSB tax will lead to decreased consumption of beverages
  – Small loss of jobs in beverage sector

• Money not spent on beverages will be spent on other goods and services
  – Gains in jobs in other sectors

• Increase in tax revenues will be spent by government
  – Additional job gains in other sectors

• Small net increase in jobs likely
Impact on Jobs

• Our recent study (Powell et al., AJPH, 2014):
  – Assessed impact of 20% SSB tax on employment in California and Illinois
  – Assumed tax fully passed on to consumers

• California
  – Net employment increase of 6,252 jobs
  – 0.03% increase in employment

• Illinois
  – Net employment increase of 4,509 jobs
  – 0.06% increase in employment

• Similar small net increase in jobs likely in other states
Impact on Businesses

• Argument that SSB taxes will harm convenience stores

• Similar arguments made for tobacco taxes
  – Conducted analysis of convenience stores (convenience only, gas stations, both), by state, 1997-2009
  – State cigarette tax rates and smoke-free policies
  – Controlled for state economic conditions
  – Found that higher tobacco taxes associated with more convenience stores
    • Consumers buy other products
    • Overshifting of taxes
Impact on the Poor

• Greater price sensitivity of poor – relatively large reductions in consumption among lowest income populations, small reductions among higher income populations

• Health benefits that result from tax increase are progressive

• Use of tax revenues for obesity prevention, health promotion, and/or other programs targeting the poor offsets financial impact
Tax Avoidance

• Some tax avoidance likely for consumers near border, but not enough to offset the public health and revenue impact of tax
  – 2011 survey of Vermont adults found that none surveyed who buy SSBs at gas stations or convenience stores and who do not regularly shop in New Hampshire would cross the border to buy SSBs to avoid the tax.

• Similar concerns about tobacco taxes greatly exaggerated
  – Real reductions in tobacco use
  – Real increases in tobacco tax revenues
Cigarette Tax per Pack and Cigarette Tax Revenues
Vermont, 1970-2014

Source: NHIS, *Tax Burden on Tobacco*, and author’s calculations
Tax Avoidance

• Revenue impact:
  – Last Vermont tax increase with no change in New Hampshire tax for one year
    • Vermont - July 1, 2006, increase from $1.19 to $1.79 per pack
    • New Hampshire's tax of 80 cents per pack
  – In the year following the increase:
    • Cigarette tax revenues rose by $13.4 million (28.3%) in Vermont
    • Cigarette tax revenues fell by $3.4 million (-2.4%) in New Hampshire
  – Claims of cross-border shopping and other tax avoidance efforts clearly exaggerated
    • NH saw revenues fall after reducing cigarette tax in July 2011
Summary
Summary

• Tobacco tax increases have significantly reduced tobacco use and its consequences

• Similar potential for using sugar sweetened beverage taxes to promote healthier eating and curb obesity
  – While generating considerable revenue for obesity prevention and health programs

• Economic counterarguments false or greatly overstated
Stay in Touch

Bridging the Gap

For more information, the upcoming Healthy Check-out Brief, and to sign up to receive news and updates, visit us at www.bridgingthegapresearch.org.

@BTGresearch

Frank J. Chaloupka

Email  fjc@uic.edu