

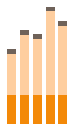
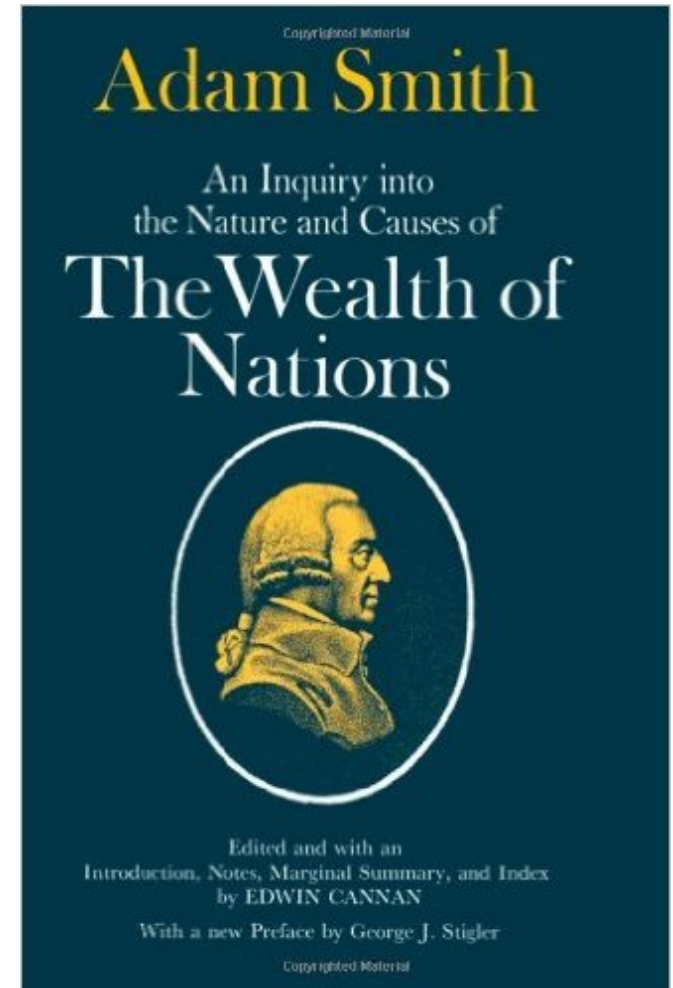
**tobacconomics**

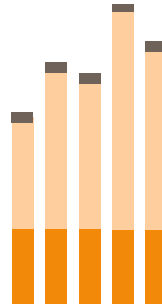
Economic Research Informing Tobacco Control Policy

# Alcohol and Sugary Drink Taxation

Frank J. Chaloupka, University of Illinois at Chicago  
Latin American Network on Tobacco Tax Policy for Tobacco Control  
7 February 2018, Washington, DC

**" Sugar, rum, and tobacco, are commodities which are no where necessaries of life, which are become objects of almost universal consumption, and which are therefore **extremely proper subjects of taxation.****

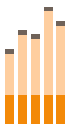




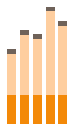
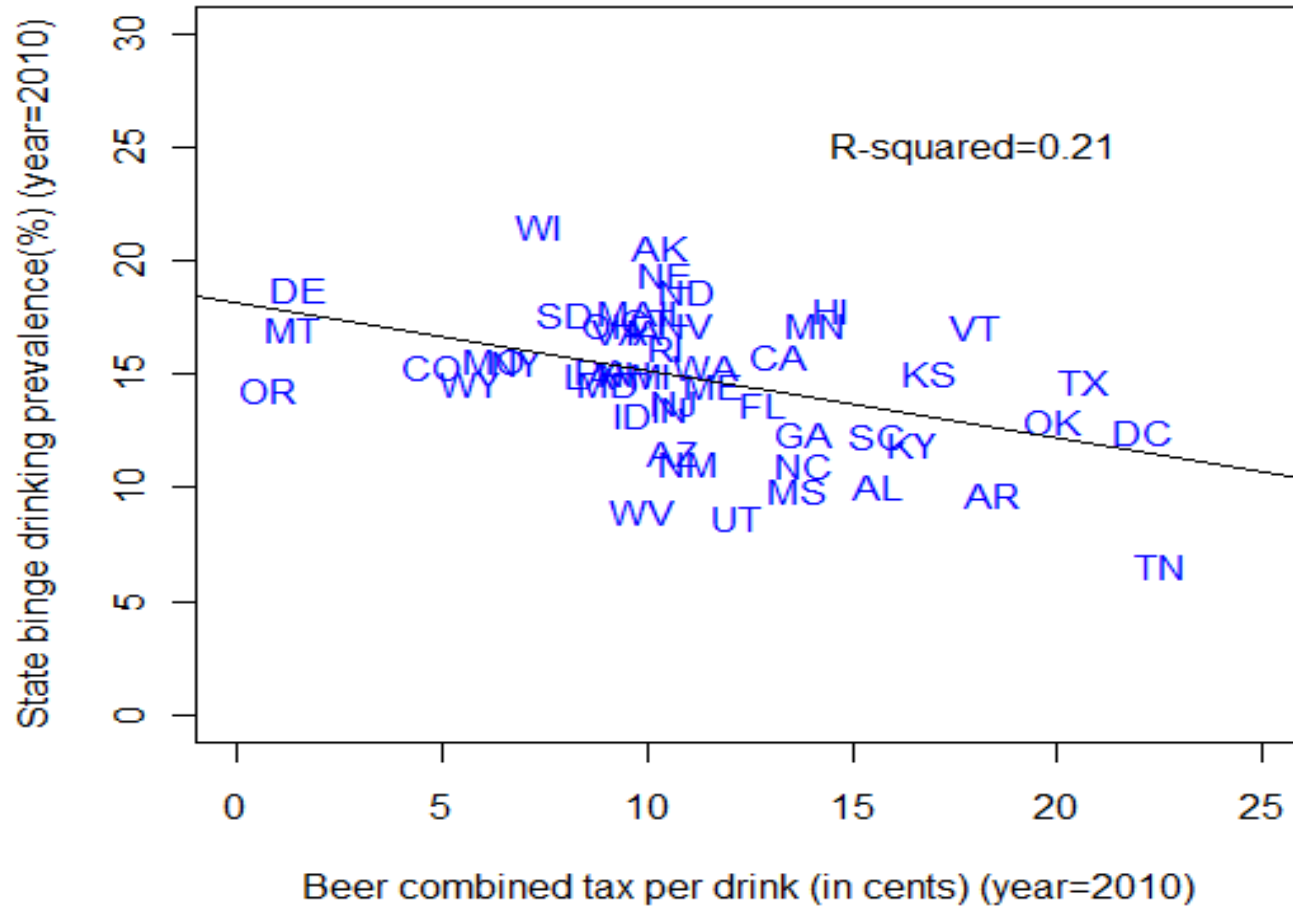
# **Taxes, Prices & Excessive Drinking**

# Alcohol Taxes, Prices & Drinking

- Economic research from HICs finds that higher prices for alcoholic beverages significantly reduce drinking:
  - 10 percent price increase would reduce:
    - Beer consumption by 4.6 to 5.0 percent
    - Wine consumption by 6.4 to 6.9 percent
    - Spirits consumption by 7.9 to 8.0 percent
    - Overall consumption by 5.1 to 7.7 percent
    - Heavy drinking by 2.8 percent
    - Generally larger effects on youth and young adults
    - Little evidence of substitution across beverage types

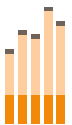


# Beer Tax and Binge Drinking Prevalence US States, 2010



# Alcohol Taxes, Prices & Drinking

- Limited research from LMICs produces generally consistent findings
  - 10 percent price increase would reduce:
    - Beer consumption by 5.0 percent
    - Wine and spirits consumption by 7.9 percent
    - Overall consumption by 6.4 percent



# Alcohol Taxes, Prices & Consequences

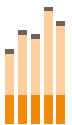
- Economic research from HICs shows that higher prices for alcoholic beverages significantly reduce:
  - Drinking and driving, traffic crashes, and motor-vehicle accident fatalities
  - Deaths from liver cirrhosis, acute alcohol poisoning, alcohol-related cancers, cardiovascular diseases, and other health consequences of excessive drinking
  - Violence (including spouse abuse, child abuse, and suicide) and other crime
  - Other consequences of drinking, including work-place accidents, teenage pregnancy, and incidence of sexually transmitted diseases



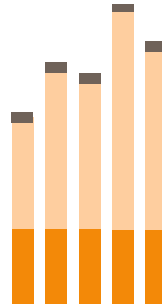
# Alcohol Taxes, Prices & Consequences

- Systematic review concluded:
  - Doubling of alcohol taxes would reduce:
    - Alcohol-related mortality by 35%
    - Traffic crash deaths by 11%
    - Sexually transmitted disease by 6%
    - Violence by 2%
    - Crime by 1.4%

Source: Wagenaar et al., 2010



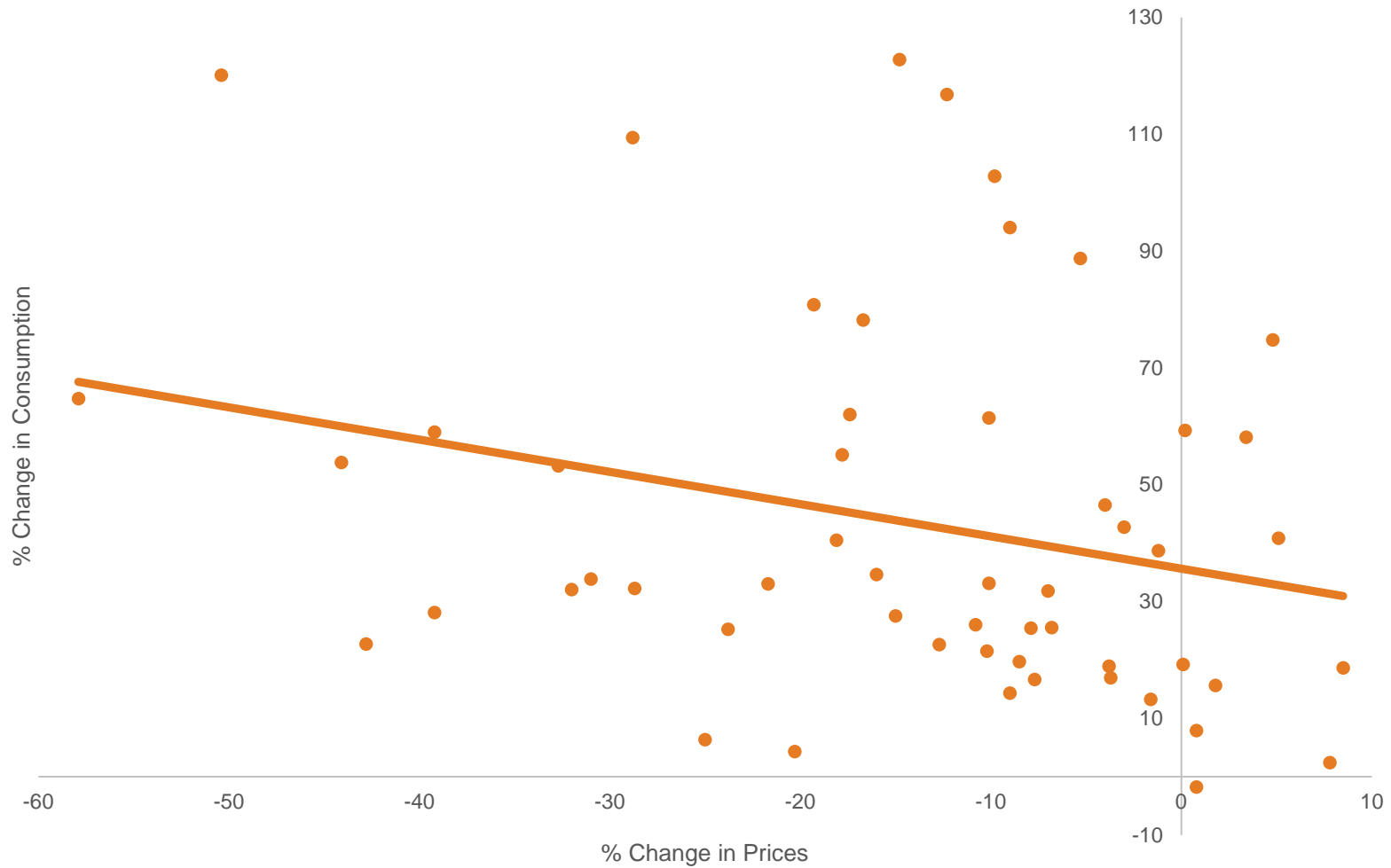




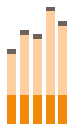
# Impact of Taxes & Prices on Diet & Weight

# Sweet & Savory Snack Prices & Consumption

## Percentage Change, 2000-2014, Selected Countries

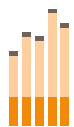
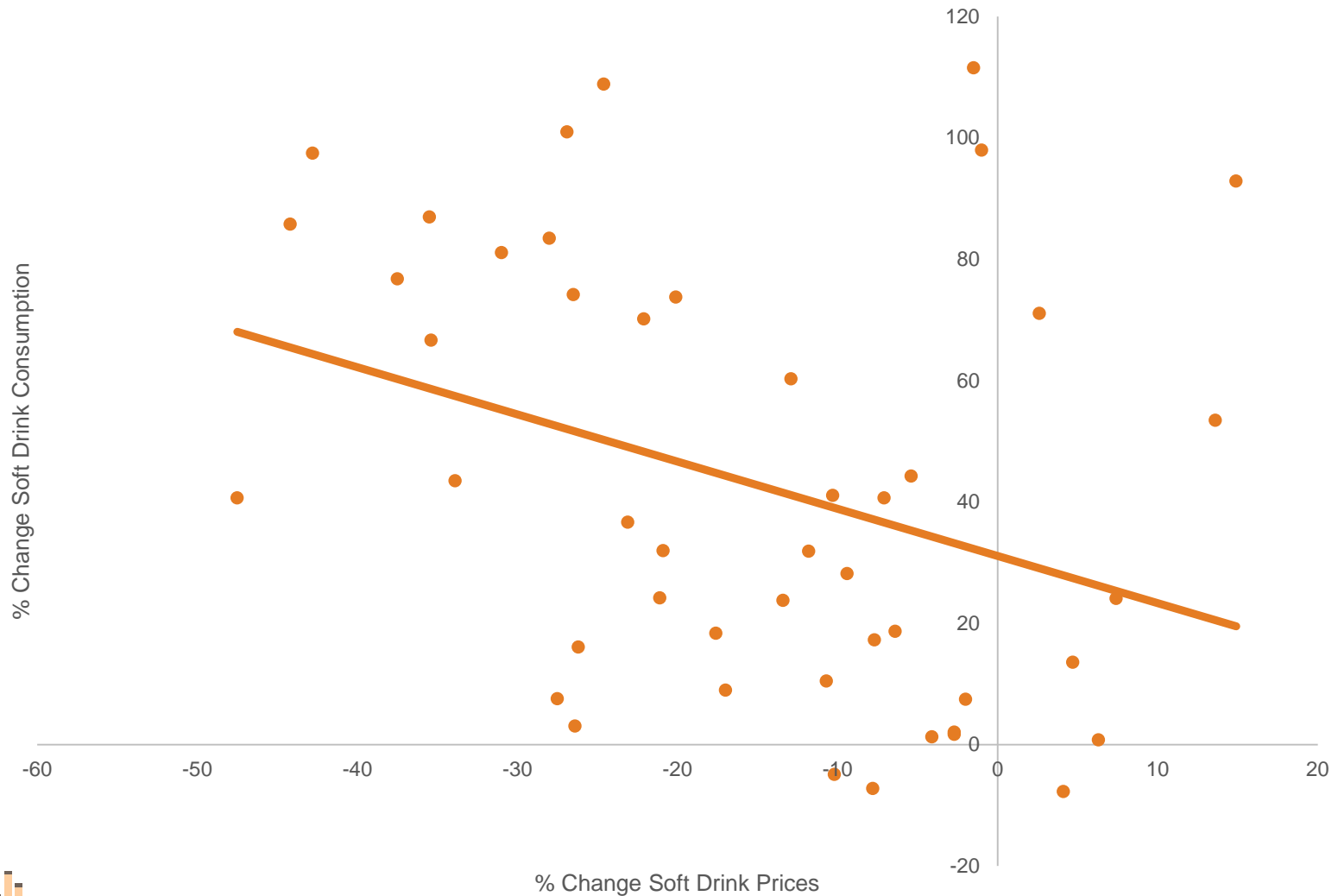


Source: Euromonitor, 2015, and author's calculations



# Soft Drink Prices & Consumption

## Percentage Change, 2000-2014, Selected Countries



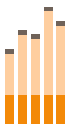
Source: Euromonitor, 2015, and author's calculations

# Prices and Food & Beverage Consumption

Our recent review concludes that a 10% increase in own-price reduces:

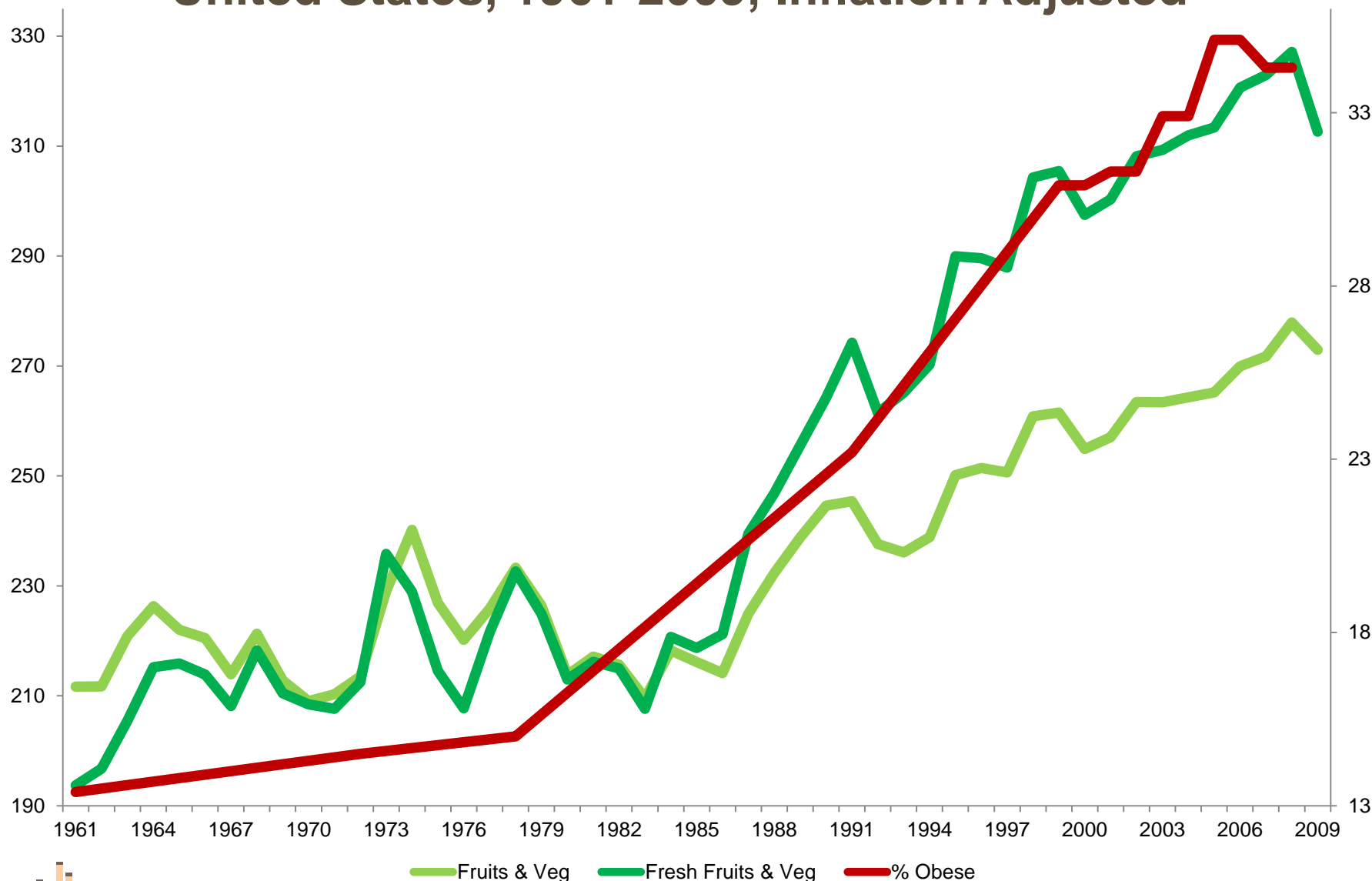
- Sugar-sweetened beverage consumption by 12.1%
- Fruit consumption by 4.9%
- Vegetable consumption by 4.8%
- Fast food consumption by 5.2%

Source: Powell, et al., 2013

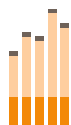


# Selected Food Price & Adult Weight Trends

## United States, 1961-2009, Inflation Adjusted

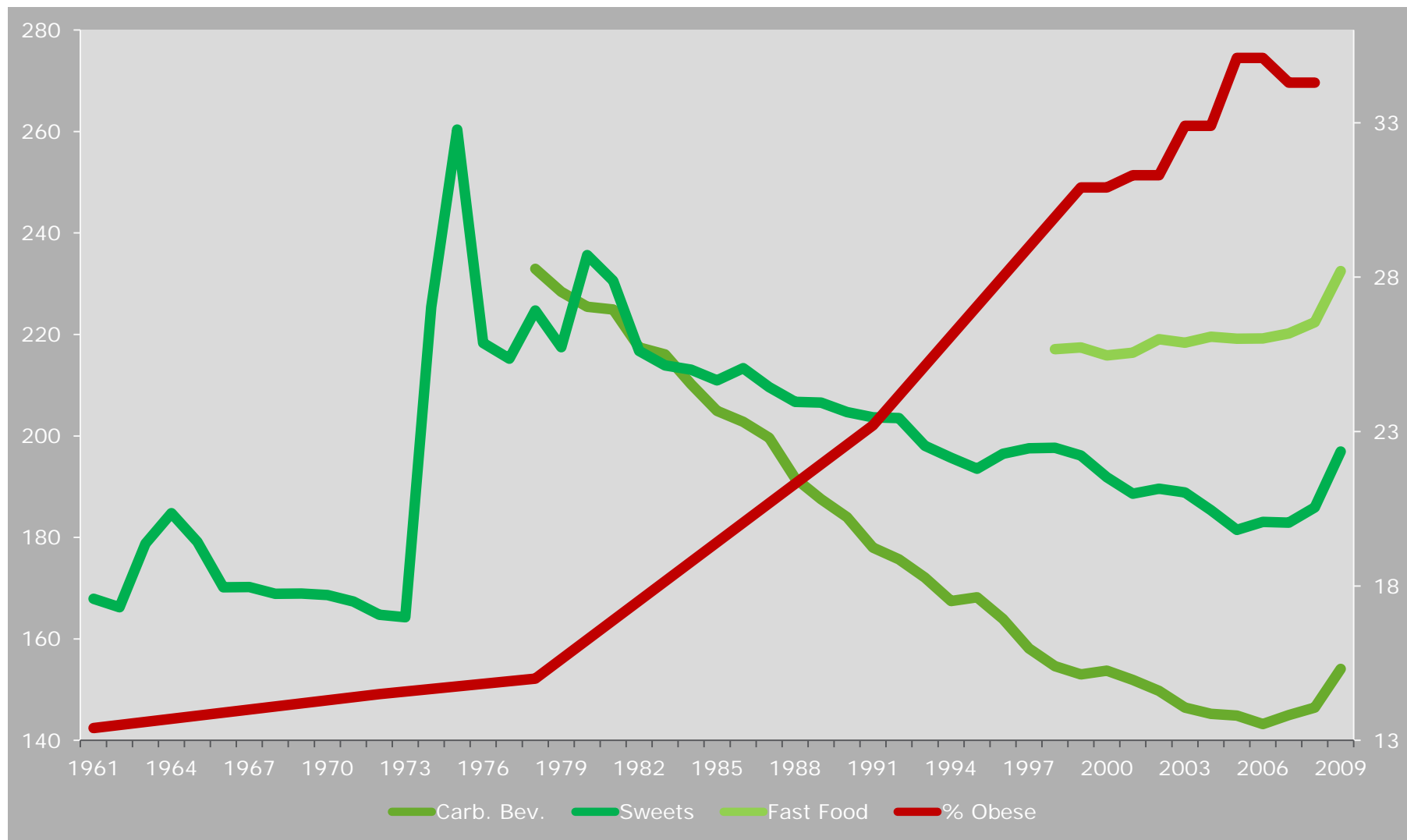


Source: BLS; NHES-I 1960-62; NHANES, 1971-74, 1976-80, 1988-94, 1999-2000, 2001-02, 2003-04, 2005-06, 2007-08

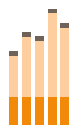


# Selected Food Price & Adult Weight Trends

## United States, 1961-2009, Inflation Adjusted



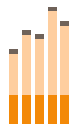
Source: BLS; NHES-I 1960-62; NHANES, 1971-74, 1976-80, 1988-94, 1999-2000, 2001-02, 2003-04, 2005-06, 2007-08



# Prices and Weight Outcomes

While mixed, 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

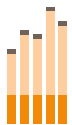


Source: Powell, et al., 2013

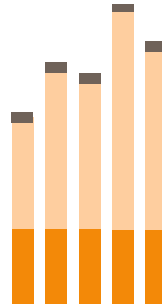
# Prices and Weight Outcomes

Subsidies alone likely to be counter-productive:

- Increase consumption of subsidized products
- Income effect leads to increased consumption of other products
- Net increase in caloric intake



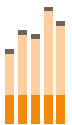




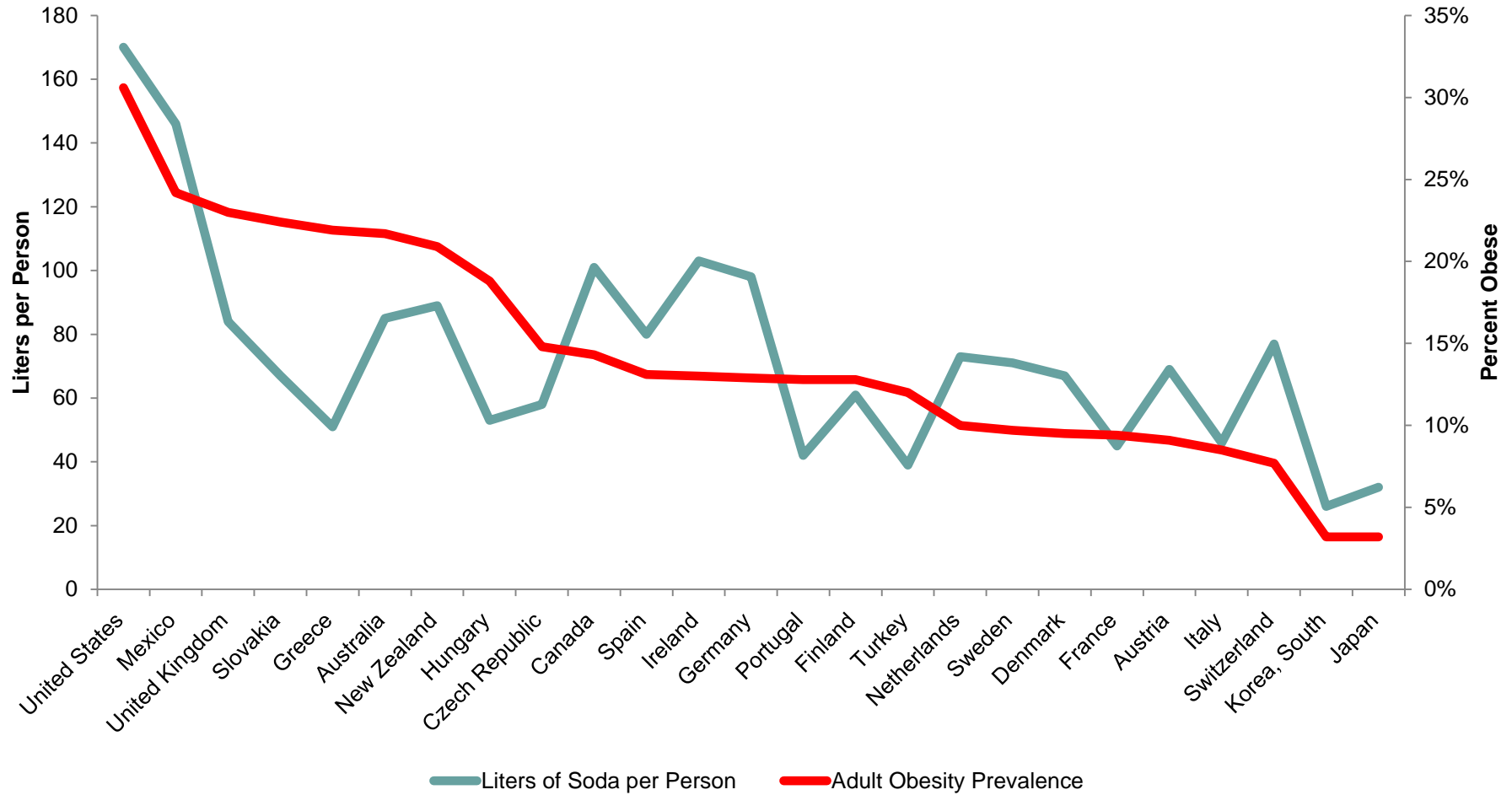
# Sugary Drink Taxes

# Rationale for Sugary Drink Taxes

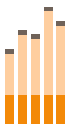
- Link to obesity
  - Several meta-analyses conclude that increased sugary beverage consumption causes increased weight, obesity
  - Increased calories from sugary drinks not offset by reductions in calories from other sources
- Other health consequences
  - Type 2 diabetes, lower bone density, dental problems, headaches, anxiety and sleep disorders



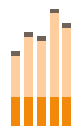
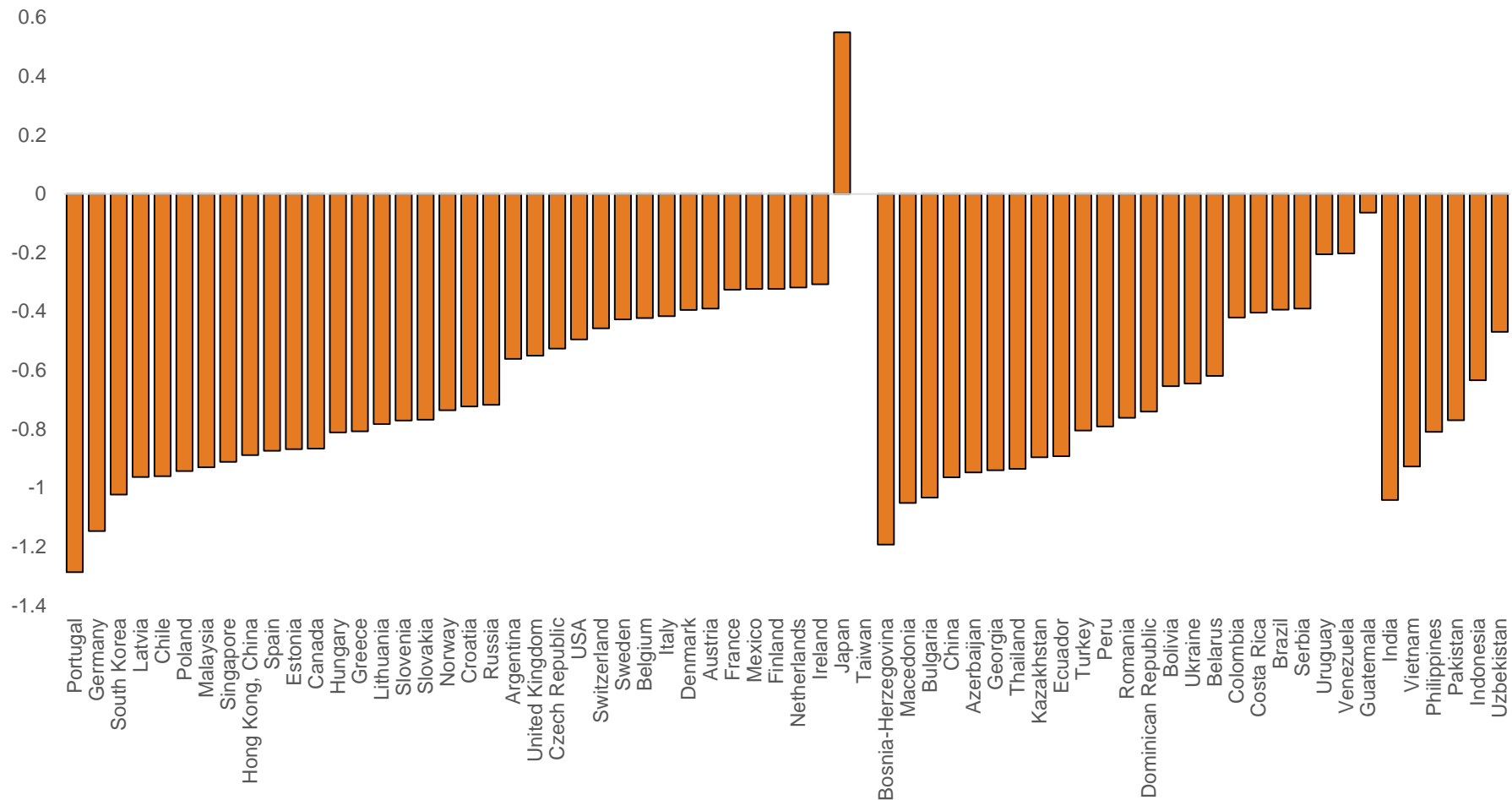
# Soda Consumption & Obesity Selected Countries



Source: Soda consumption from Euromonitor, 2011; Obesity prevalence from OECD Health Data, 2005



# Change in Soft Drink Affordability 2000-2013, Selected Countries

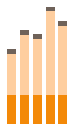


Source: Euromonitor, 2015, and author's calculations

# Sugary Drink Tax in Mexico

Evidence from Mexico's peso per liter sugary drink tax:

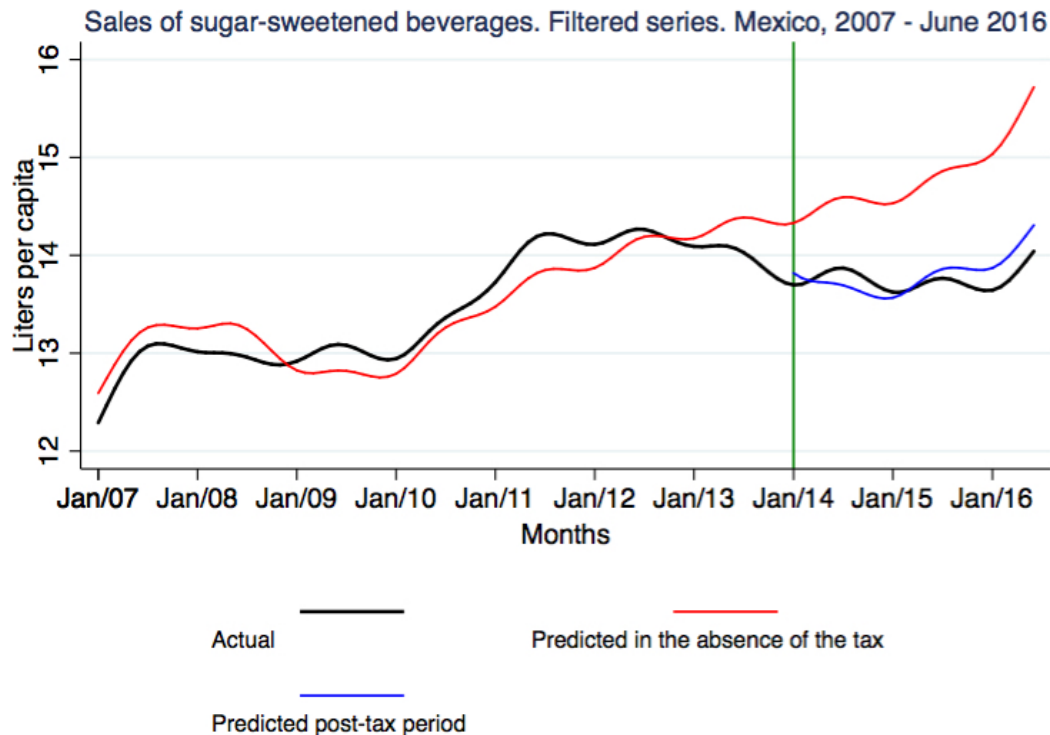
- Increased prices for taxed relative to non-taxed beverages
  - about 10% price increase
  - pass through varies by type, size, location



Sources: Colchero, et al., 2015

# Impact of Tax on Sales

## Mexico, 2007-2016

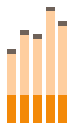


Impact on SSB sales consistent with reductions in purchases:

- 6% drop in 2014
- 8% drop in 2015
- 11% drop in first half of 2016

**5.2% increases in bottled water sales**

OLS- Adjusted for seasonality, the global indicator of the economic activity

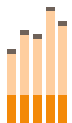
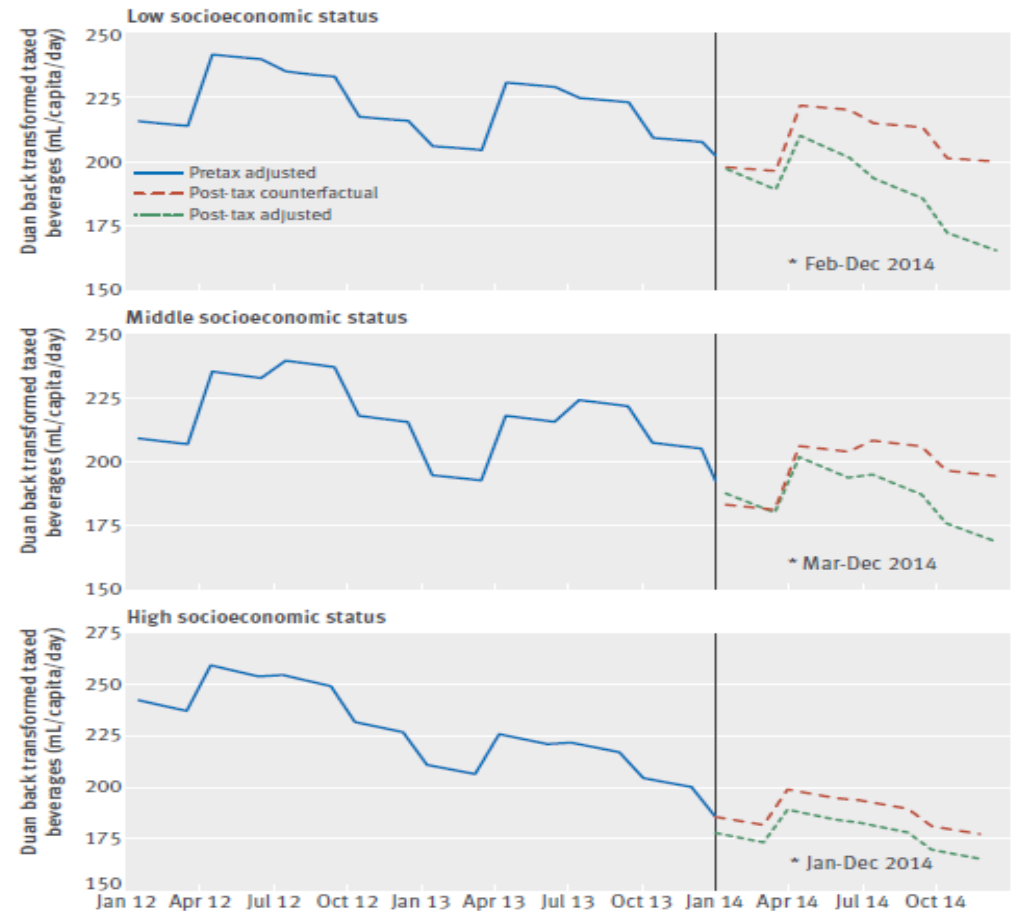


Colchero MA, Guerrero Lopez C, Molina M, Rivera J . Beverage sales in Mexico before and after implementation of a sugar sweetened beverages tax. 2016. PLoS ONE. 11(9).

Changes in sales of sugar-sweetened beverages in Mexico before (2007-2013) and after the tax (2014-2016): <https://www.insp.mx/eppo/blog/4278-changes-sales-beverages.html>

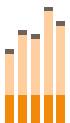
# Impact of Tax on Purchases Year One (2014)

- Purchases of taxed beverages reduced in all SES groups
- Reductions in purchases **greatest among lowest SES households**
  - **9% decline in 2014**

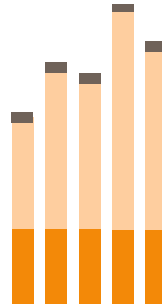


# Impact of Tax on Purchases Year One (2014)

- **Greatest impact on heaviest consumers**
  - **Highest purchasers:**
    - 31% of households, purchased average of 157 liters of SSB/capita/yr
      - *10% reduction in purchases following tax*
  - **Middle purchasers:**
    - 40% of households, purchased average of 60 liters of SSB/capita/yr
      - *8% reduction of taxed beverages post-tax*
  - **Light and non purchasers:**
    - Remaining households; small impact on light purchasers

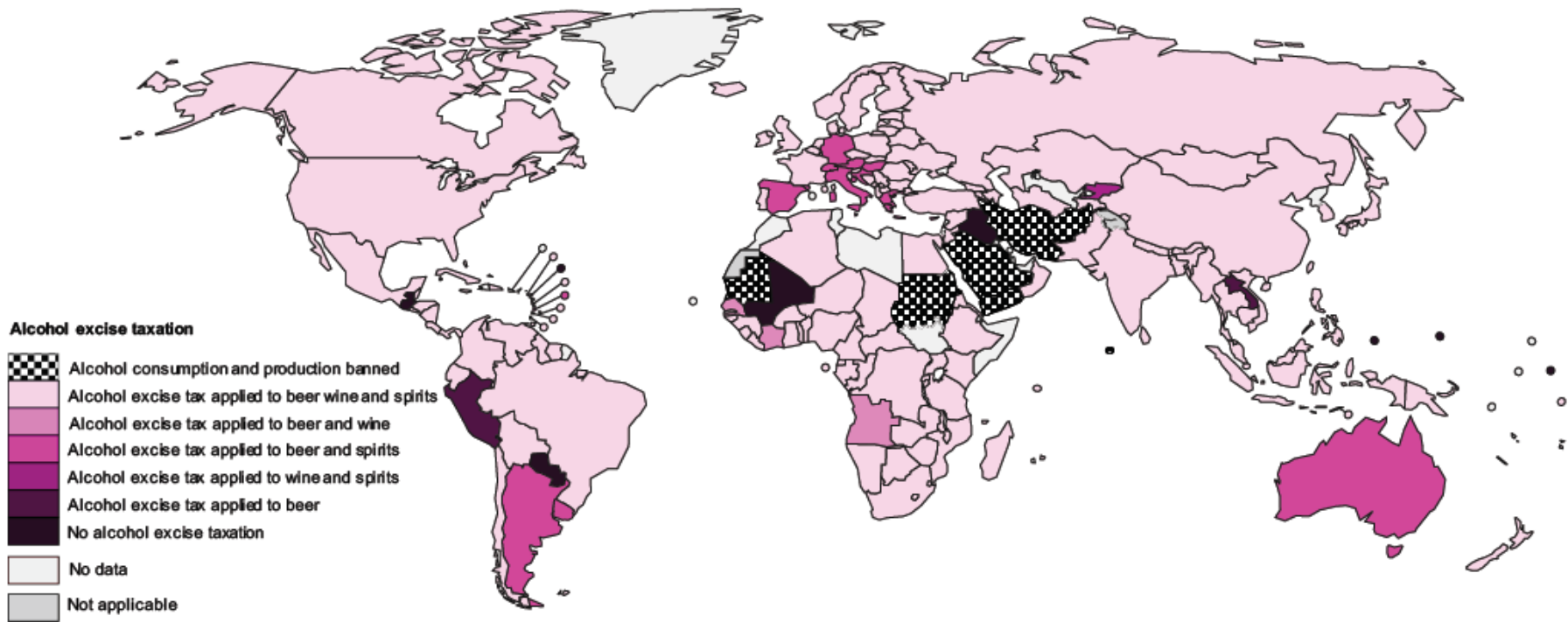






# Current Status of Alcohol & Sugary Drink Taxes

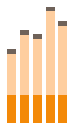
# Alcoholic Beverage Excise Taxes



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

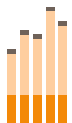


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# Alcoholic Beverage Taxes




- Most governments levy excise taxes on alcoholic beverages
  - Beer – 155 countries
  - Wine – 138 countries
  - Distilled Spirits – 141 countries
  - Account for 17.3% of price on average
    - 0.3% in Kyrgyzstan to 44.9% in Norway
  - Variety of tax structures
    - Often vary by beverage type
    - Specific taxes based on ethanol content in some countries

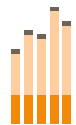
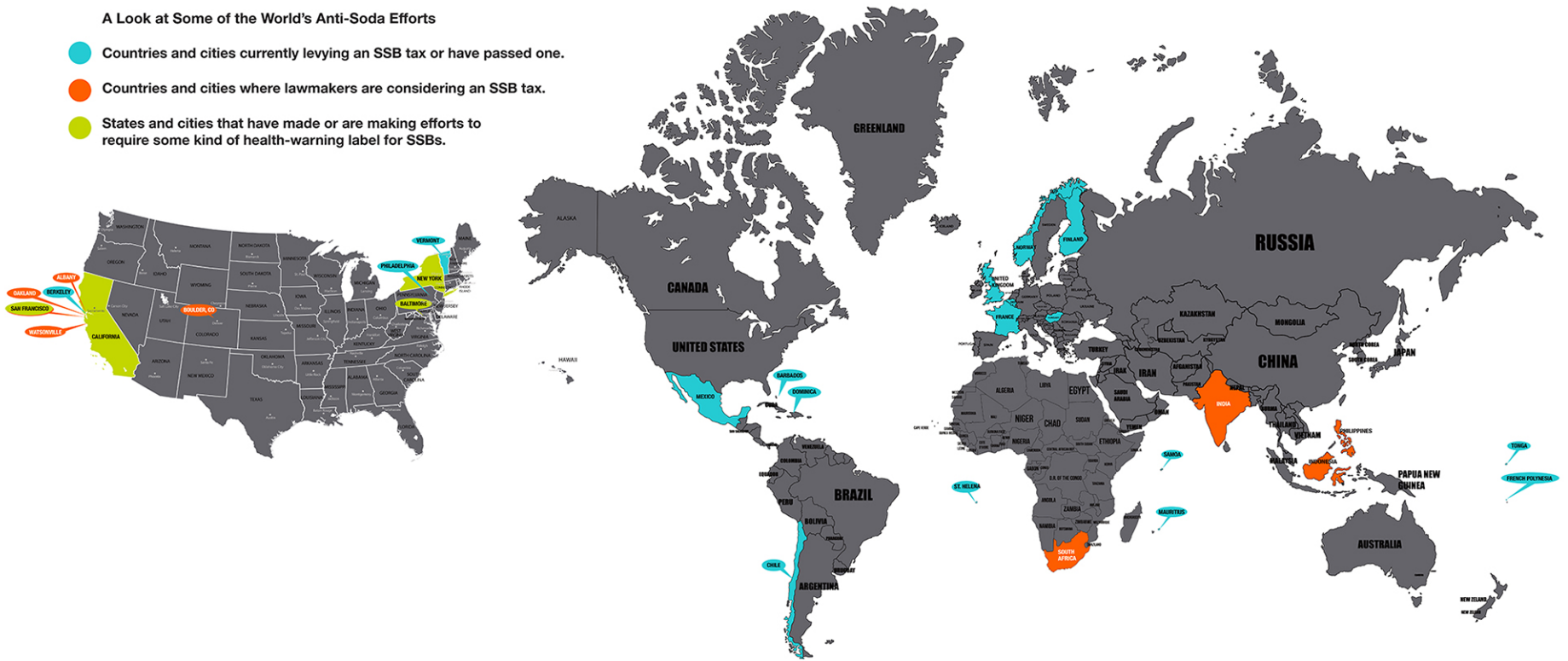


Sources: Chaloupka & Powell 2018

# Sugary Drink Taxes

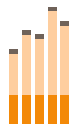
## A Look at Some of the World's Anti-Soda Efforts

-  Countries and cities currently levying an SSB tax or have passed one.
-  Countries and cities where lawmakers are considering an SSB tax.
-  States and cities that have made or are making efforts to require some kind of health-warning label for SSBs.

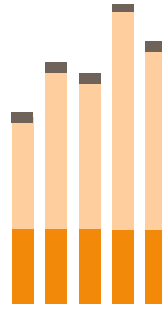


# Sugary Drink Taxes

- Few governments levy excise taxes on sugary drinks
  - Denmark first taxed soft drinks in 1930s
    - Repealed in 2014
  - Hungary taxed sugary drinks starting in 2011
    - Part of broader public health product tax
  - France taxed SSBs and ASBs starting in 2012
  - Mexico imposed first significant SSB tax in 2014
  - Variety of tax structures
    - Volume-based specific taxes
    - Taxes based on sugar content
      - UK's tiered tax
      - South Africa's tax per gram



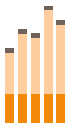
Sources: Chaloupka & Powell 2018



# Oppositional Arguments

# Common Oppositional Arguments

- Industries and allies use several common arguments in opposition to tax increases:
  - Won't have the intended impact in terms of reducing use and consequences
  - Will lead to extensive tax avoidance and tax evasion
  - Will harm poor and working class consumers
  - Will lead to massive job losses





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## Preventive Medicine

journal homepage: [www.elsevier.com/locate/ypmed](http://www.elsevier.com/locate/ypmed)

## Employment changes associated with the introduction of taxes on sugar-sweetened beverages and nonessential energy-dense food in Mexico

Carlos M. Guerrero-López, Mariana Molina, M. Arantxa Colchero\*

Center for Health Systems Research, Instituto Nacional de Salud Pública, Universidad No. 655 Colonia Santa María Ahuacatitlán, Cerrada Los Pinos y Caminera C.P. 62100, Cuernavaca, Mor., Mexico

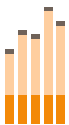
### ARTICLE INFO

**Keywords:**

Employment  
Taxes  
Mexico  
Evaluation  
Policy  
Obesity

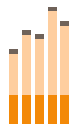
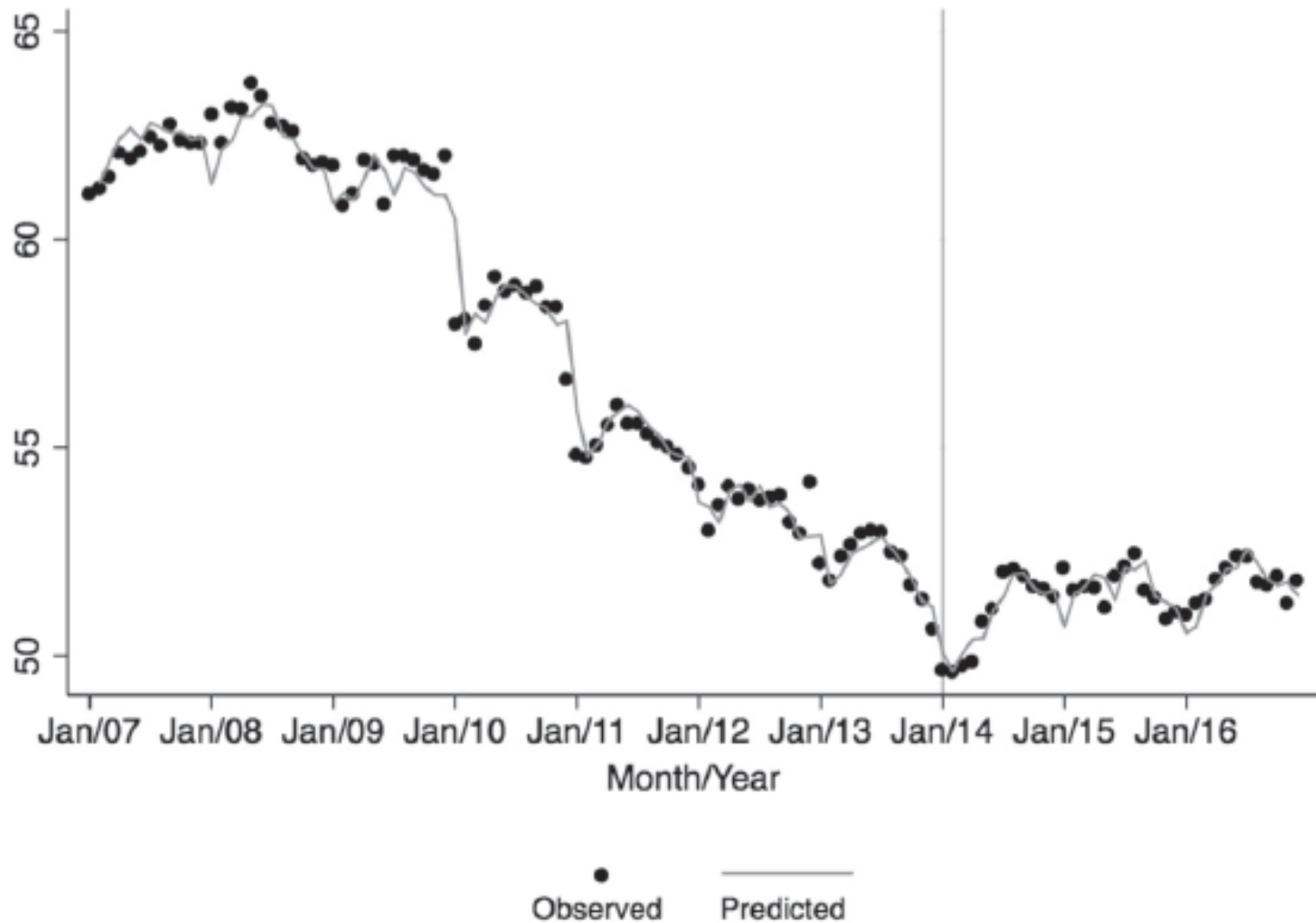
### ABSTRACT

We assessed changes in employment in the manufacturing industry, the commercial sector and national unemployment rates, associated with the fiscal policies implemented in 2014 in Mexico: a 1 peso per liter excise tax to sugar-sweetened beverages (SSB) and an 8% tax on nonessential energy-dense food. We used data from three nationally representative surveys. Controlling for contextual variables, we used interrupted time series analyses to model changes in number of employees in the SSB and nonessential energy-dense food industry, in commercial establishments selling beverages and food and changes in national unemployment rates. Our results show that there were no significant changes in employment associated with the taxes in the manufacturing industries (for beverages and nonessential energy-dense food). We found a very small increasing trend in the post-tax period for employment in commercial stores and a decreasing trend in the unemployment rate. However, these changes are negligible and unlikely to be caused by the implementation of the taxes. In conclusion, there were no employment reductions associated with the fiscal policies implemented in Mexico in 2014 on SSB and nonessential energy-dense food.



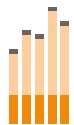
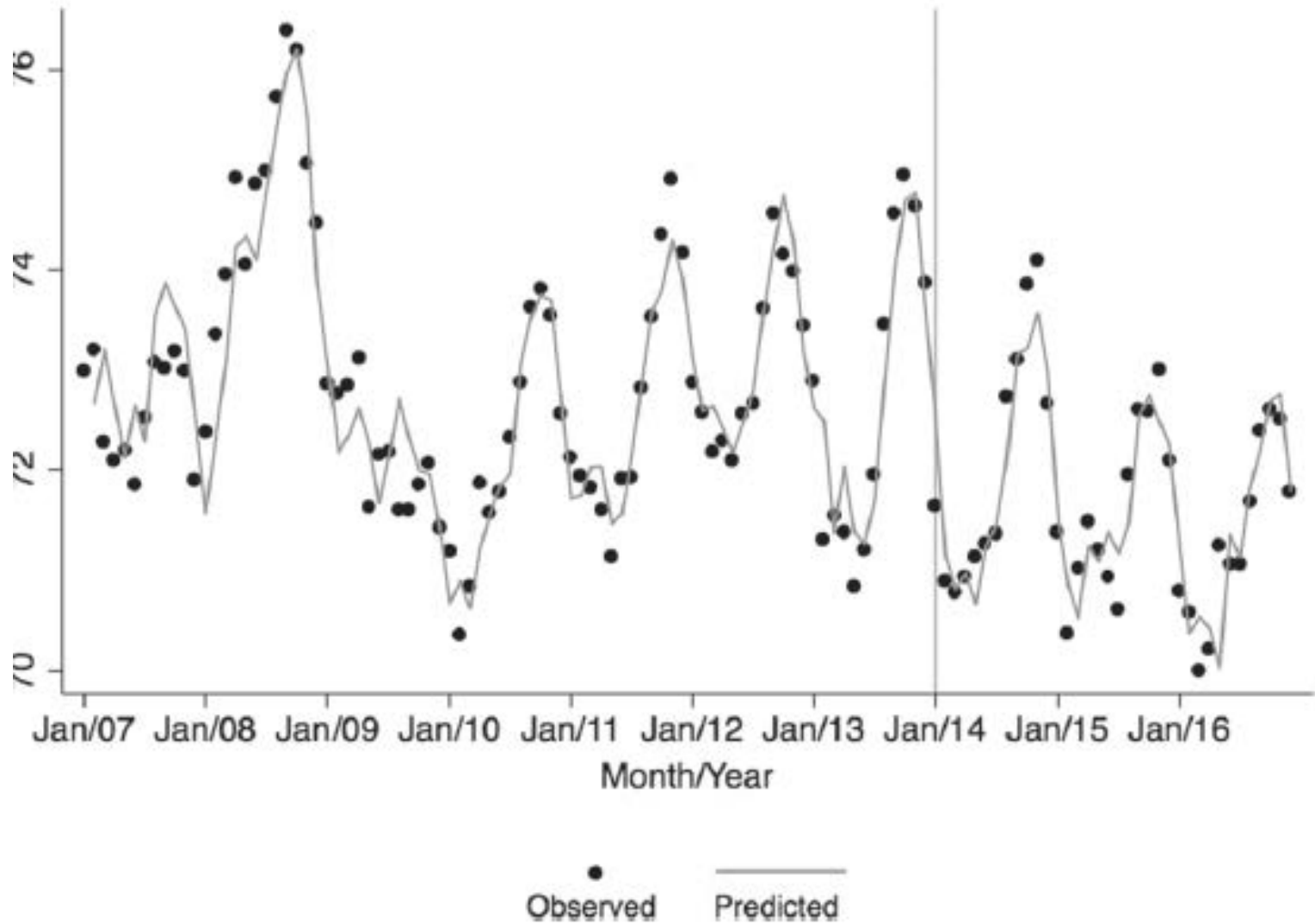


## A- Sugar-sweetened beverages industry



Thousands of employees, Mexico, 2007-2016; Guerrero-Lopez, et al., 2017

## B- Nonessential energy-dense food industry



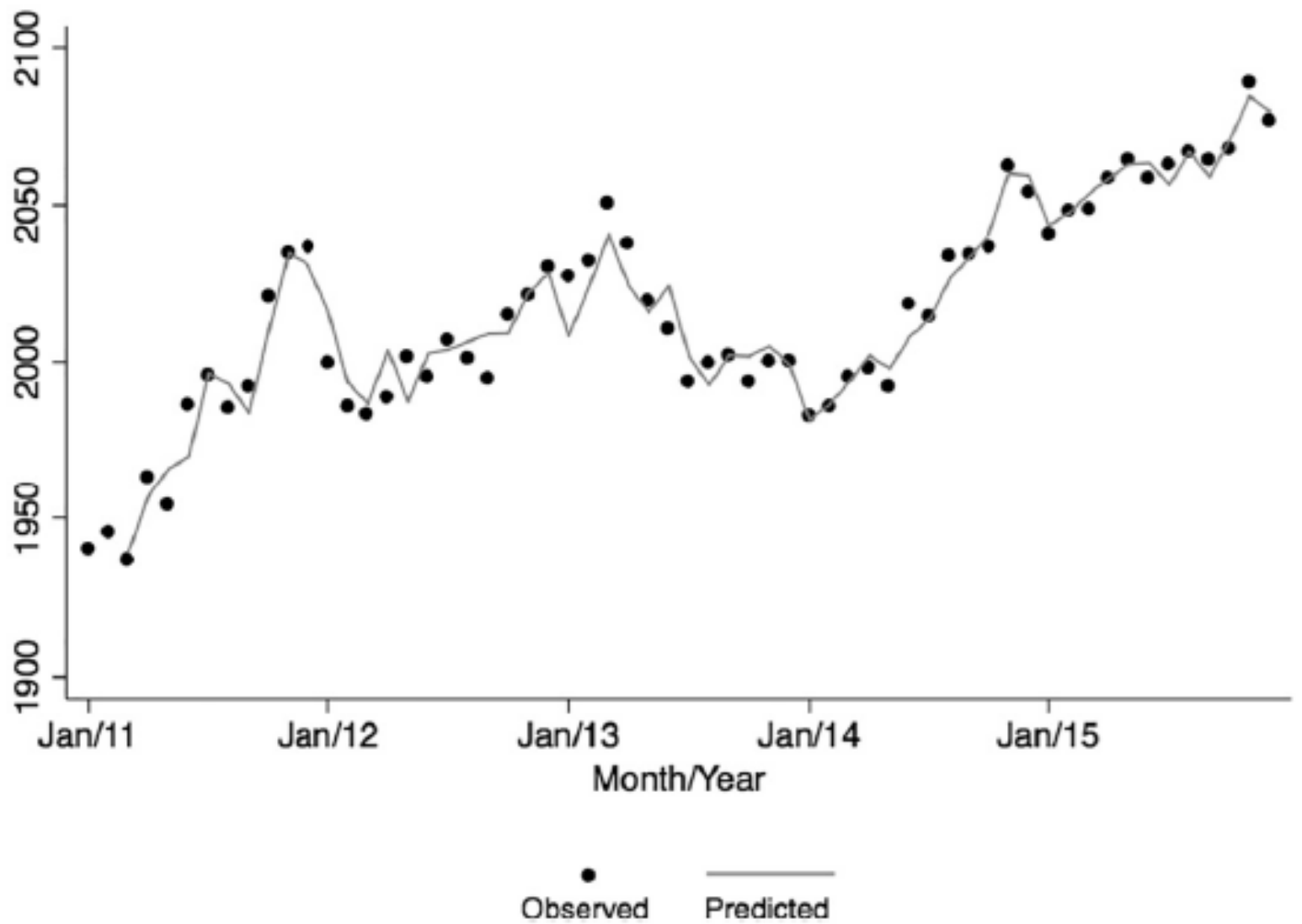
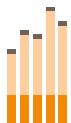


Fig. 2. Thousands of employees in commercial establishments. Mexico, EMEC, 2011–2015.



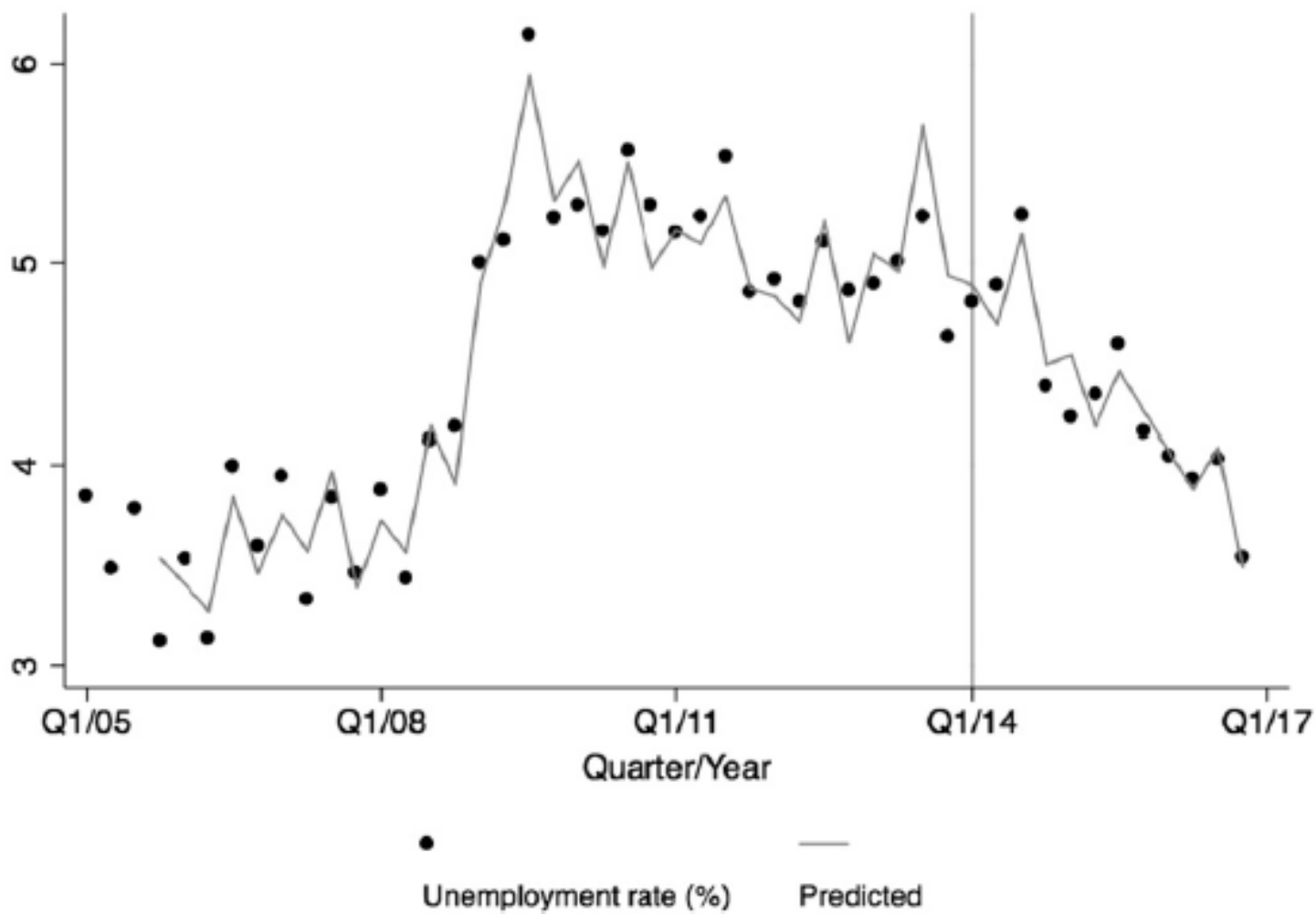


Fig. 3. National unemployment rate. Mexico, ENOE 2005–2016.



# Employment Impact of Sugar-Sweetened Beverage Taxes

Lisa M. Powell, PhD, Roy Wada, PhD, Joseph J. Persky, PhD, and Frank J. Chaloupka, PhD

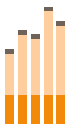
Sugar-sweetened beverages (SSBs) are the leading source of added sugar in the American diet and are associated with increased risk of type 2 diabetes, cardiovascular disease, dental caries, osteoporosis, and obesity.<sup>1-4</sup> From 1988-1994 to 1999-2004, average daily caloric intake of SSBs increased from 157 to 203 kilocalories among adults and from 204 to 224 kilocalories among children aged 2 to 19 years.<sup>5,6</sup> Recently, SSB consumption prevalence fell across all age groups from 1999-2000 to 2007-2008, although the prevalence of sports and energy drinks increased and heavy SSB consumption ( $\geq 500$  kcal/day) increased among children.<sup>2,7</sup> In 2009-2010,

*Objectives.* We assessed the impact of sugar-sweetened beverage (SSB) taxes on net employment.

*Methods.* We used a macroeconomic simulation model to assess the employment impact of a 20% SSB tax accounting for changes in SSB demand, substitution to non-SSBs, income effects, and government expenditures of tax revenues for Illinois and California in 2012.

*Results.* We found increased employment of 4406 jobs in Illinois and 6654 jobs in California, representing a respective 0.06% and 0.03% change in employment. Declines in employment within the beverage industry occurred but were offset by new employment in nonbeverage industry and government sectors.

*Conclusions.* SSB taxes do not have a negative impact on state-level employment, and industry claims of regional job losses are overstated and may mislead lawmakers and constituents. (*Am J Public Health.* 2014;104:672-677. doi:10.2105/AJPH.2013.301630)





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## Preventive Medicine

journal homepage: [www.elsevier.com/locate/ypmed](http://www.elsevier.com/locate/ypmed)Employment impacts of alcohol taxes<sup>☆</sup>Roy Wada<sup>a</sup>, Frank J. Chaloupka<sup>b,c,\*</sup>, Lisa M. Powell<sup>b,c</sup>, David H. Jernigan<sup>d</sup><sup>a</sup> Boston Public Health Commission, 1010 Massachusetts Avenue, 6th Floor, Boston, MA 02118, United States<sup>b</sup> Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago, MC 275, 1747 W. Roosevelt Road, Chicago, IL 60608, United States<sup>c</sup> Health Policy and Administration, School of Public Health, University of Illinois at Chicago, Chicago, IL 60608, United States<sup>d</sup> Department of Health, Behavior and Society, Bloomberg School of Public Health, The Johns Hopkins University, Baltimore, MD 21205, United States

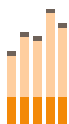
## ARTICLE INFO

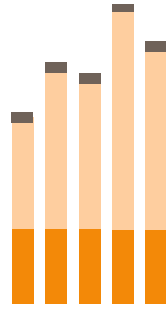
## Keywords:

Alcohol taxes  
Excise taxes  
Sales taxes  
Employment

## ABSTRACT

There is strong scientific evidence supporting the effectiveness of increasing alcohol taxes for reducing excessive alcohol consumption and related problems. Opponents have argued that alcohol tax increases lead to job losses. However, there has been no comprehensive economic analysis of the impact of alcohol taxes on employment. To fill this gap, a regional macroeconomic simulation model was used to assess the net impact of two hypothetical alcohol tax increases (a 5-cent per drink excise tax increase and a 5% sales tax increase on beer, wine, and distilled spirits, respectively) on employment in Arkansas, Florida, Massachusetts, New Mexico, and Wisconsin. The model accounted for changes in alcohol demand, average state income, and substitution effects. The employment impact of spending the new tax revenue on general expenditures versus health care was also assessed. Simulation results showed that a 5-cent per drink additional excise tax on alcoholic beverages with new tax revenues allocated to general expenditures increased net employment in Arkansas (802 jobs); Florida (4583 jobs); Massachusetts (978 jobs); New Mexico (653 jobs); and Wisconsin (1167 jobs). A 5% additional sales tax also increased employment in Arkansas (789 jobs); Florida (4493 jobs); Massachusetts (898 jobs); New Mexico (621 jobs); and Wisconsin (991 jobs). Using new alcohol tax revenues to fund health care services resulted in slightly lower net increases in state employment. The overall economic impact of alcohol tax increases cannot be fully assessed without accounting for the job gains resulting from additional tax revenues.

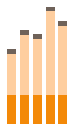




# Summary

# Conclusions

- Higher alcoholic beverage taxes and new sugary drink taxes significantly reduce consumption
- Higher alcohol taxes reduce the harms caused by excessive drinking
- Mixed but growing evidence that sugary drink taxes improve weight outcomes
- No evidence of negative economic impact





For more information:

Bridging the Gap

<http://www.bridgingthegapresearch.org>

Tobacconomics

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