

**tobacconomics**

Economic Research Informing Tobacco Control Policy

# The Economics of Alcohol Control

Frank J. Chaloupka, University of Illinois at Chicago

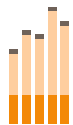
Center on Alcohol Marketing and Youth

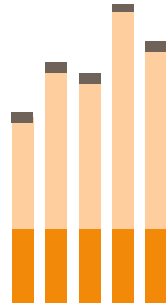
Johns Hopkins University Bloomberg School of Public Health

Baltimore, Maryland, January 24, 2018

# Overview

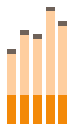
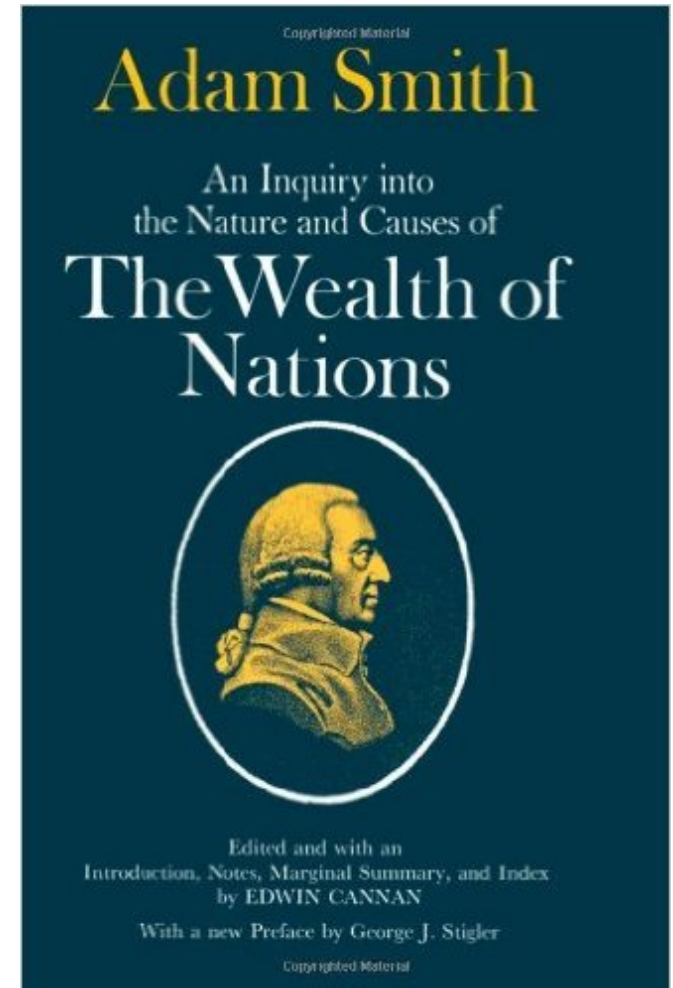
- Alcohol Taxation
  - Why Tax?
  - Impact of Alcohol & Tobacco Taxes on Use and Consequences
- Comparing/Contrasting Alcohol & Tobacco Taxes
- Economic Myths & Facts
- Ongoing Research





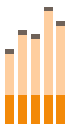
# Why Tax?

**" 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.****

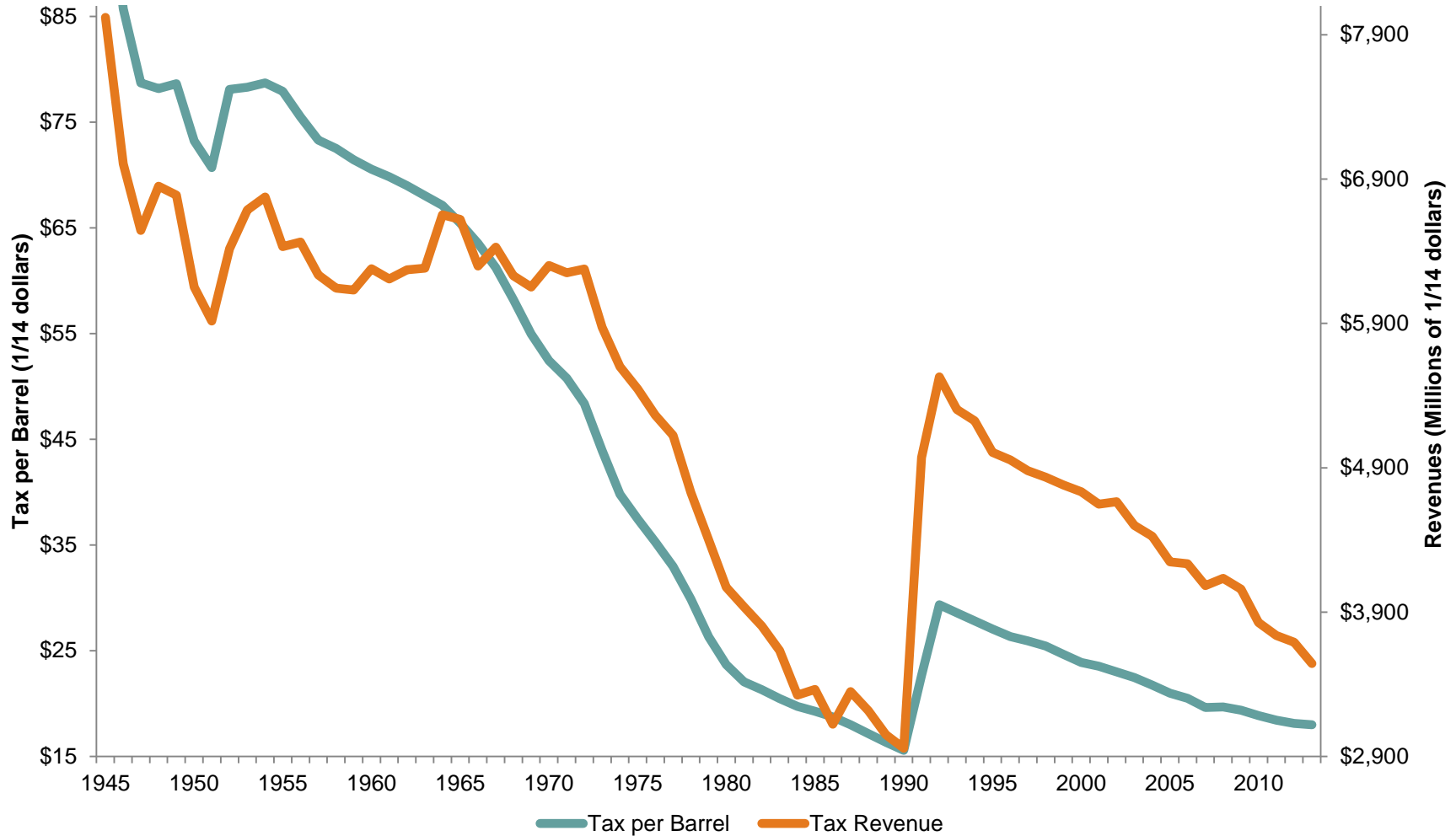


# Why Tax?

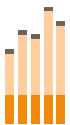
- **Efficient revenue generation**
  - Primary motive historically and still mostly true today
  - Very efficient sources of revenue given:
    - Historically low share of tax
    - Relatively inelastic demand
    - Few producers and few close substitutes
    - One of many goods/services that satisfies the “Ramsey Rule”



# Federal Beer Tax and Tax Revenues 1945-2013, Inflation Adjusted

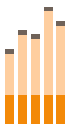


Source: *Brewers Almanac*, 2013, ATTTB, 2014, and author's calculations



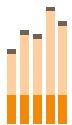
# Why Tax?

- **Promote public health**
  - Increasingly important motive for higher tobacco taxes, new food/beverage taxes in many jurisdictions
    - Less so for alcoholic beverage taxes
  - Based on substantial and growing evidence on the effects of taxes and prices on use and its consequences
    - Particularly among young, less educated, and low income populations



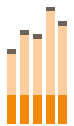
# Why Tax?

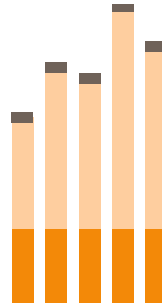
- **Cover the external costs of tobacco and excessive alcohol use**
  - Less frequently used motive
  - Account for costs resulting from tobacco, alcohol use imposed on non-users
    - Increased health care costs, lost productivity, property damage, criminal justice costs, etc. caused by exposure to tobacco smoke among non-smokers, harms incurred by non/moderate drinkers
  - Can also include “internalities” that result from addiction, imperfect information, and time inconsistent preferences





# Economic Costs of Excessive Alcohol Consumption & Alcohol Tax Revenues United States, 2010

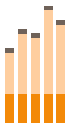




# **Impact of Tax and Price on Drinking and its Consequences**

# Alcohol Prices & Drinking

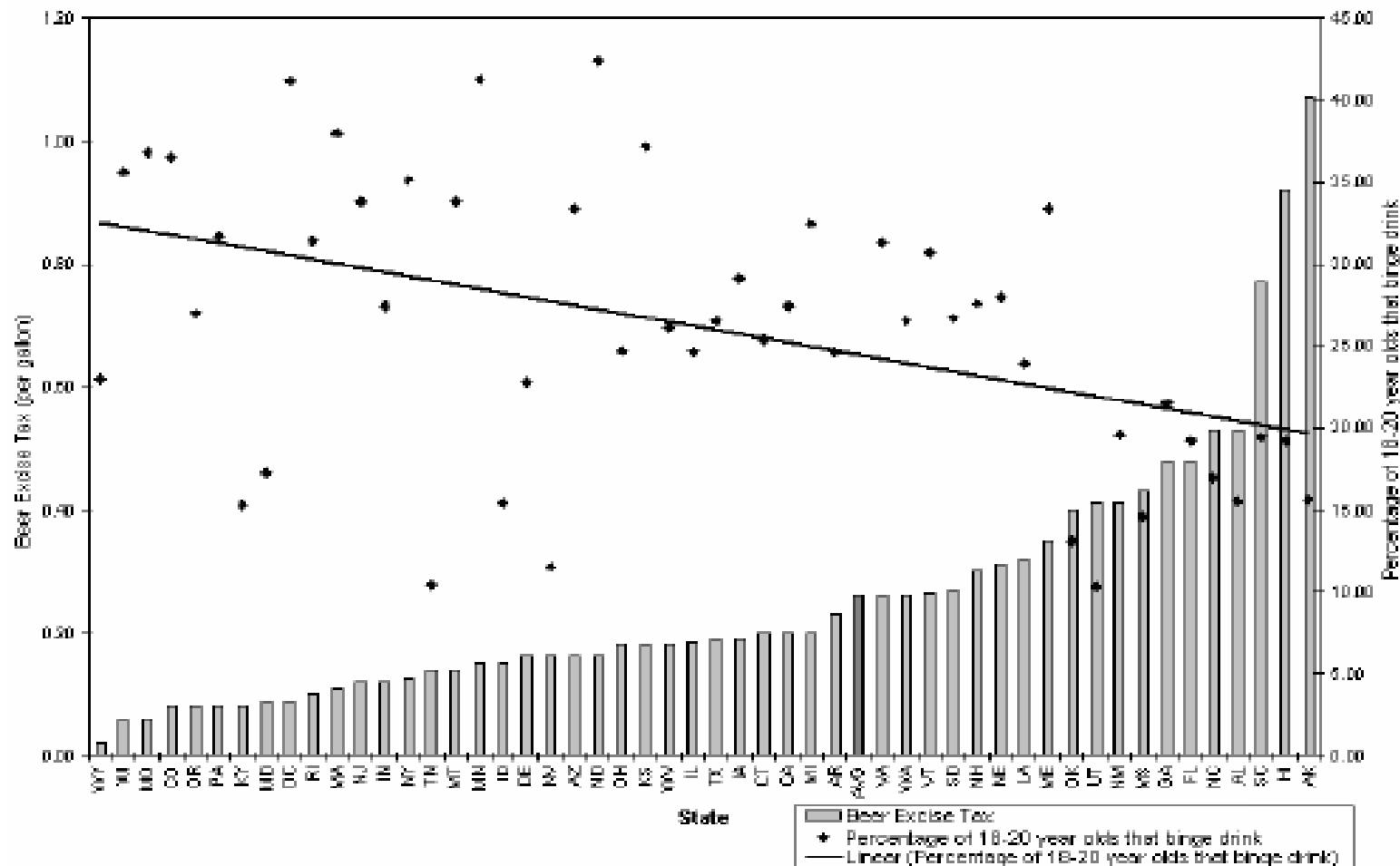
- **Extensive econometric and other research shows that higher prices for alcoholic beverages significantly reduce drinking:**
  - 10 percent price increase would reduce:
    - Beer consumption by 1.7 to 4.6 percent
    - Wine consumption by 3.0 to 6.9 percent
    - Spirits consumption by 2.9 to 8.0 percent
    - Overall consumption by 4.4 percent
    - Heavy drinking by 2.8 percent
    - Generally larger effects on youth and young adults



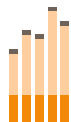


# Beer Taxes and Binge Drinking

Graph 7. Current beer excise taxes and the percentage of 18-20 year olds that binge drink.

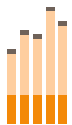


Source: CSPI *Factbook on State Beer Taxes*

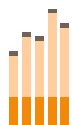
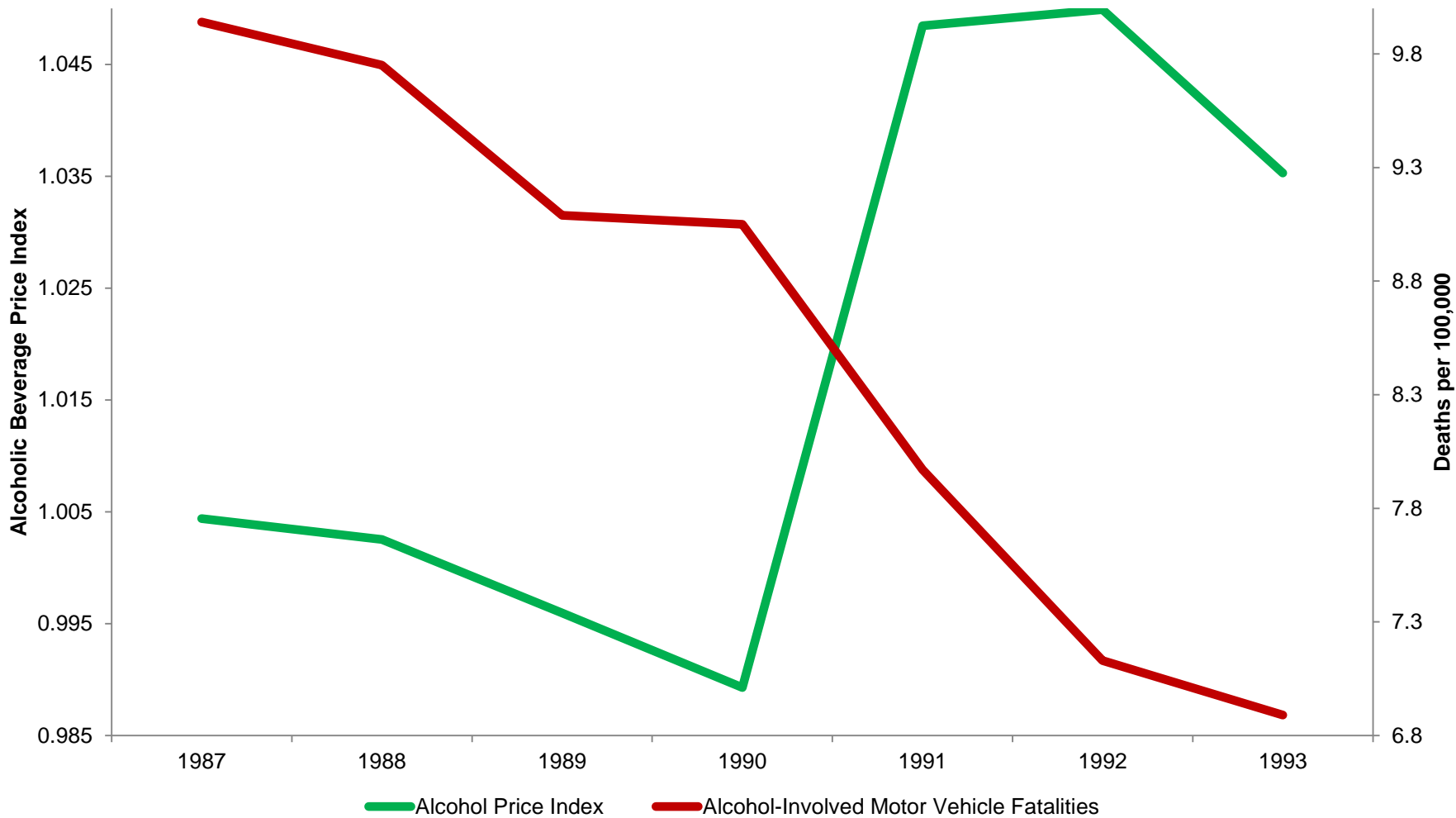


# Alcohol Prices & Consequences

- Extensive econometric and other research shows that higher prices for alcoholic beverages significantly reduce:
  - Drinking and driving, traffic crashes, and motor-vehicle accident fatalities

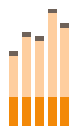
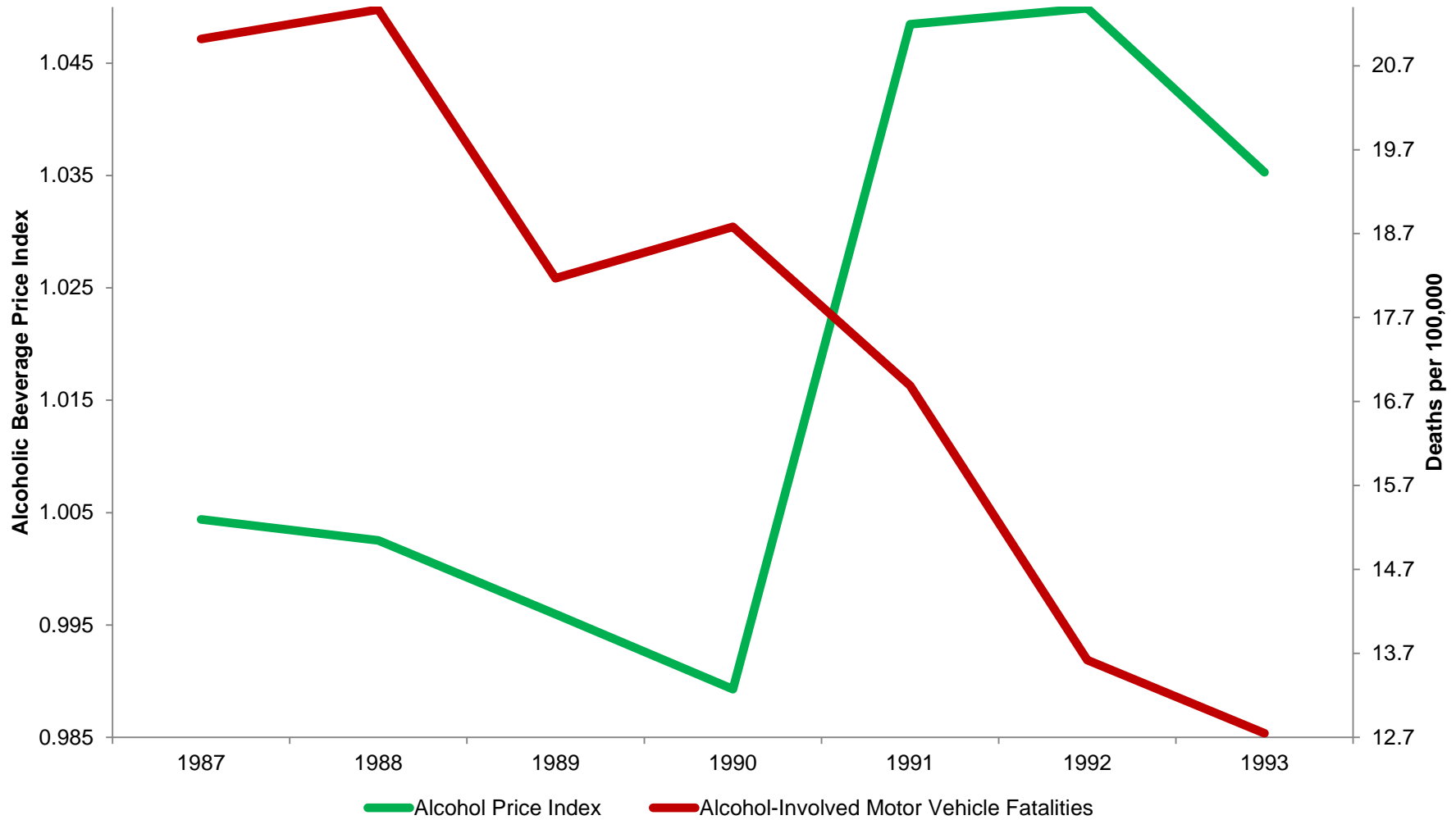


# Alcohol Prices and Alcohol-Related Traffic Fatalities, US, All Ages, 1987-1993



Source: NHTSA, BLS, and author's calculations

# Alcohol Prices and Alcohol-Related Traffic Fatalities, US, Ages 16-20, 1987-1993



Source: NHTSA, BLS, and author's calculations



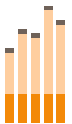
# Alcohol Prices & Consequences

- **Econometric and other research shows that higher prices for alcoholic beverages significantly reduce:**
  - 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



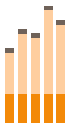
# Alcohol Prices & Consequences

- **Recent 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%



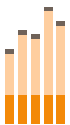
# Alcohol Prices and Educational Outcomes

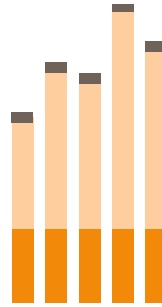
- Several studies examine impact of alcoholic beverage prices on various measures of educational attainment and related outcomes:
  - Yamada et al. (1996) conclude that higher prices would raise the likelihood of high school graduation
  - Cook and Moore (1993) find that higher prices would increase the probability of attending and graduating from a four year college or university
  - Our analyses of HCAS (Williams, et al. 2002; Powell et al. 2002) find that higher prices improve college student study habits, reduce frequency of missing classes and likelihood of falling behind in school, and lead to higher grade point averages



# Other Pricing Policies

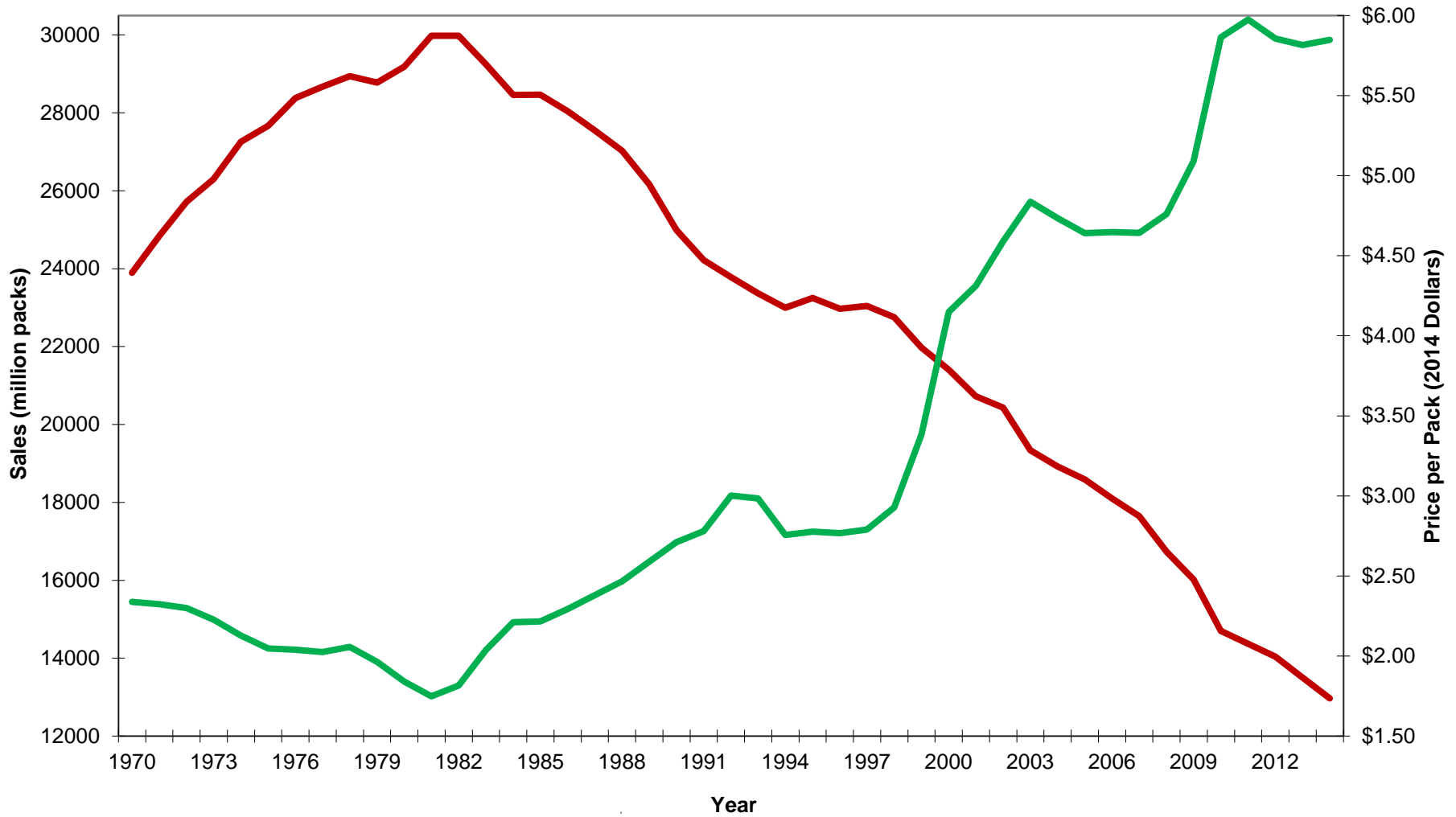
- **Many other policies directly or indirectly influence retail prices for alcoholic beverages:**
  - Minimum pricing/markup policies
  - Limits on price promotions
  - Quantity discount bans
  - Licensing restrictions
- Increasingly being challenged, overturned in many states
  - TFWS in Maryland, Costco in Washington, Wal-Mart in Texas, etc.





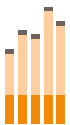
# **Comparing/Contrasting Tobacco & Alcohol Taxes**

# Cigarette Prices and Cigarette Sales United States, 1970-2014

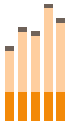
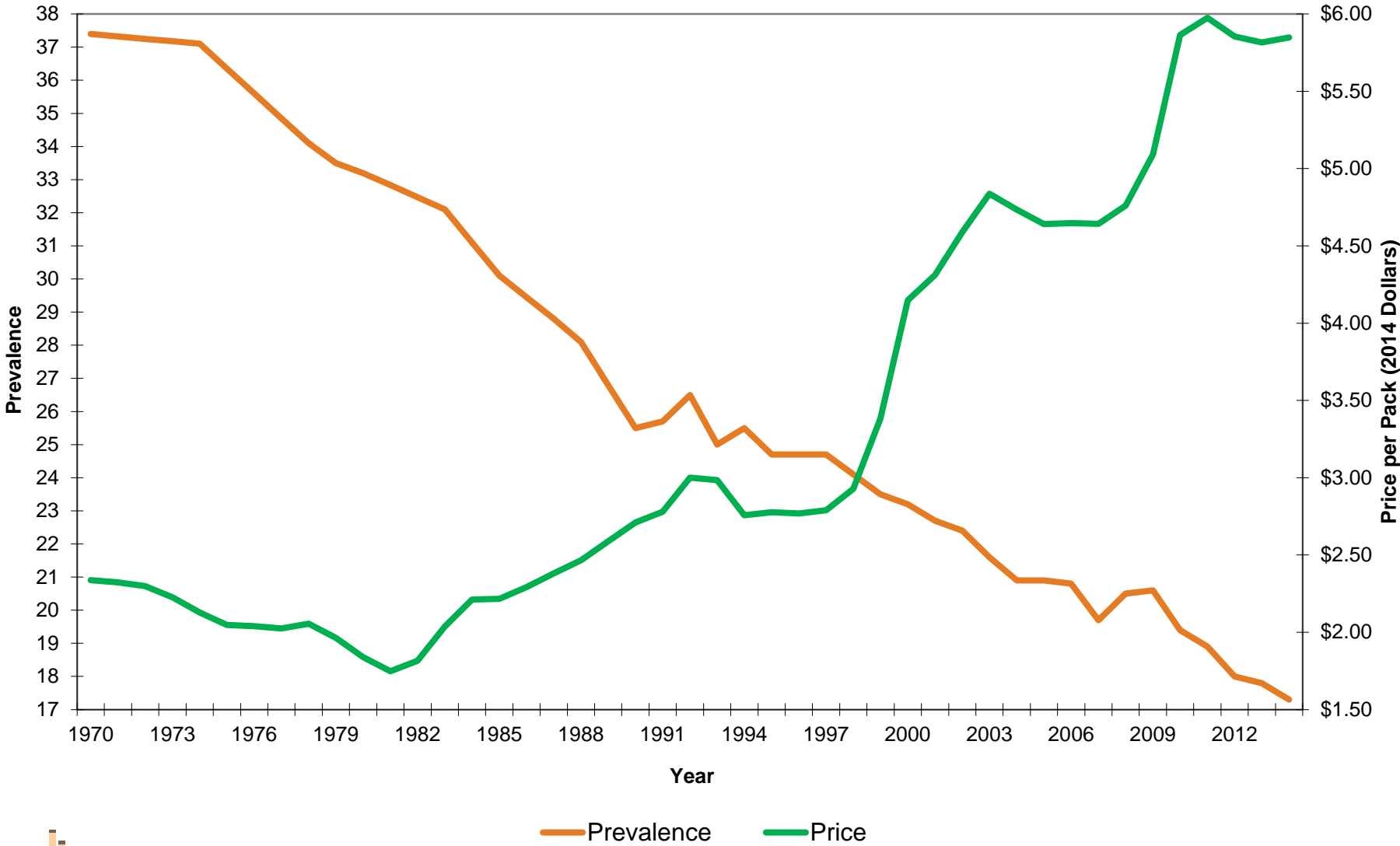


— Sales — Price

Source: *Tax Burden on Tobacco*, 2015, and author's calculations

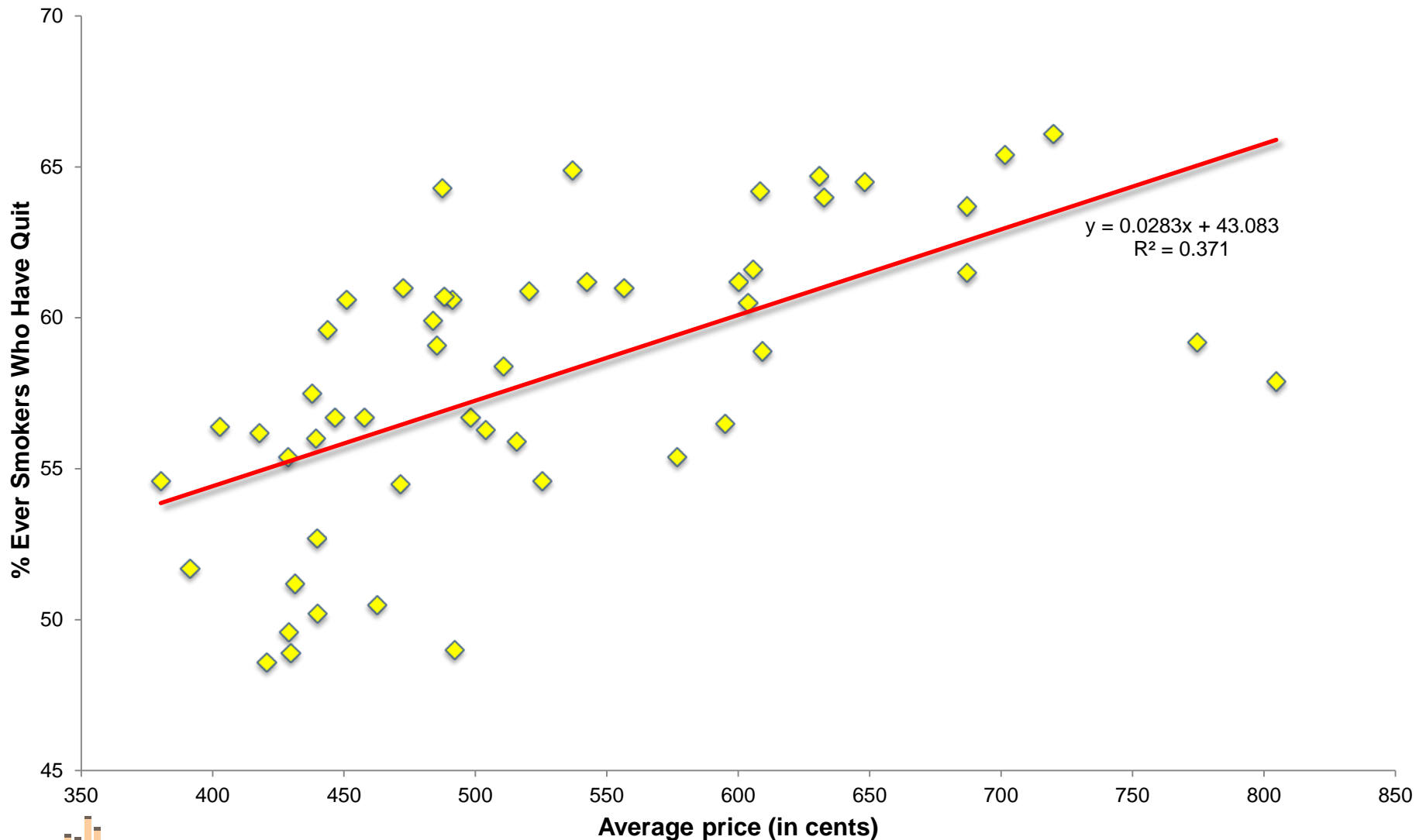


# Cigarette Prices and Adult Smoking Prevalence United States, 1970-2014

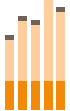


Source: NHIS, *Tax Burden on Tobacco*, 2015, and author's calculations

# Cigarette Prices and Cessation US States & DC, 2009

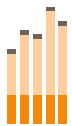
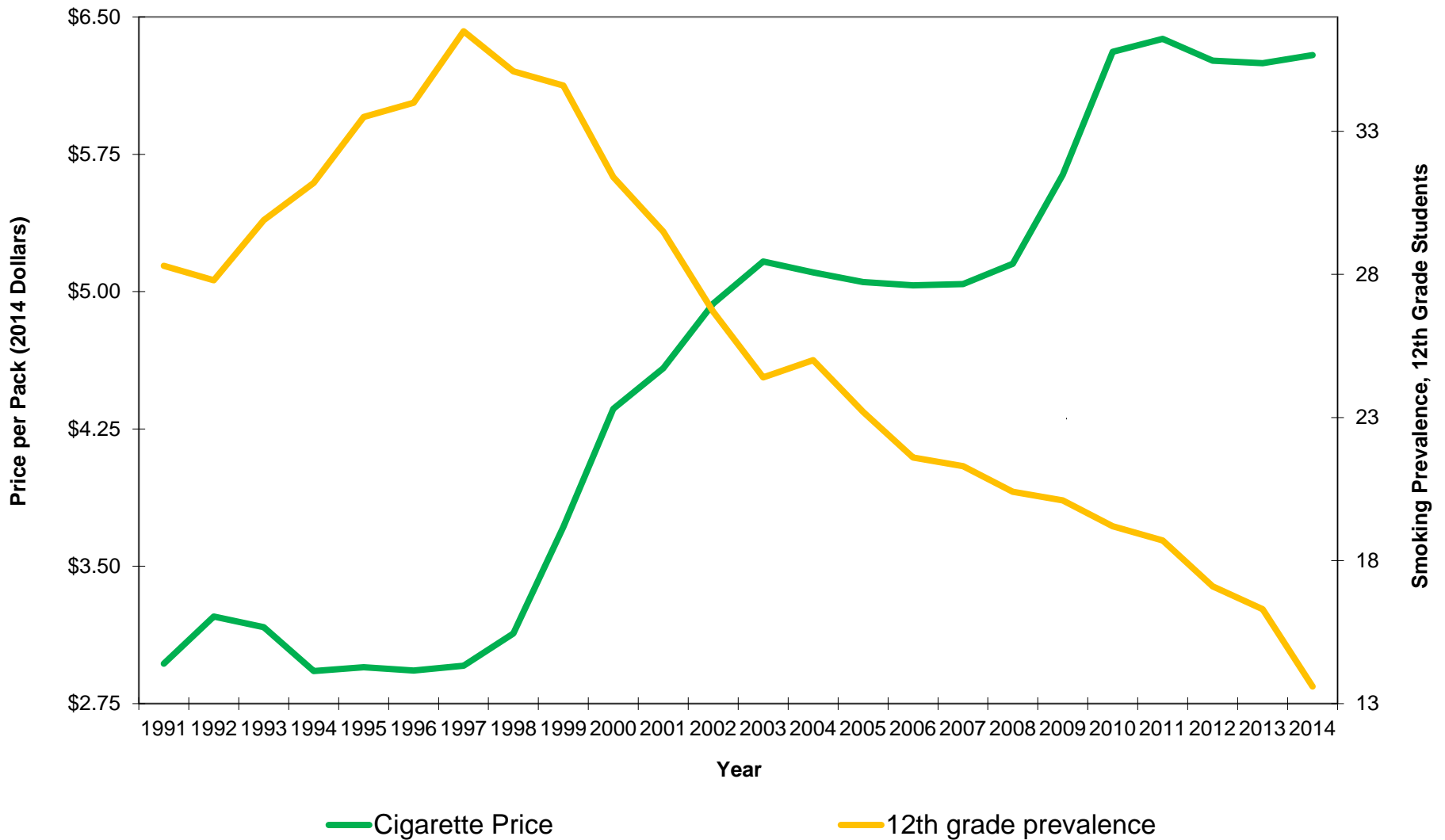


Source: BRFSS, *Tax Burden on Tobacco*, 2010, and author's calculations



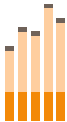
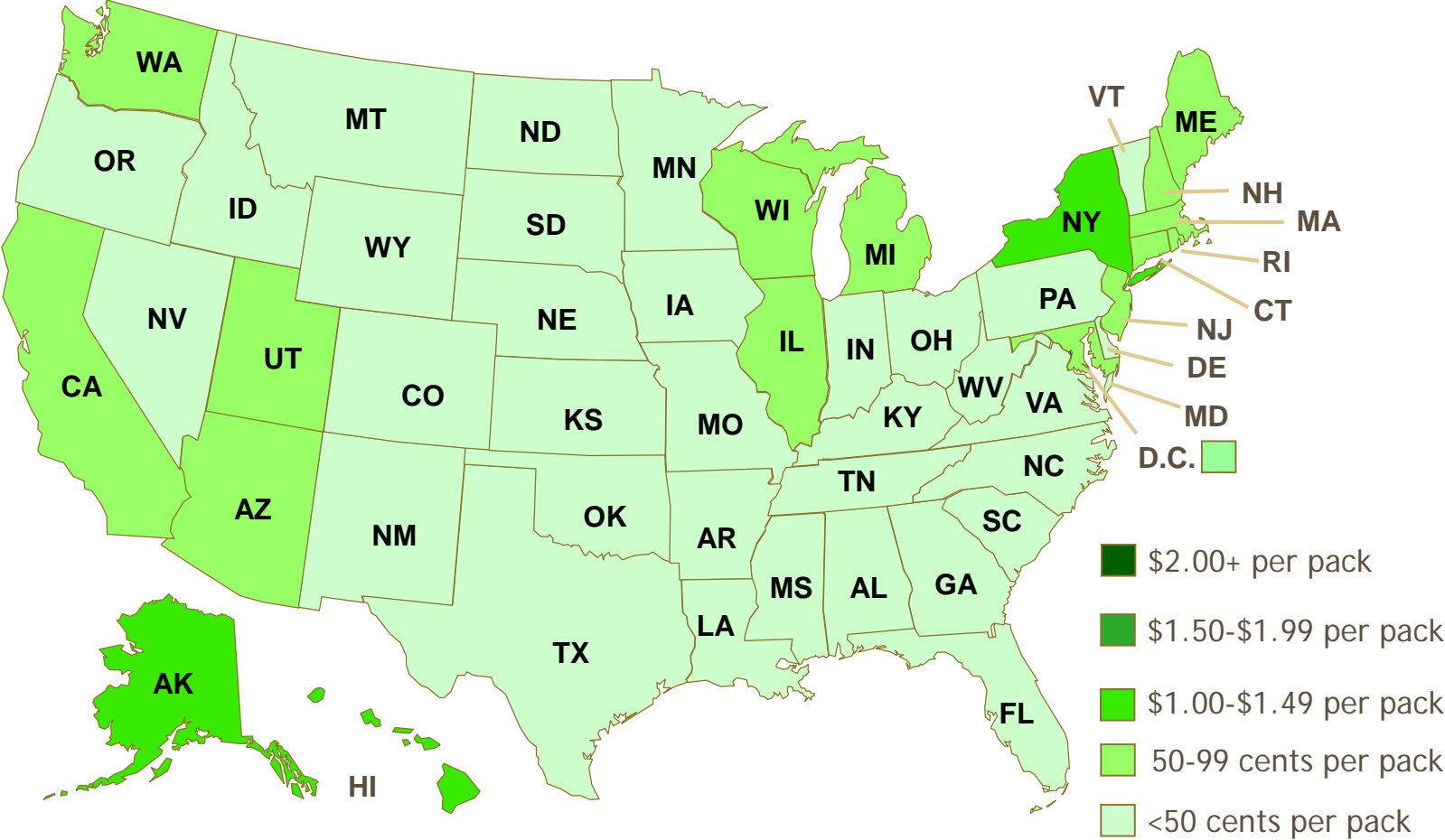


# Cigarette Price and Youth Smoking Prevalence Seniors, United States, 1991-2014



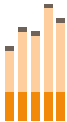
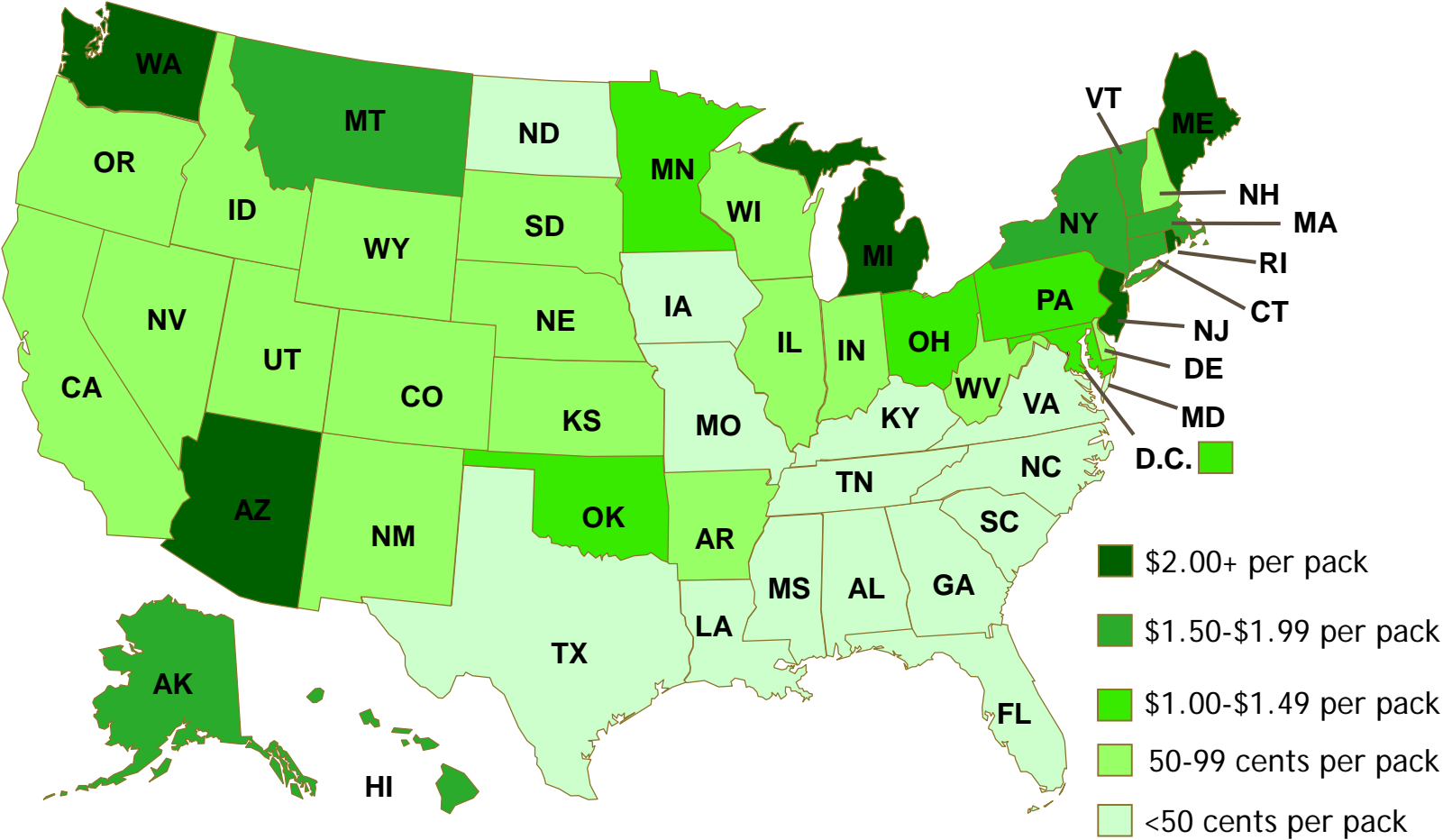
Source: MTF, *Tax Burden on Tobacco*, 2015, and author's calculations

# State Cigarette Excise Tax Rates – 2000



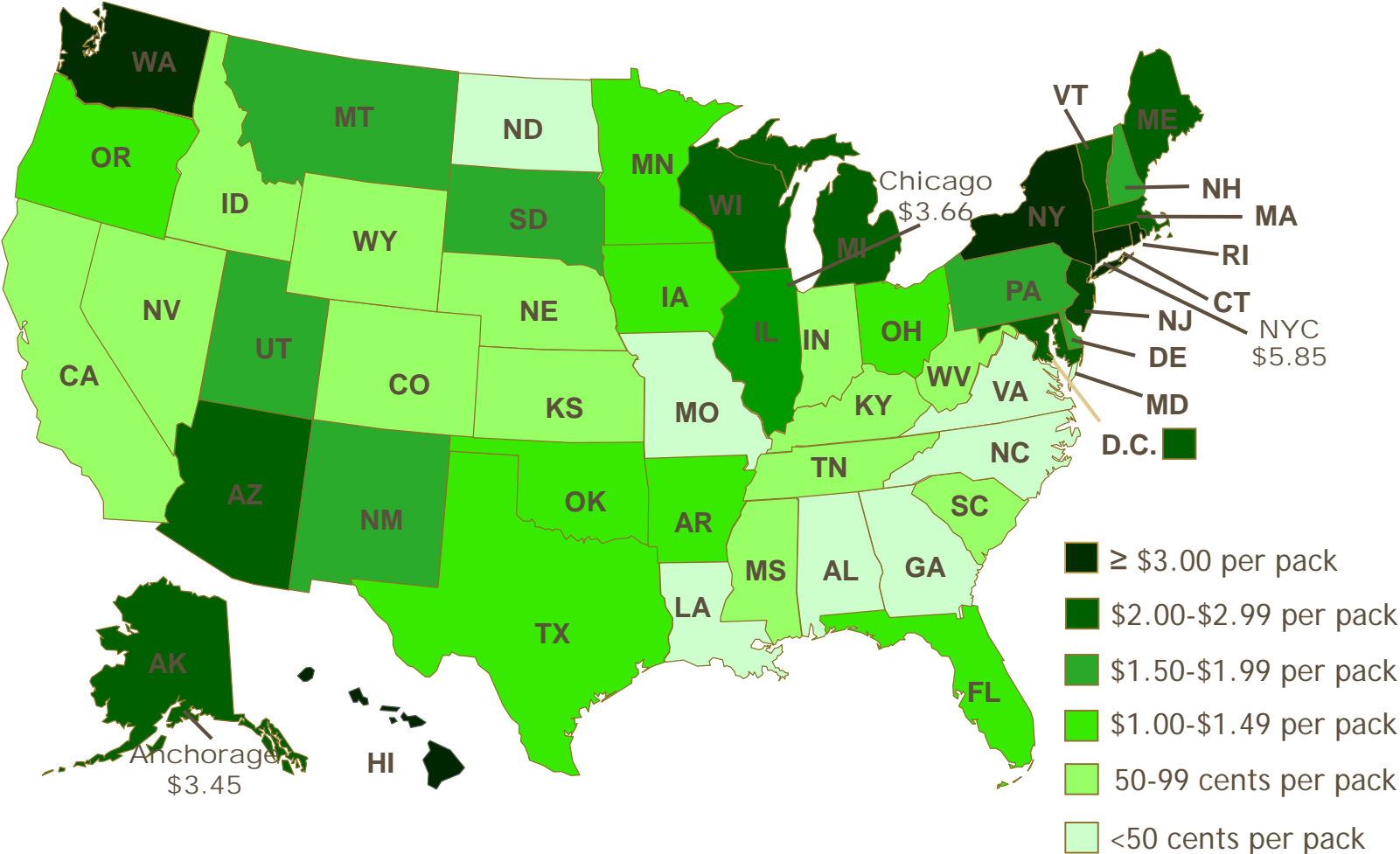
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

# State Cigarette Excise Tax Rates – 2006

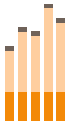


CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

# State Cigarette Excise Tax Rates – 2012

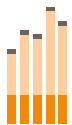
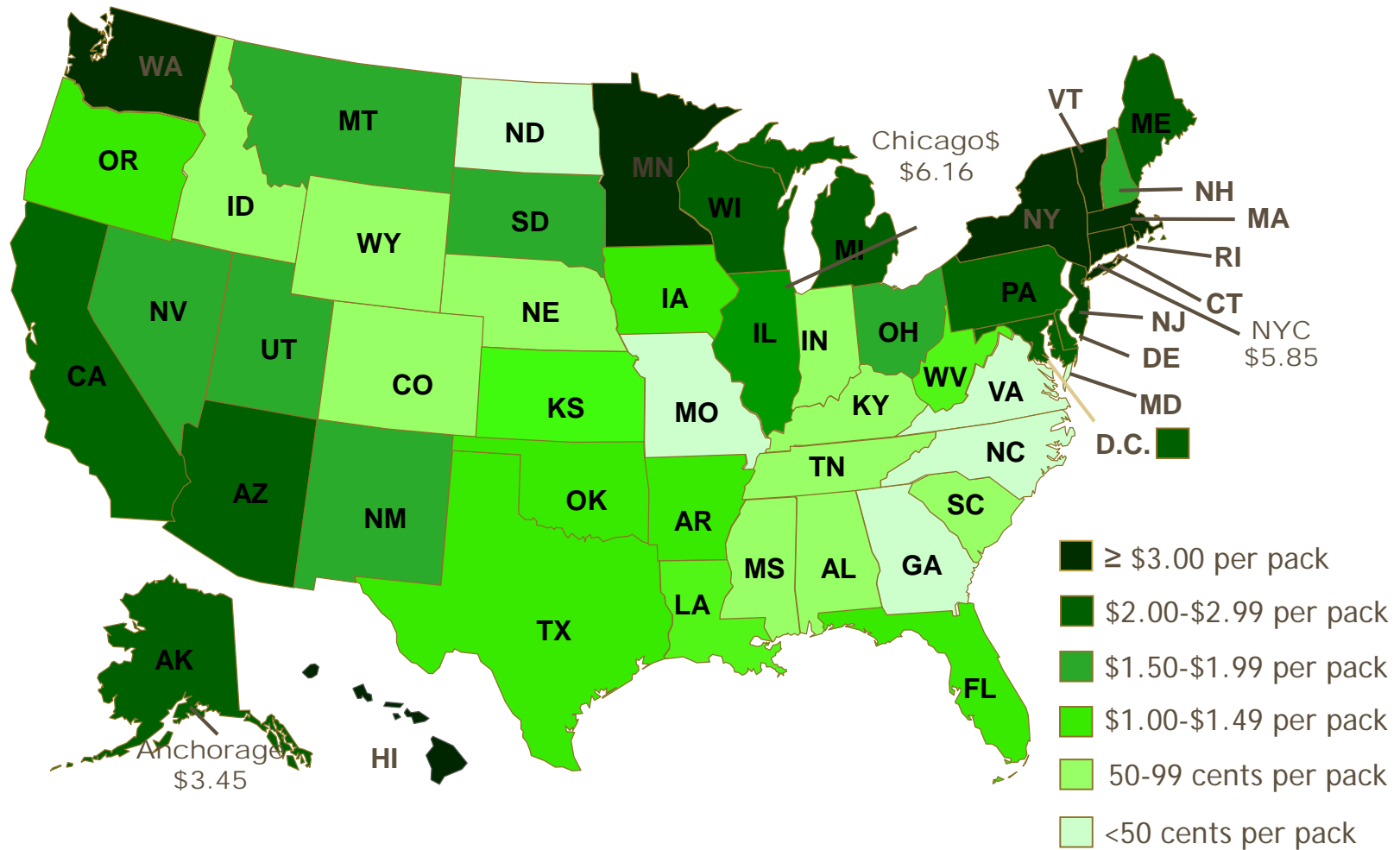


CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

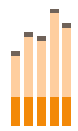
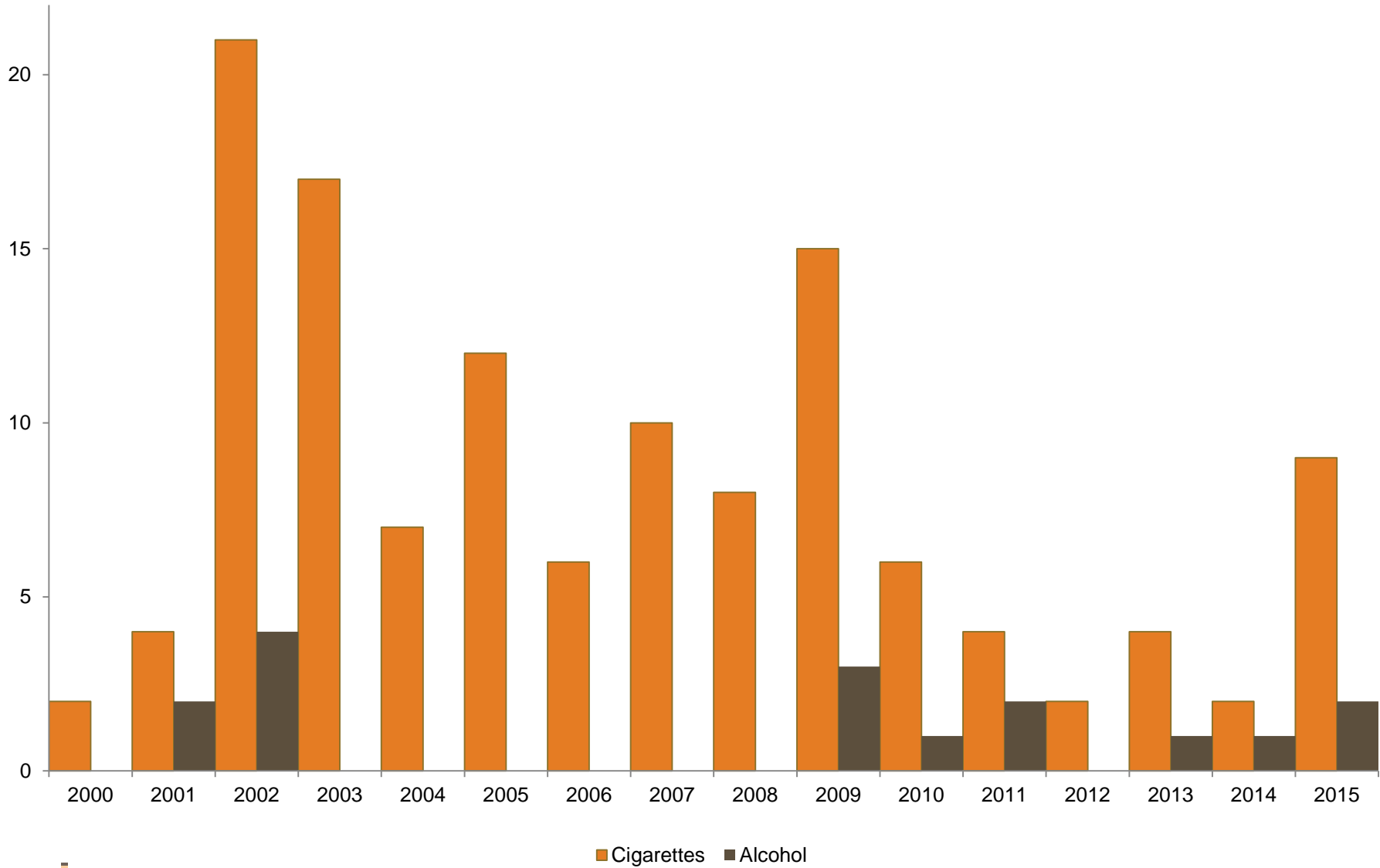


# State Cigarette Excise Tax Rates

## January 1, 2018

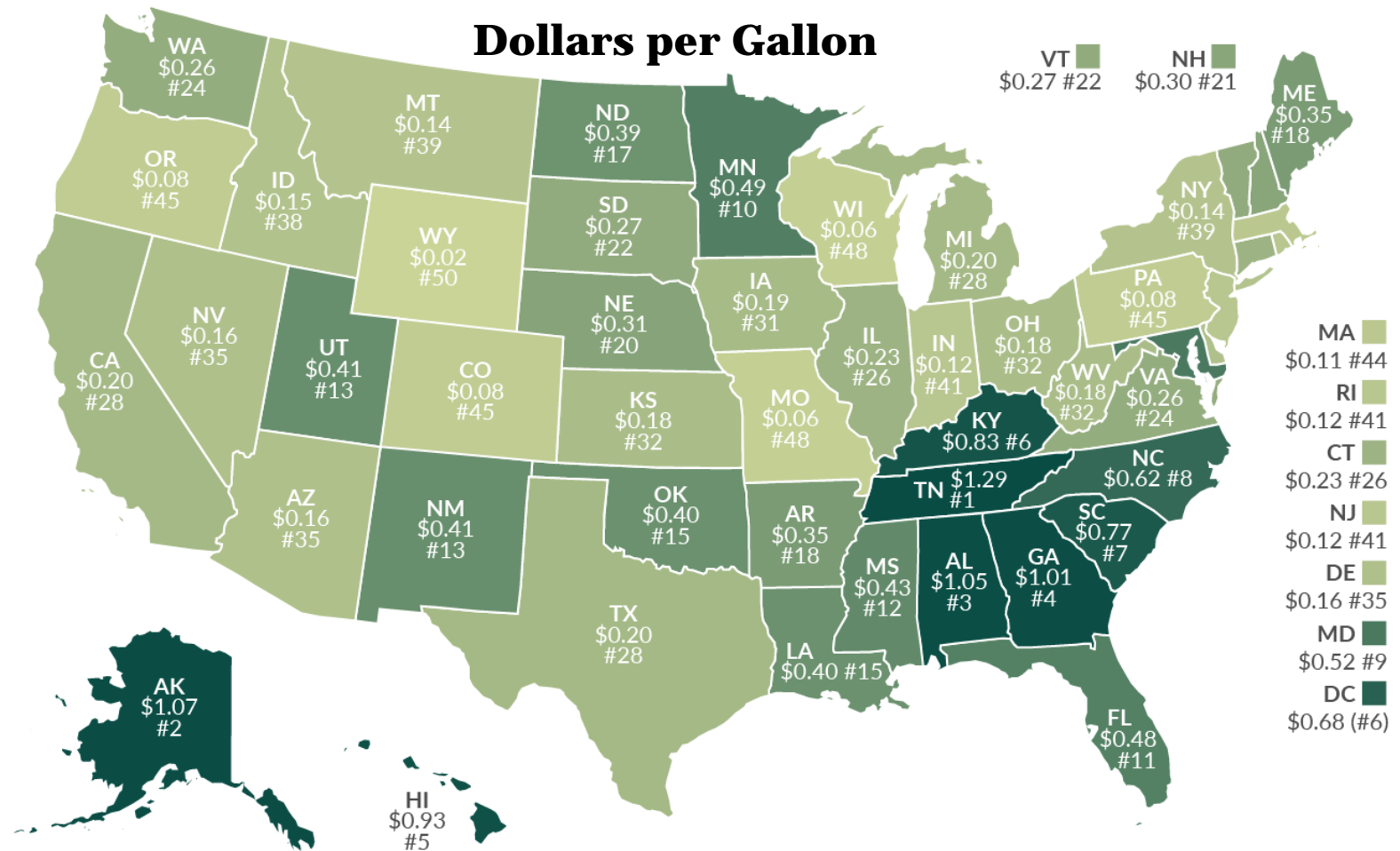


# State Cigarette & Beer Tax Increases, 2000-2015

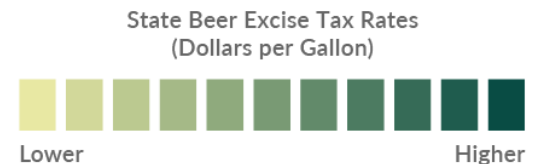


Sources: Campaign for Tobacco Free Kids; NIAAA Alcohol Policy Information System; Brewers Almanac  
 Note: Does not show the multiple reductions in beer taxes and the few reductions in cigarette taxes

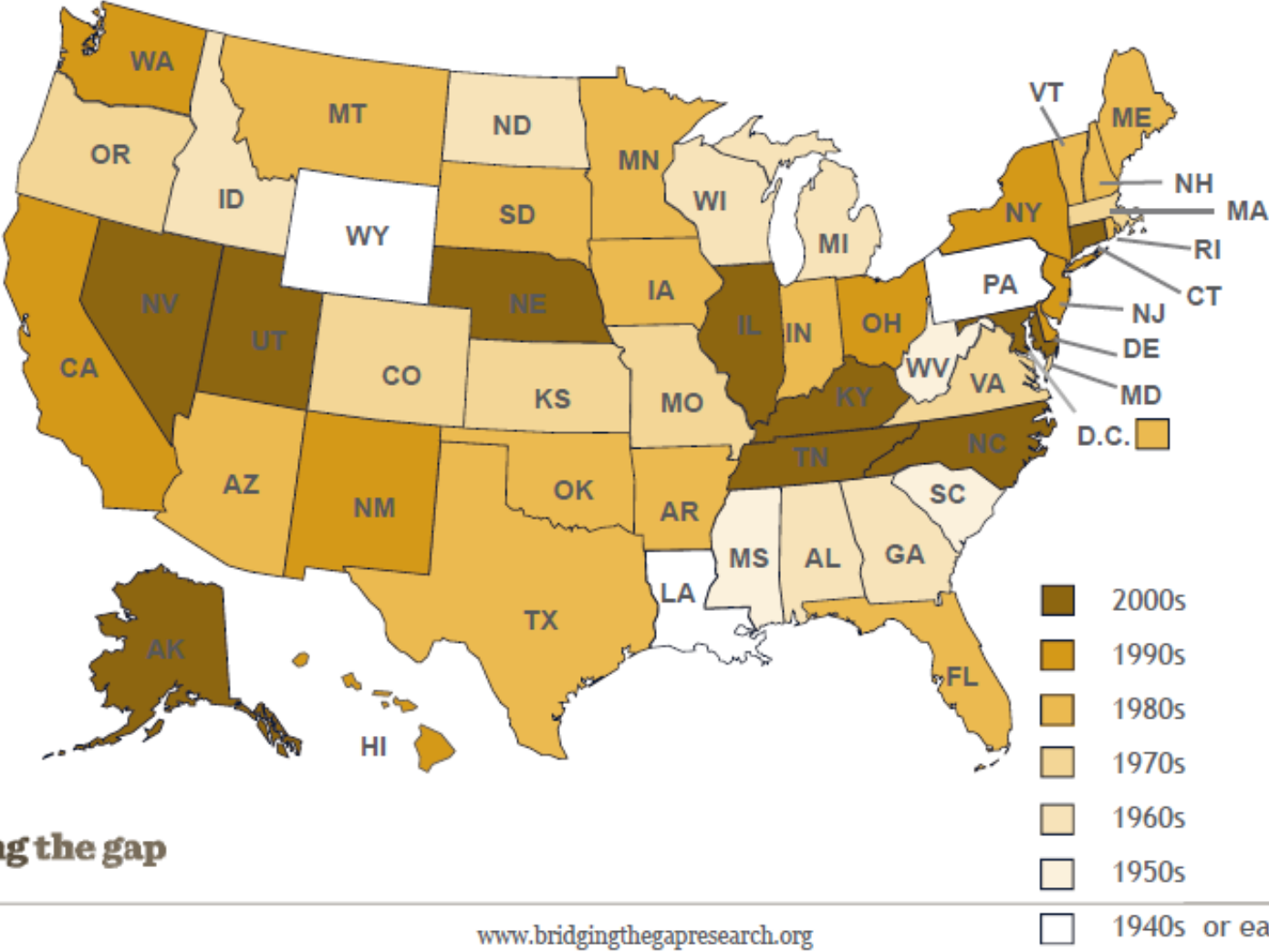
# State Beer Excise Tax Rates – 2017



Note: Rates are those applicable to off-premise sales of 4.7% a.b.v. beer in 12 ounce containers. D.C.'s rank does not affect states' ranks, but the figure in parentheses indicates where it would rank if included. FL, HI, ID, IA, KS, MN, NC, ND, OH, OK, TX, UT, VA, WA, and WI also apply different rates according to alcohol content, place of production, size of container, or place purchased (on- or off-premise or onboard airlines). Statewide local rate included in AL (\$0.52) and GA (\$0.53). Sales tax specific to alcoholic beverages included in AR, MD, MN, and DC. Case fees and/or bottle fees which may vary with the size of container included in AR and RI. Wholesale tax rate converted into a gallonage excise tax rate included in KY (10.5%) and TN (17%).



# Decade of Last Permanent Beer Tax Increase

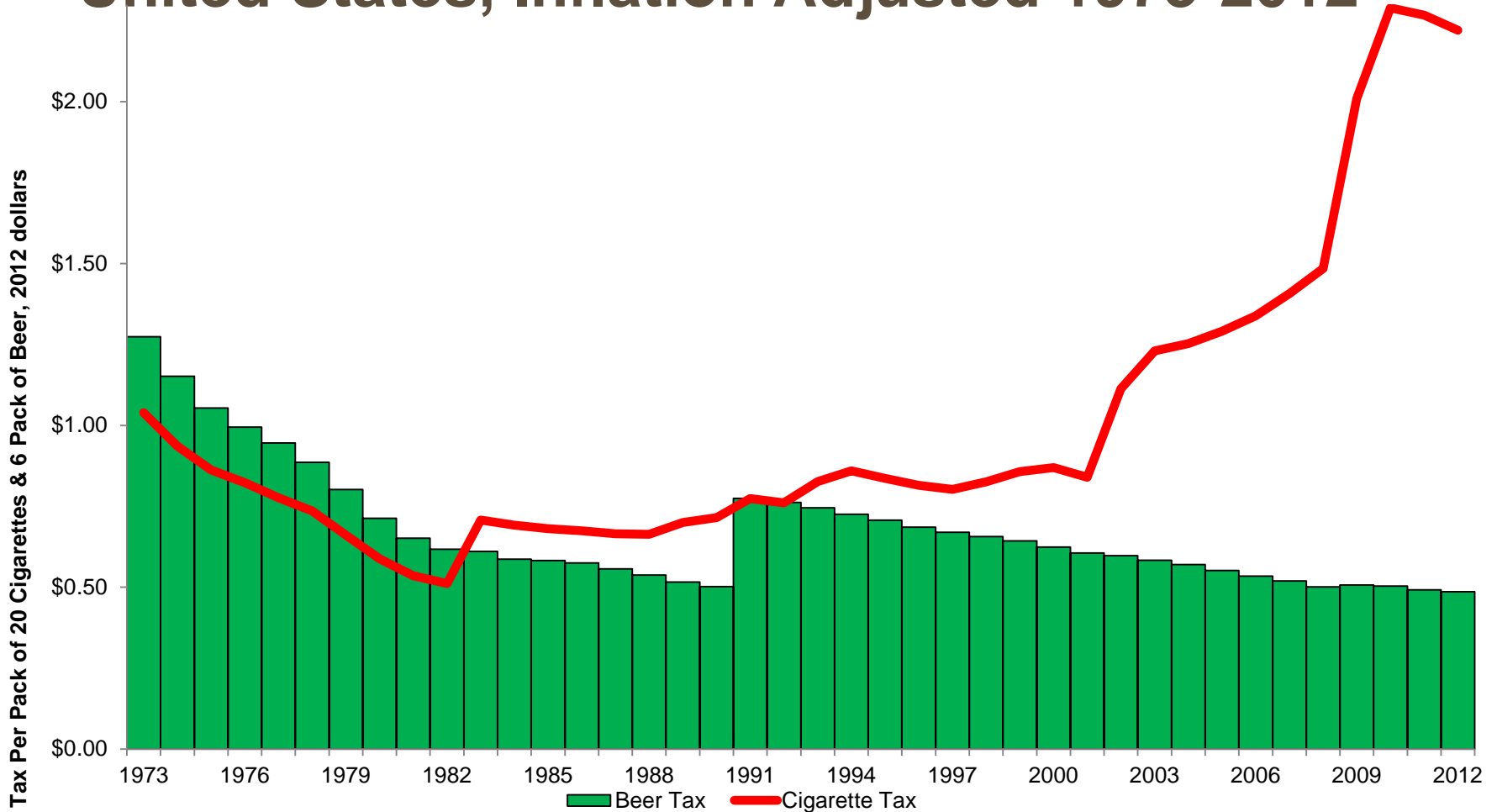


bridging the gap

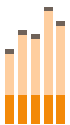




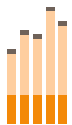
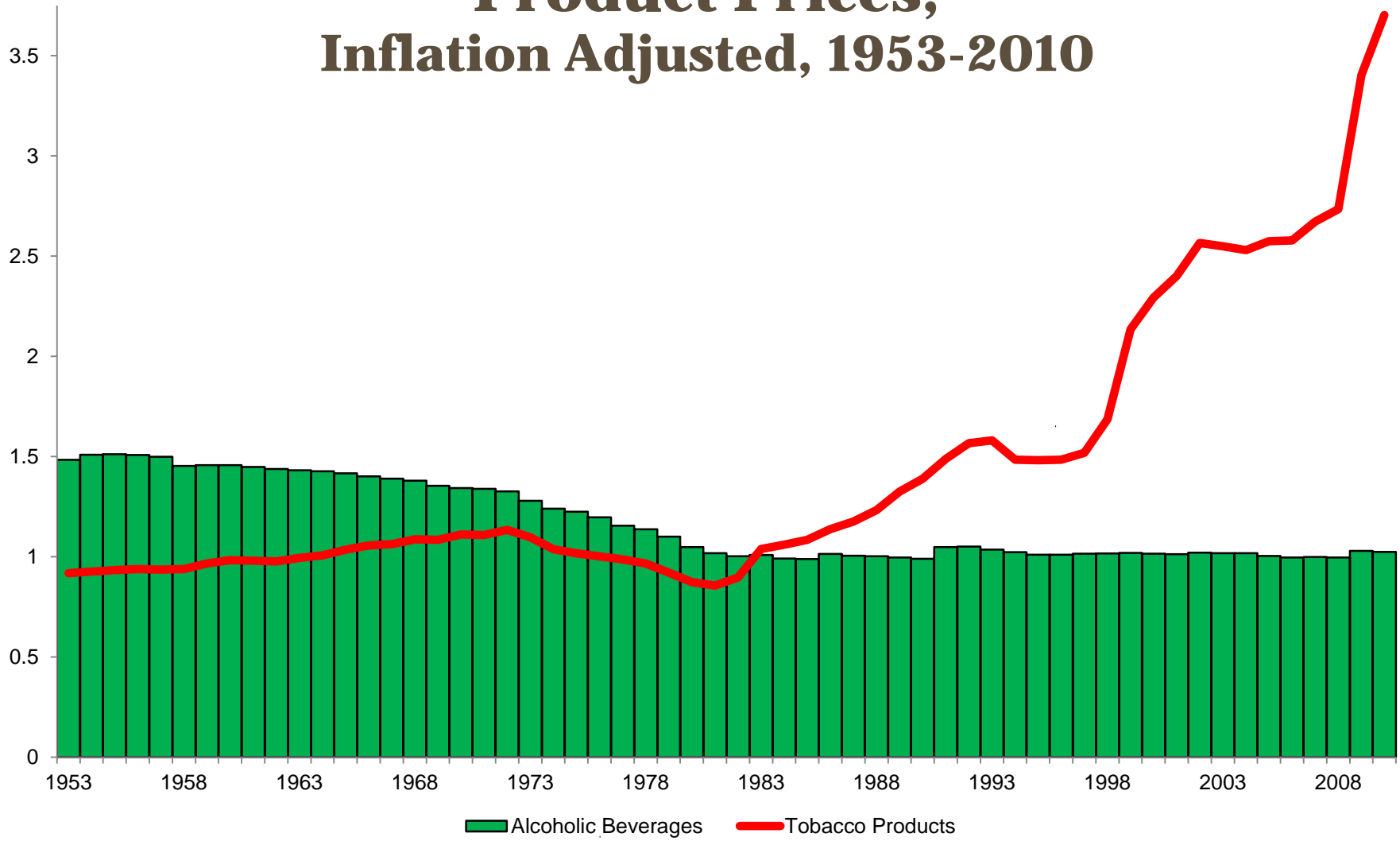
# Average Beer & Cigarette Taxes United States, Inflation Adjusted 1973-2012



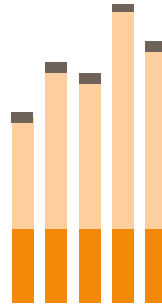
Sources: Campaign for Tobacco Free Kids; NIAAA Alcohol Policy Information System; Brewers Almanac; Bureau of Labor Statistics; and authors calculations. Note: 2012 beer tax is through June 2012



# Alcoholic Beverage & Tobacco Product Prices, Inflation Adjusted, 1953-2010



Source: *Tax Burden on Tobacco*, *Brewers' Almanac*, and author's calculations



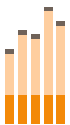
# **Economic Impact**

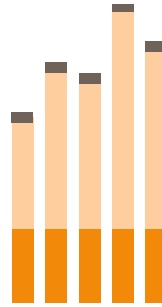
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# **Myths & Facts**

# Common Oppositional Arguments

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





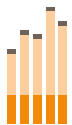
# Impact on Revenues

# Impact on Revenues

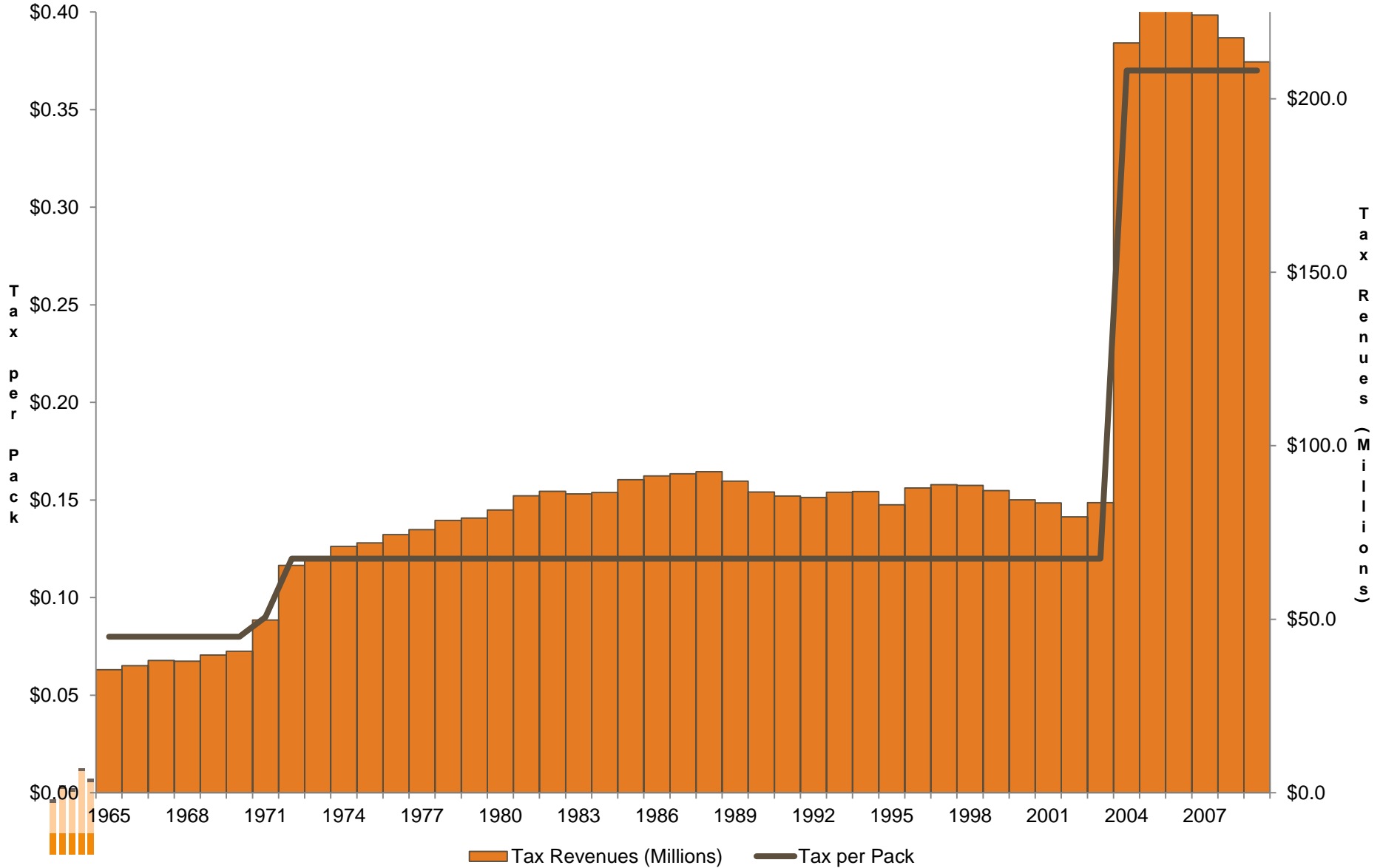
By *J Scott Moody*, 4/2/08, from an [AP story](#):

AUGUSTA — “A coalition of health groups today urged lawmakers to increase the cigarette tax by a \$1 per pack, saying the increase will encourage more people to quit smoking and generate more money for health programs.

Translation: Fewer people smoking equals more cigarette tax revenue? Someone needs a math lesson.”



# Cigarette Tax and Tax Revenues Georgia, 1965-2009



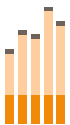
# Positive Effect of Tax Increases on Revenues Results from:

## Low share of tax in price:

- In US, state taxes account for about 25% of price on average
- total taxes account for less than half of price, on average
- *Implies large tax increase has much smaller impact on price*

## Less than proportionate decline in consumption:

- 10% price increase reduces consumption by 4%

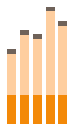




# Sustainability of Cigarette Tax Revenues

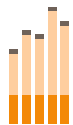
Some suggest increases in revenues won't be sustained over time

- Looked at significant state tax increases over past 20 years where increase was maintained for at least 5 years
  - Separately for states with major tobacco control programs

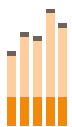
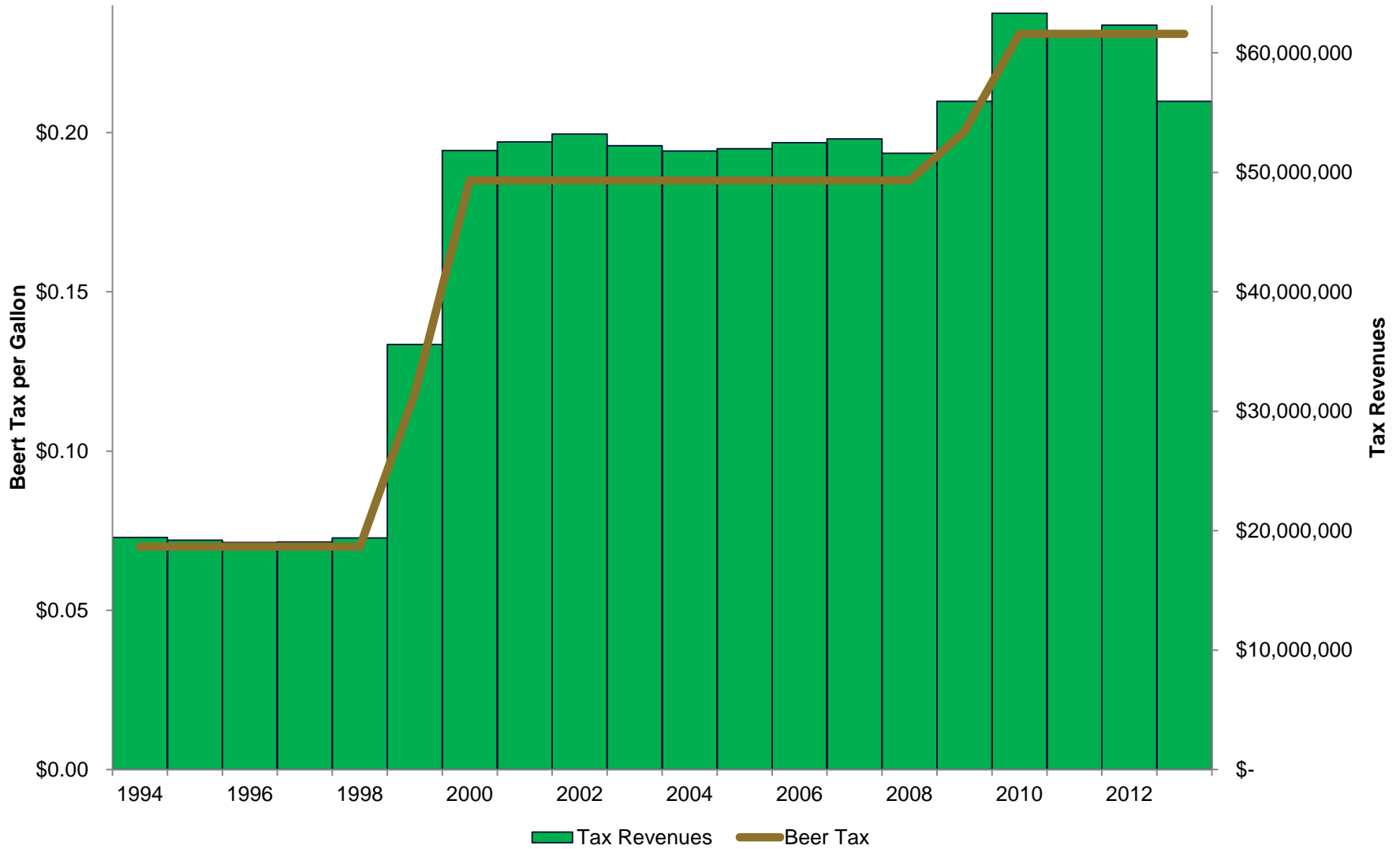


# Sustainability of Cigarette Tax Revenues

- All significant state tax increases resulted in significant increases in state tax revenues
  - Increases in revenues sustained over time in states without tobacco control programs
  - Revenues decline in states with tobacco control programs, but are significantly higher than before tax increase
  - Tobacco tax revenues more predictable than other revenues

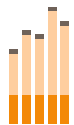
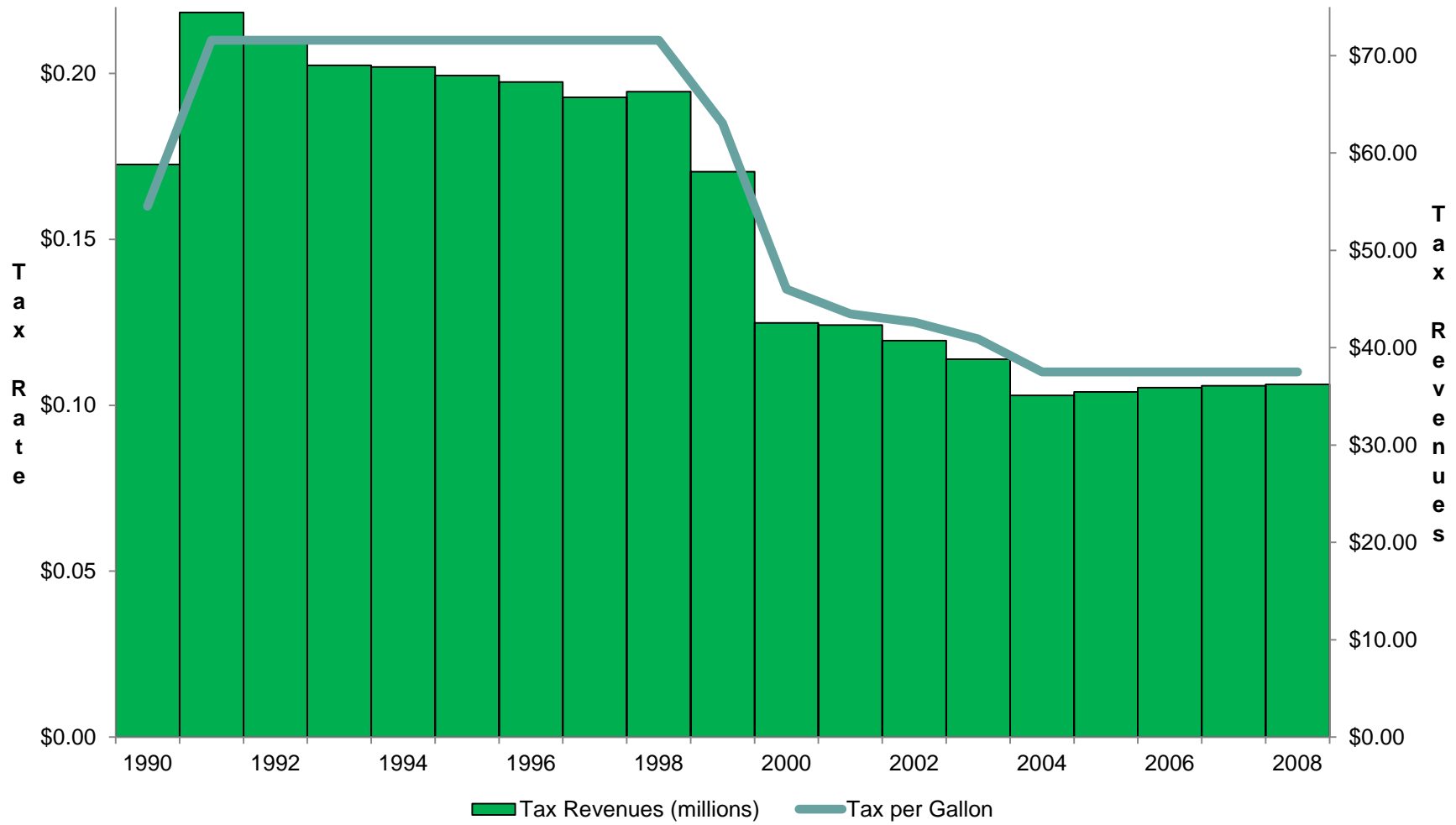


# Beer Taxes & Revenues, Illinois, 1994-2013

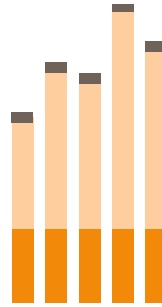


Sources: *Brewer's Almanac*, and author's calculations

# Beer Tax & Revenues, New York, 1990-2008



Source: *Brewers' Almanac*, 2009, and author's calculations



# **Impact on Tax Avoidance & Tax Evasion**

# Tax Avoidance & Evasion

April 1, 2008 – New York Sun

- A pack of premium cigarettes in New York City now costs \$7 or \$8; prices would rise to above \$9. Opponents of the tax increase argue that **higher prices would drive smokers to seek ways to evade the law and purchase cheaper cigarettes from smugglers or in neighboring states, blunting potential revenue gains for the state.** "It's a black market **gold mine**," a senior fellow at the Manhattan Institute, E.J. McMahon, said of the proposed tax.

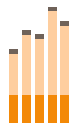
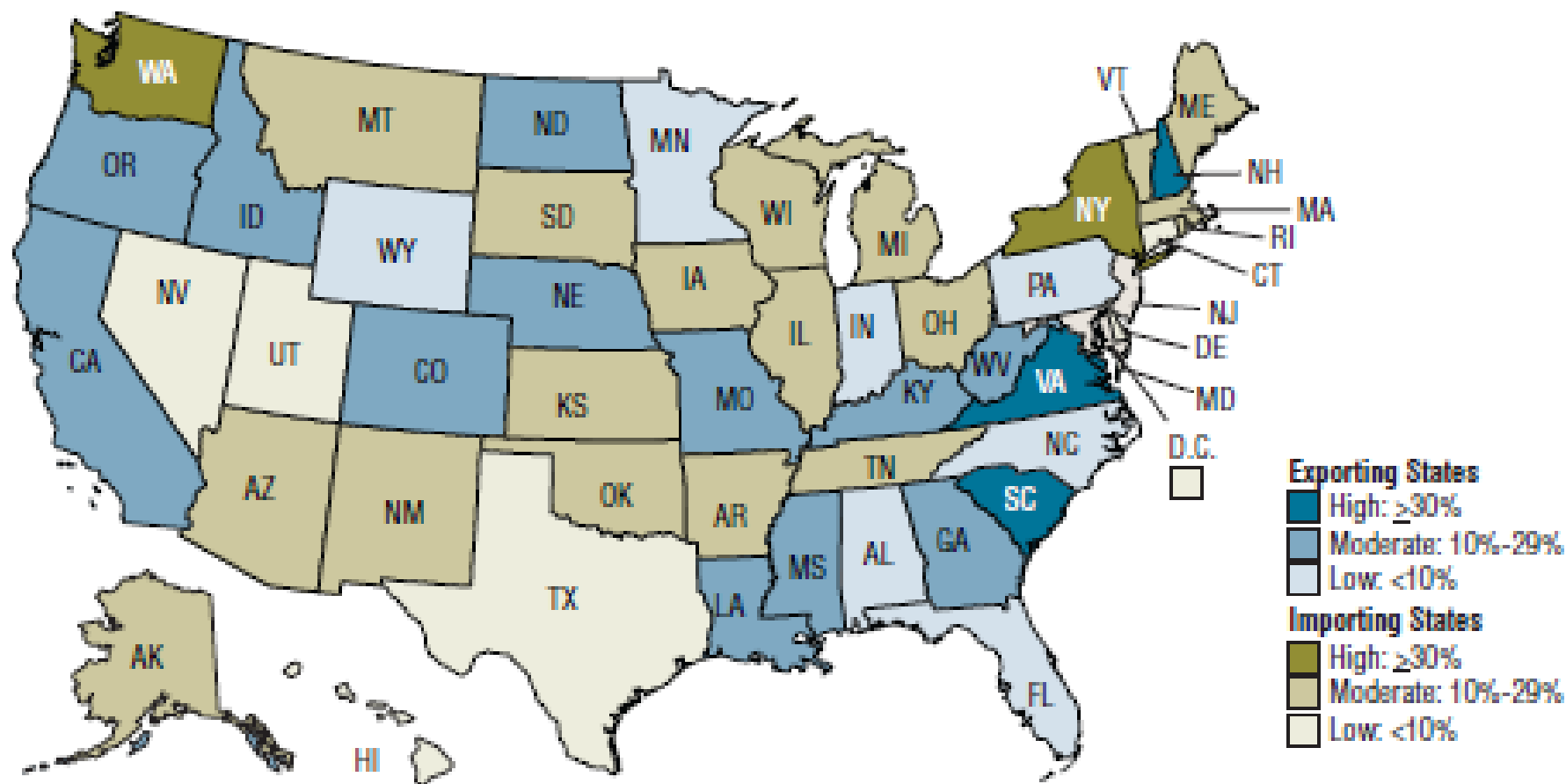


Figure 7. State Cigarette Importing/Exporting Shares, 2010-2011

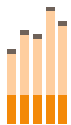
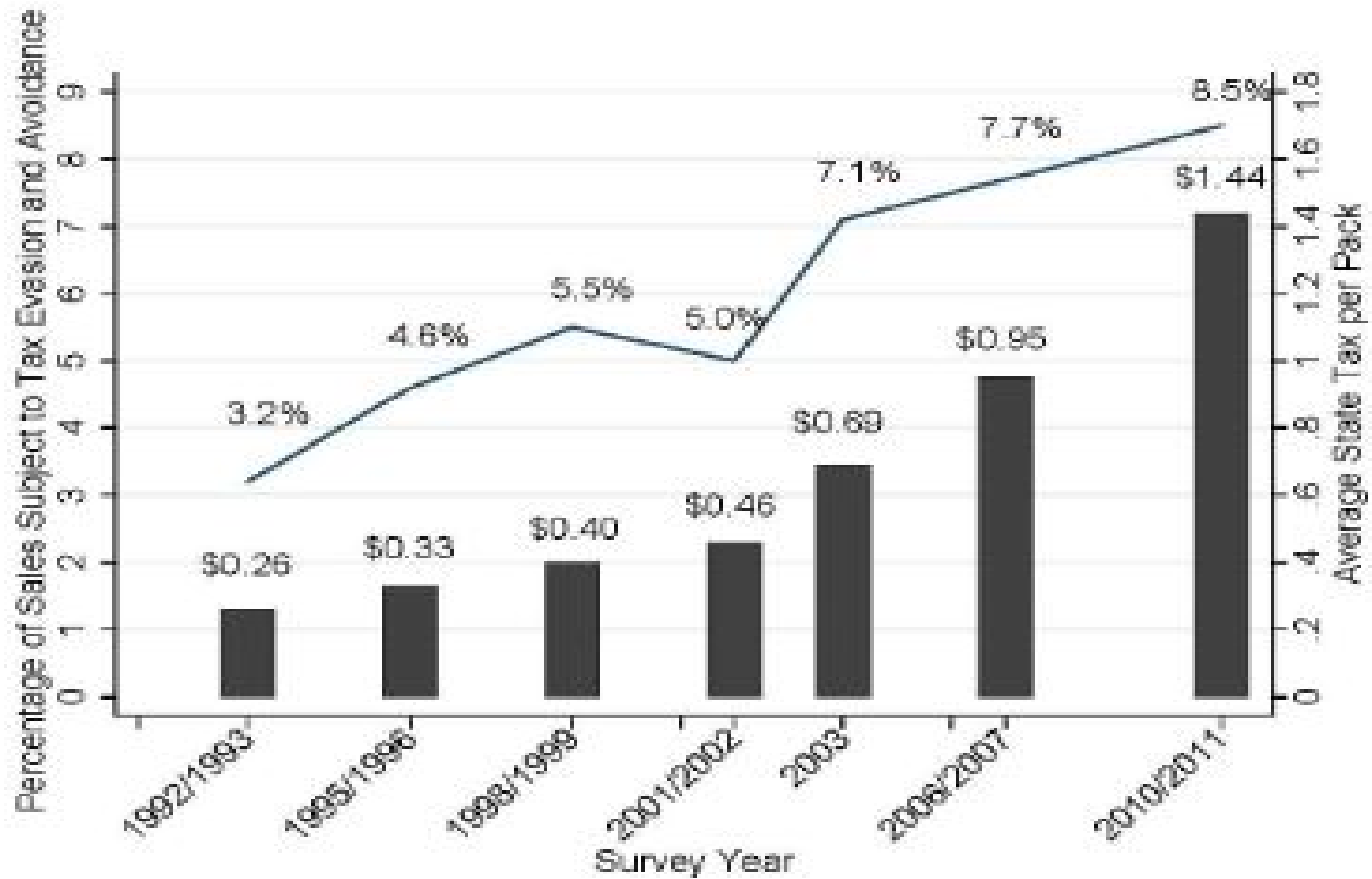


Note: "Importing states" are those where some consumers avoid or evade taxes by obtaining their tobacco products from states or federal tribal lands where taxes are lower. "Exporting states" are those where some tobacco products intended for consumption within that state are purchased by consumers from outside of the state to avoid or evade their "home" taxes.

Source: Created from data in National Research Council and Institute of Medicine, 2015.

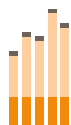
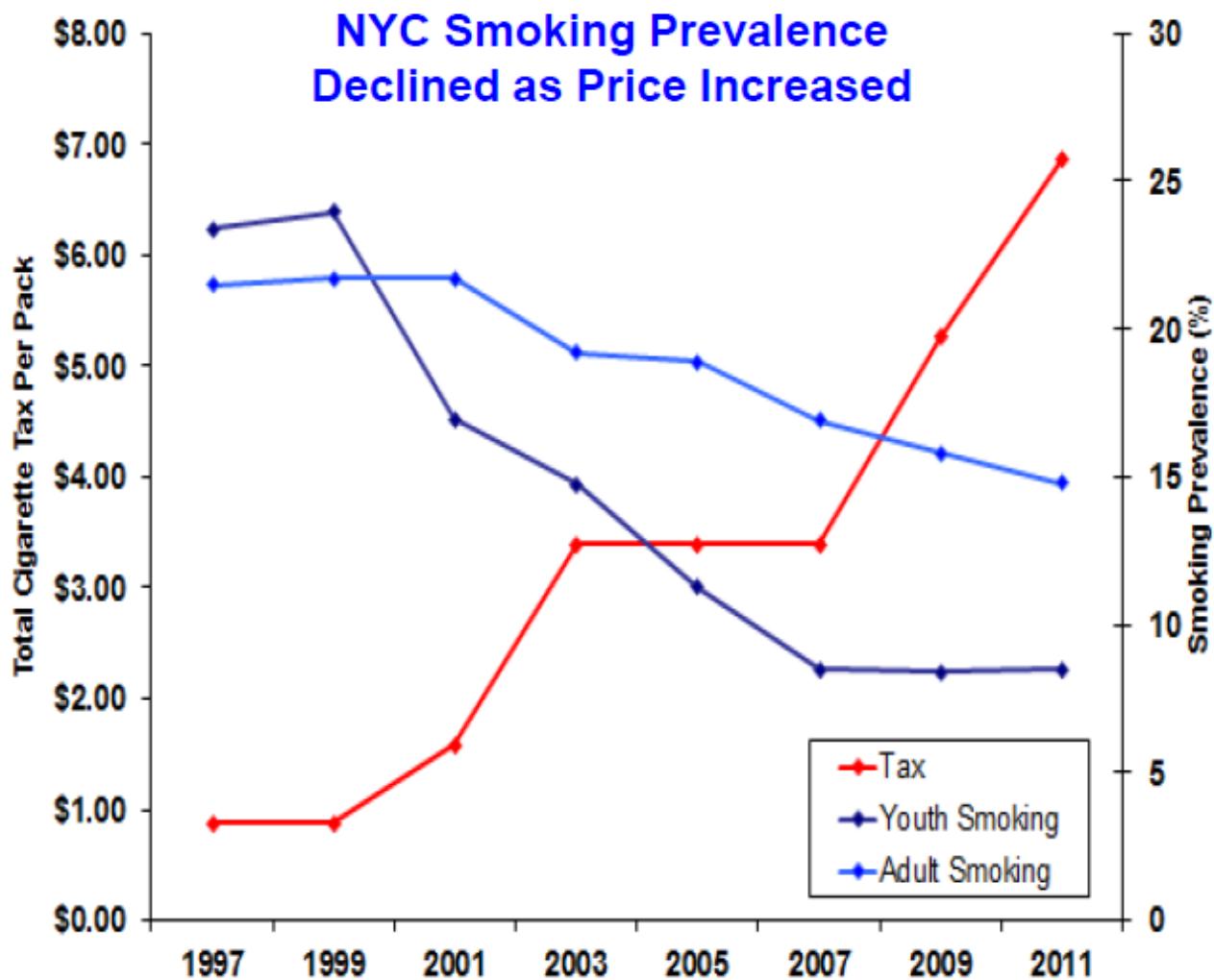


# Trends in Net Tax Avoidance & Evasion in the United States





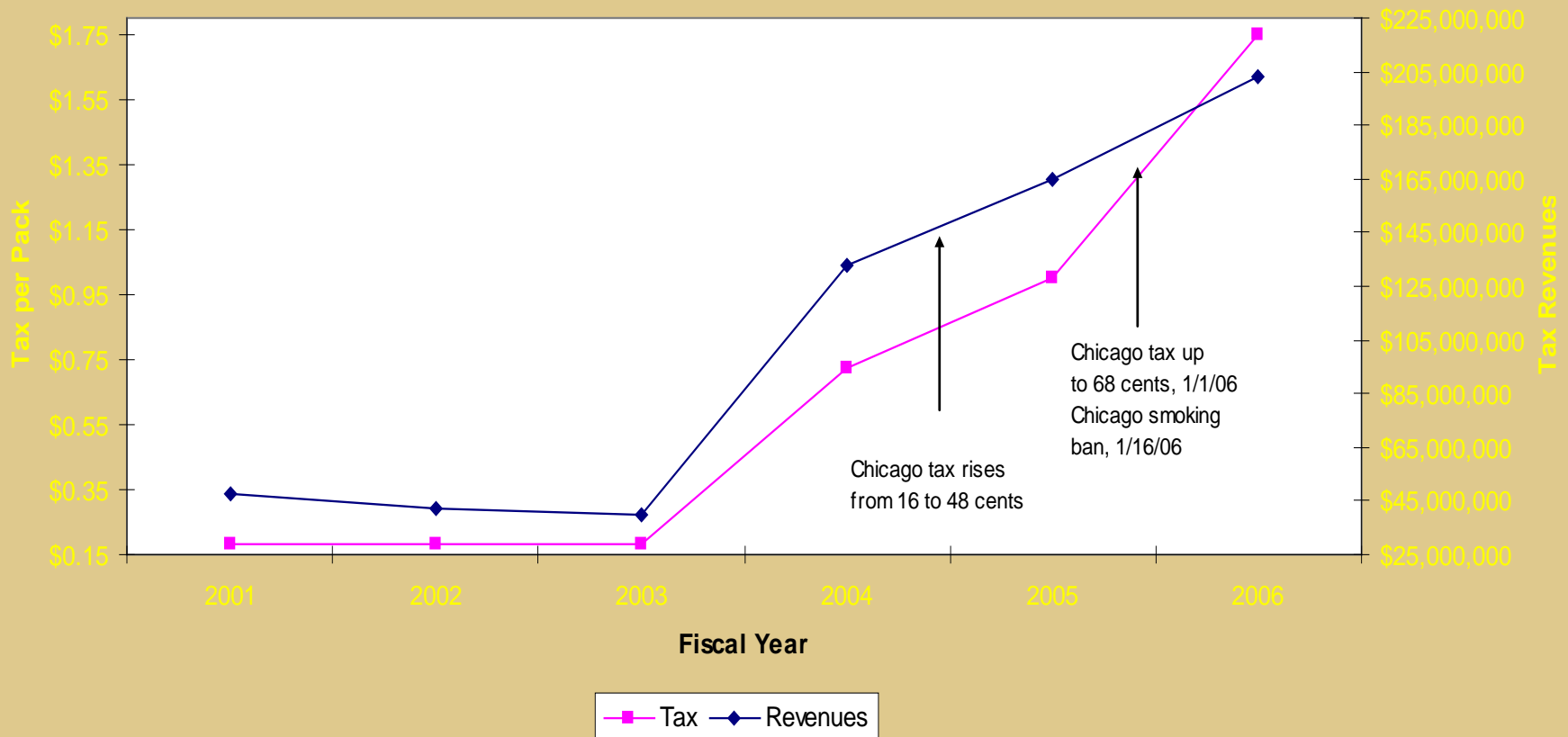
# Tax Avoidance & Evasion Do NOT Eliminate Health Impact of Higher Taxes



# Tax Avoidance & Evasion

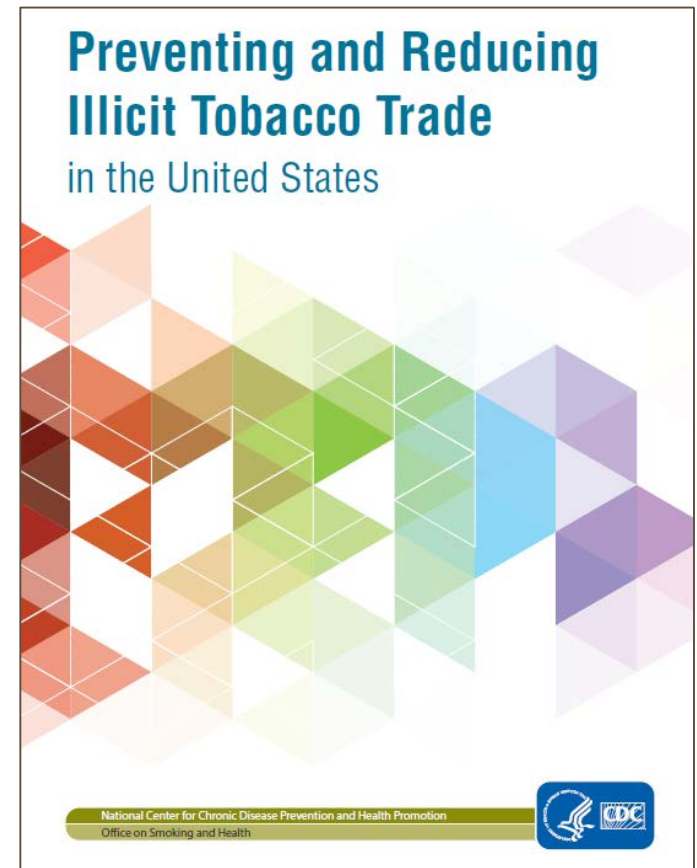
## Do NOT Eliminate Revenue Impact of Higher Taxes

### Cook County Cigarette Tax and Tax Revenues - FY01-FY06

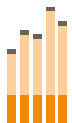


# Curbing Tobacco Tax Avoidance & Evasion

- Adopt the “Three-Legged Stool” approach
  - License of all involved in tobacco product manufacture, import, distribution, and retail sales
  - Apply high-tech tax stamps
  - Increase enforcement resources and levy strong penalties on violators

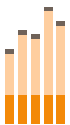


Source: CDC, 2015

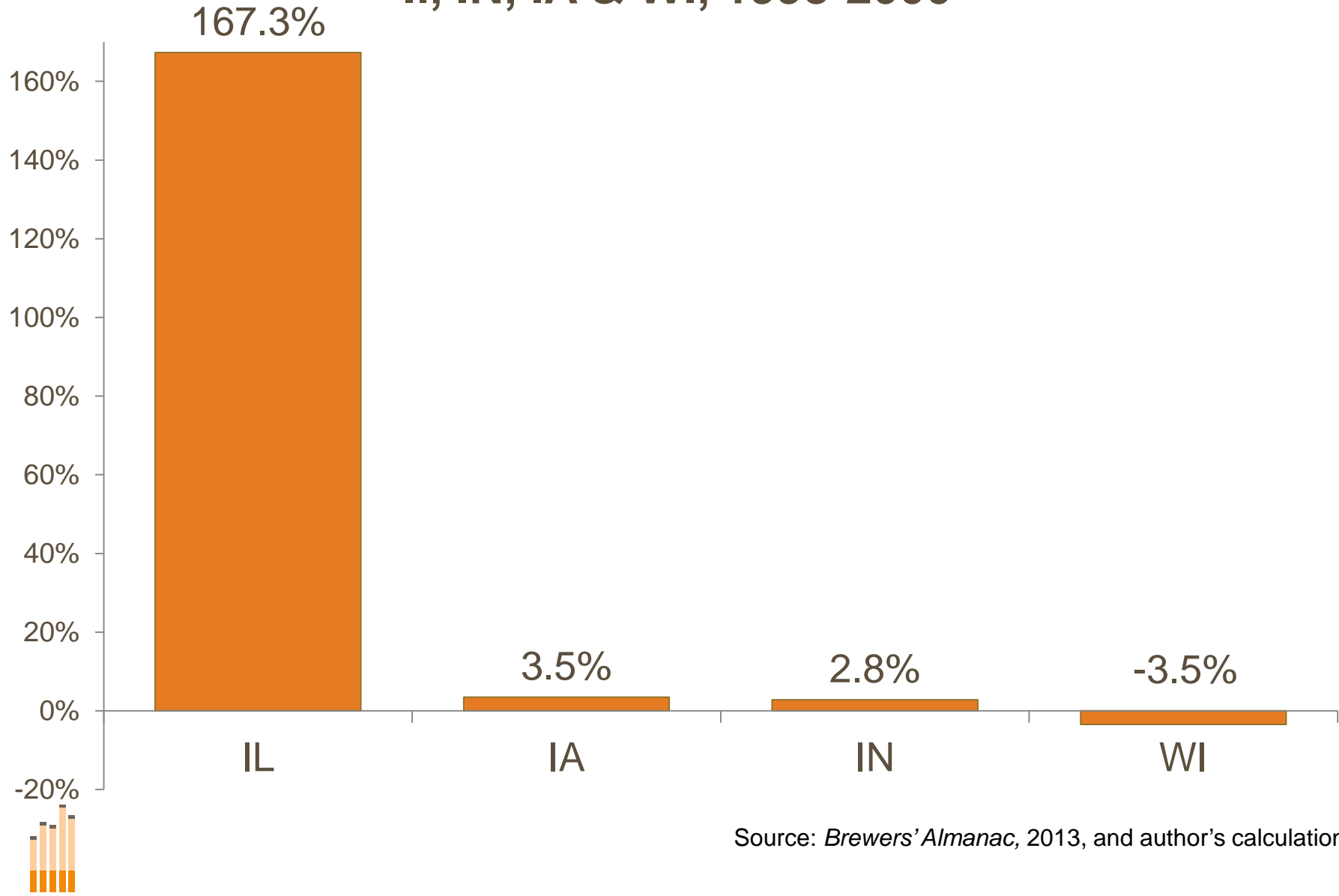


# Alcohol Tax Avoidance & Evasion

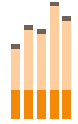
- Little evidence of alcohol tax avoidance & evasion
  - taxes very low relative to prices
  - more costly to avoid/evade taxes
- Illinois – recent experiences with beer taxes
  - IL – raised tax from 7 cents/gallon to 18.5 cents/gallon, August 1999; again to 23.1 cents/gallon September 2009
  - Iowa – 19 cents/gallon throughout
  - Indiana - 11.5 cents/gallon throughout
  - Wisconsin – 6.45 cents/gallon throughout



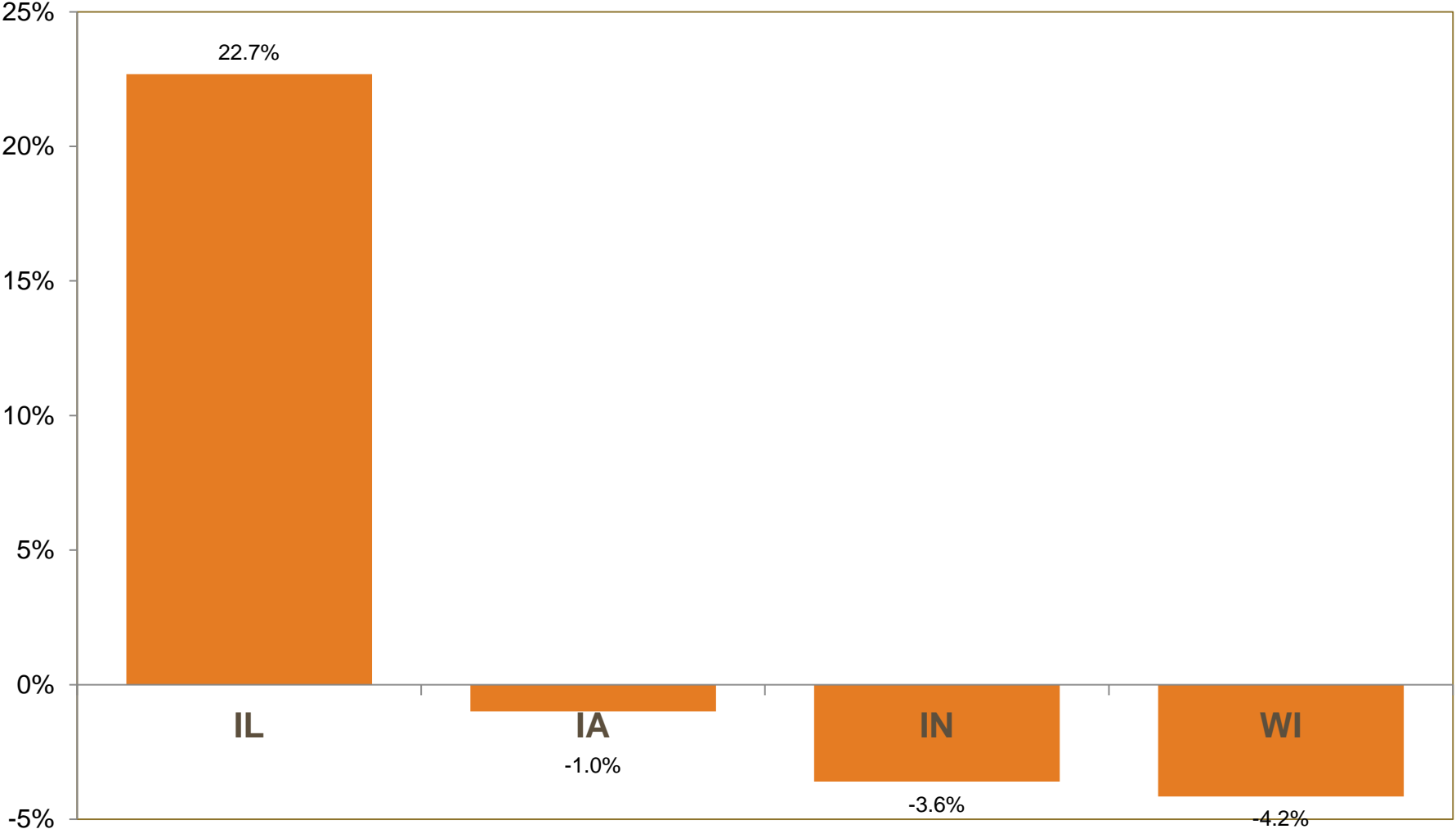
# Percent Change in State Beer Taxes Revenues, IL, IN, IA & WI, 1998-2000



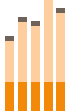
Source: *Brewers' Almanac*, 2013, and author's calculations

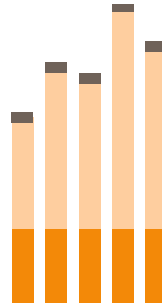


# Percent Change in Beer Taxes Revenues IL, IA, IN, WI 2008-2010



Source: *Brewers' Almanac*, 2013, and author's calculations



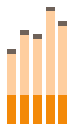


# Impact on the Poor

# Impact on the Poor

July 23, 2010 – San Francisco Examiner

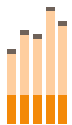
- “Democrats are relying more heavily in their midterm 2010 election message that Republicans care nothing about the poor. Conveniently absent from this analysis is Republican opposition to President Barack Obama’s cigarette tax increase..... **While higher cigarette taxes do discourage smoking, they are highly regressive.** Analyzing a slightly less severe proposal in 2007, the Tax Foundation noted that ‘**no other tax hurts the poor more than the cigarette tax.**’” Peyton R. Miller, special to the Examiner.





# Impact on the Poor

- **Concerns about the regressivity of higher alcohol & tobacco taxes**
  - Alcohol and tobacco excise taxes are regressive, but tax increases can be progressive
    - Greater price sensitivity of poor – relatively large reductions in use among lowest income populations, small reductions among higher income populations
    - Health benefits that result from tax increase are progressive



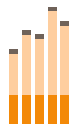
# Who Pays & Who Benefits

## Impact of Federal Tax Increase, U.S., 2009



# Impact on the Poor

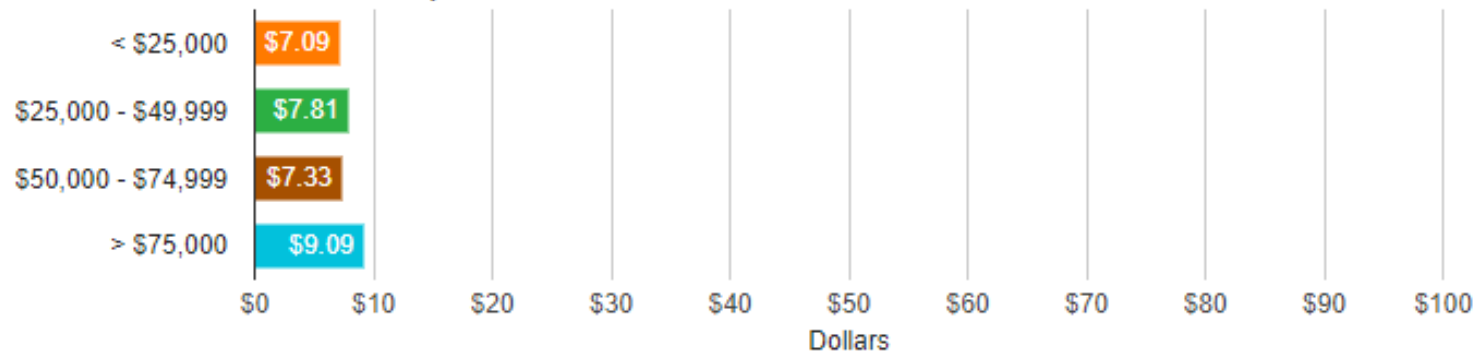
- Need to consider overall fiscal system
  - Key issue with tobacco taxes is what's done with the revenues generated by the tax
  - Greater public support for tobacco tax increases when revenues are used for tobacco control and/or other health programs
  - Net financial impact on low income households can be positive when taxes are used to support programs targeting the poor
  - Concerns about regressivity offset by use of revenues for programs directed to poor



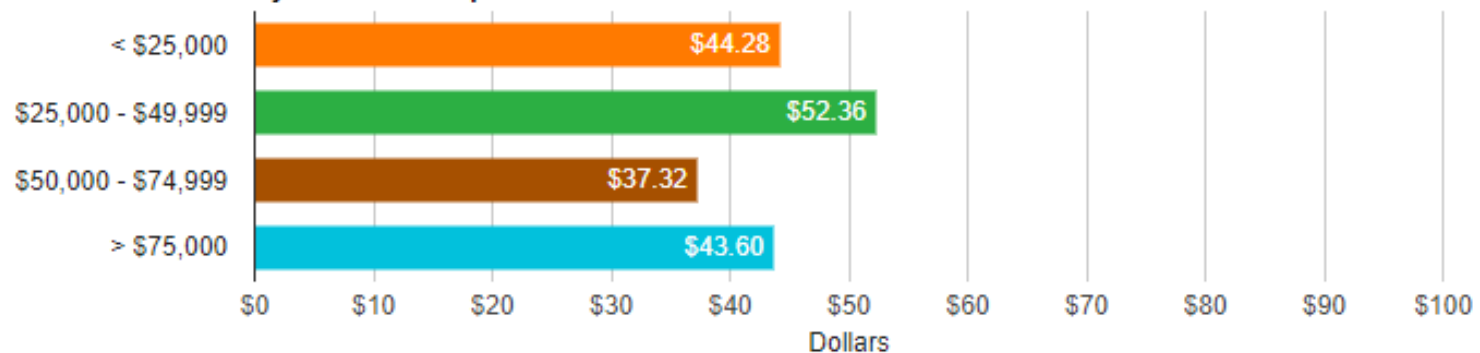
# Alcohol Tax Increases - Who Pays?

## Maryland

Among Adult (18+) Non-Excessive Drinkers, Average Additional Cost for Alcohol Per Year by Income Group

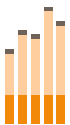


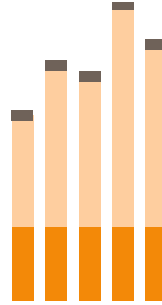
Among Adult (18+) Excessive Drinkers, Average Additional Cost for Alcohol Per Adult Per Year by Income Group



# Alcohol Tax Increases - Who Pays? Maryland

Among Adult (18+) Non-Excessive Drinkers Cost Paid by Income Group (proportion)



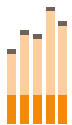


# **Impact on Jobs and Businesses**

# Impact on Jobs

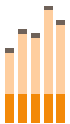
JULY, 14, 2010 – The Associated Press

- RICHMOND, Va. — The tobacco industry is running a full-court press ahead of a federal scientific panel's meeting to discuss how to regulate menthol cigarettes, a still-growing part of the shrinking cigarette market.
- The union representing nearly 4,000 tobacco workers sent a letter to the Food and Drug Administration committee examining the public health effects of the minty smokes, warning that a ban could lead to "severe jobs loss" and black market cigarettes.



# Tobacco Taxes & Jobs

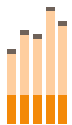
- Tobacco industries argue that it makes significant economic contribution
  - employment in farming, manufacturing, distribution, and related sectors
  - multiplier effects as income earned in tobacco-related jobs spent on other goods & services
  - significant tax revenues from excise, income, corporate, sales taxes
- Consequently, higher taxes that reduce consumption will cause economic losses, including job losses





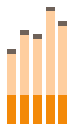
# Tobacco Taxes & Jobs

- Tobacco excise tax will lead to decreased consumption of tobacco products
  - Small loss of jobs in tobacco sector
- Money not spent on tobacco products 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
- Net increase in jobs in almost all states



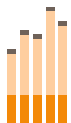
# Tobacco Taxes, Control Policies, and Jobs

Studies	Model and assumptions	Conclusions
<b>United States Michigan: Warner and Fulton 1994</b>	<p>Dynamic regional economic model</p> <p>Domestic consumption expenditures were eliminated, and the rate of consumption decline from 1992 to 2005 doubled.</p> <p>Expenditure was allocated by the average expenditure pattern.</p> <p>Government spending was reduced or kept at the same level by increasing other taxes.</p>	<p>Net job gains: 5,600 in 1992 and 1,500 by 2005; with the consumption decline, 300 in 1992 and 880 by 2005</p>
<b>United States Indiana: Barkey 2005</b>	<p>Dynamic regional economic model</p> <p>Domestic consumption expenditures and tobacco production in 2003 were eliminated.</p> <p>Expenditures were allocated by the average expenditure pattern.</p> <p>Tobacco-induced health care expenditures were released and reallocated. Excess mortality caused by tobacco use was accounted for.</p>	<p>Net gain of 178,200 jobs in 2050, the end of the simulation period. Milestones are 18,000 jobs in 2005; 50,700 jobs in 2010; 97,000 jobs in 2020; 132,000 jobs in 2030; and 159,400 jobs in 2040.</p>
<b>United States Regional Economies: Warner and colleagues 1996</b>	<p>Dynamic regional economic model</p> <p>Domestic consumption expenditures were eliminated, and the rate of consumption decline from 1993 to 2009 doubled.</p> <p>Expenditures were allocated by the average expenditure pattern.</p> <p>Government spending was reduced or kept at the same level by increasing other taxes.</p>	<p>Net job gains: 47 in 1993 and 133,000 by 2000; with the consumption decline: 78 in 1993 and 19,719 by 2000</p>



# Tobacco Taxes, Control Policies, and Jobs

Studies	Model and assumptions	Conclusions
<p><b>United Kingdom: Buck and colleagues 1995</b></p>	<p>Static input–output model This model describes a 40% decline in tobacco product expenditures. Expenditures were allocated by recent quitter, nonsmoker, former smoker, and average expenditure pattern. Government spending was reduced or kept at the same level by increasing other taxes.</p>	<p>Net gain of 155,542 jobs; or 115,688 full-time equivalent jobs in 1990 with the recent quitter expenditure and the same government spending</p>
<p><b>Canada: Irvine and Sims 1997</b></p>	<p>Static input–output model This model describes a 20% decline in tobacco product expenditures. Expenditures were allocated by the average expenditure pattern. Government spending was reduced.</p>	<p>Net loss of 6,129 jobs in 1995</p>
<p><b>South Africa: Van der Merwe and Abedian 1999</b></p>	<p>Static input–output model Domestic consumption expenditures were eliminated, and the rate of consumption decline in 1995 doubled. Expenditures were allocated by recent quitter and average expenditure pattern. Government spending was reduced or kept at the same level by increasing other taxes.</p>	<p>Net gain of 50,236 jobs occurred in 1995 by eliminating tobacco expenditures, with consumers acting as recent quitters and the same government spending</p>



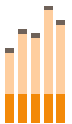
# Tobacco Taxes, Control Policies, and Jobs

Studies	Model and assumptions	Conclusions
<b>Bangladesh:</b> <b>Van der Merwe 1998</b>	<p>Static input–output model</p> <p>Domestic consumption expenditures and all tobacco production for tobacco products and bidis in 1994 were eliminated.</p> <p>Average input–output pattern changed, and all tobacco production was shifted to alternative agriculture products.</p> <p>Because of increases in other taxes, no change in government spending occurred.</p>	<p>Net gain of 10,989,192 jobs in 1994</p>
<b>Egypt:</b> <b>Nassar and Metwally 2003</b>	<p>Static input–output model</p> <p>A 10% increase in cigarette prices and a one unit increase of education level (as a proxy for non-price tobacco control measures) occurred.</p> <p>Expenditures were allocated by the average expenditure pattern.</p> <p>Because of increases in other taxes, no change in government spending occurred.</p>	<p>Net gain of 6,108,517 jobs in 1997 for the price increase, and net gain of 6,000,134 jobs in 1997 under non-price measures</p>
<b>Indonesia:</b> <b>Ahsan and Wiyono 2007</b>	<p>Static input–output model</p> <p>Percentage increases of 25%, 50%, and 100% occurred in the cigarette tax.</p> <p>Expenditures were allocated by the average expenditure pattern.</p>	<p>Net gain of 84,340 jobs with a 25% tax increase; net gain of 140,567 jobs with a 50% tax increase; and net gain of 281,135 jobs with a 100% tax increase</p>



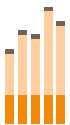
# Tobacco Taxes and Small Businesses

- More recent argument that higher taxes will harm convenience stores
- Huang & Chaloupka (2012)
  - Number of convenience stores, by state, 1997-2009
  - State cigarette tax rates and smoke-free air policies
  - Economic conditions (income, unemployment, gas prices)
  - Multivariate, fixed effects econometric models
  - Find that higher taxes associated with **increase** in convenience store business
    - Likely due to spending on other products, overshifting of taxes



# Tobacco Control and Overall Economic Activity

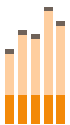
- Chaloupka & Peck (2009)
  - Adaptation of Murphy & Topel (2003) assessment of the broader economic impact of medical research
  - Accounts for increased life expectancy, improved productivity resulting from improvements in health
  - We estimated impact of reductions in cigarette smoking in the U.S. in the 40 years following the 1964 Surgeon General's report
  - Estimate that by 2004, increased economic activity by \$300-\$700 billion; (equivalent to 2.4% - 5.7% of GDP)



# Tobacco Taxes and Jobs

Concerns about job losses in tobacco sector have been addressed using new tax revenues:

- Turkey, Philippines among countries that have allocated tobacco tax revenues to helping tobacco farmers and/or those employed in tobacco manufacturing make transition to other livelihoods
  - Crop substitution programs, retraining programs

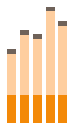
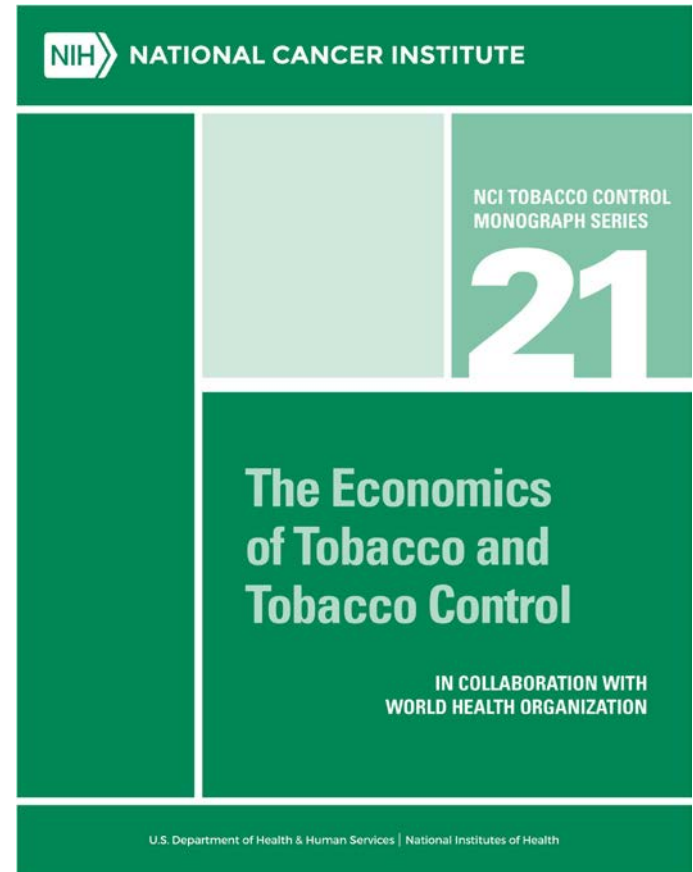


# Economic Impact of Tobacco Control

Major Conclusion

#7:

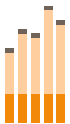
Tobacco control  
does not harm  
economies.





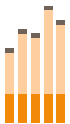
# Alcohol Taxes & Jobs

- Alcohol taxes are “regressive and destructive – eliminating jobs, hurting working men and women.”
- “When beer taxes are cut, new jobs are created, which increases income taxes and related revenues for the government.”
- A rollback of the doubling of the Federal beer tax in 1991 “could restore an estimated 50,000 jobs to the U.S. economy.”
- “A proposal that passed this year to add sales tax to the industry’s already high tax burden in Massachusetts is expected to reduce state economic activity by over \$85 million eliminating some 800 jobs in the process.”
- 2009 proposed alcohol tax increases in California would cause 20% drop in sales, resulting in 38,200 lost jobs and millions of dollars in lost tax revenue.



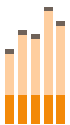
# Gross vs. Net Employment Impact

- Gross Impact:
  - Alcohol excise tax increases will lead to decreased consumption of alcoholic beverages
    - Loss of jobs in alcohol-dependent/related sectors
- Net Impact:
  - Money not spent on alcoholic beverages will be spent on other goods and services
    - Gains in jobs in other sectors
  - Increased tax revenues spent by government
    - Additional job gains in other sectors

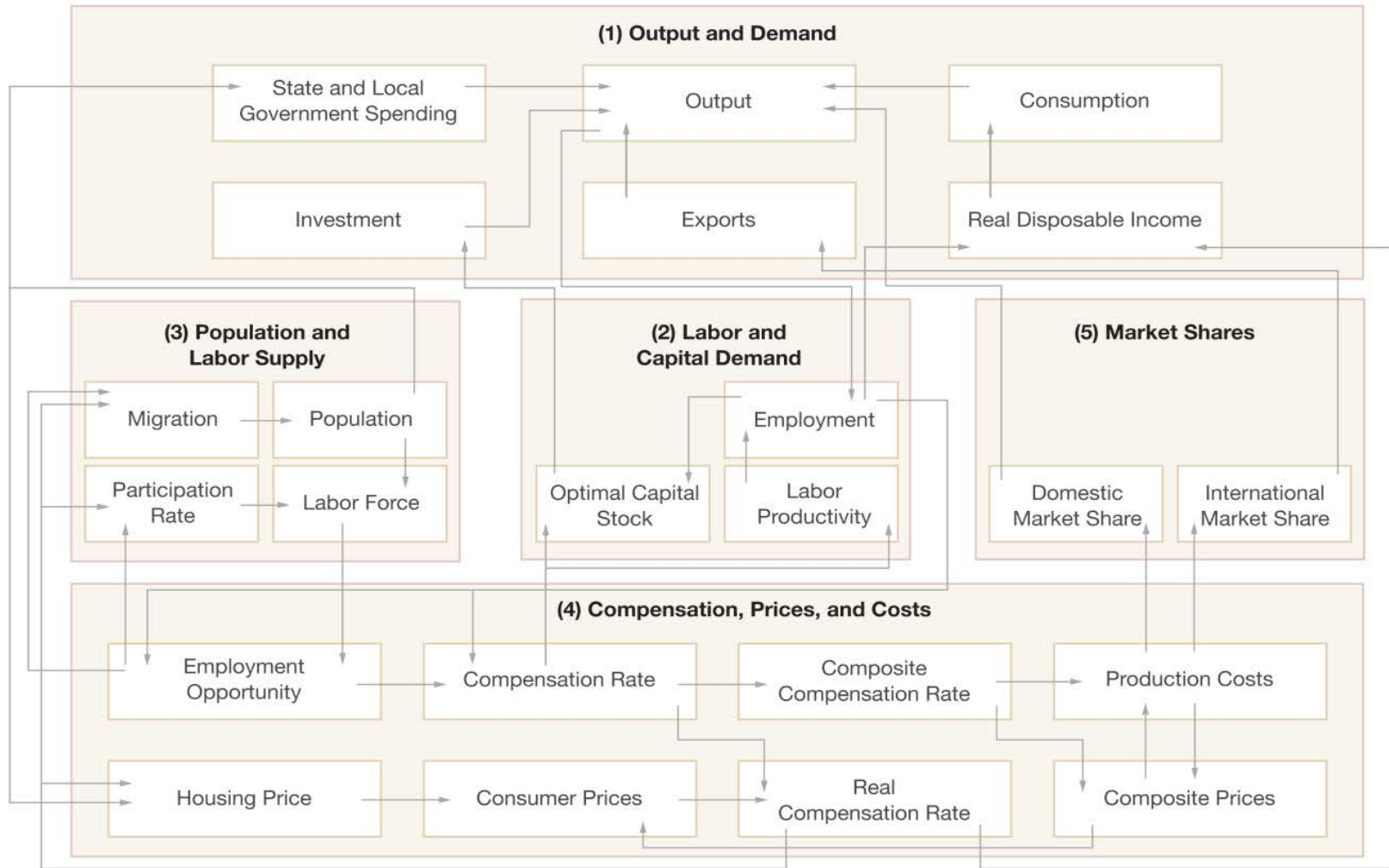


# REMI Model

- Regional Economic Models, Inc.
  - The REMI model is a structural regional economic forecasting and policy analysis model.
  - REMI is used extensively by states, local governments and other agencies.
  - It has been used to examine the employment and/or economic impact of:
    - a tax credit program in Michigan
    - the 9/11 disaster in the New York region
    - much more

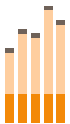


# REMI Model



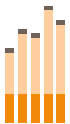
# Alcoholic Beverage Tax Modeling: Assumptions and Key Parameters

- Four alternative tax scenarios:
  - 5, 10 and 25 cent per drink increase in excise taxes
  - 5% sales tax on alcoholic beverages
- All tax increases are fully passed on to consumers
- Net-of tax alcoholic beverage prices assumed constant within and across states
  - Differences in prices across states result from differences in state taxes on alcoholic beverages
- Alternative scenarios for spending of new tax revenue:
  - According to spending of general revenues
  - Dedicated to health care sector



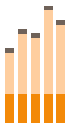
# Alcoholic Beverage Tax Modeling: Assumptions and Key Parameters

- Alcohol prices (Klitzner, 2011); net-of-tax prices:
  - \$3.14 for a six-pack (\$5.58/gallon)
  - \$4.35 for a fifth of wine (\$21.80/gallon)
  - \$9.04 for a fifth of spirits (\$45.20/gallon)
- State-specific shipment data in gallons (Brewers Almanac 2011)
- State-specific tax rates (NIAAA's Alcohol Policy Information System 2011)



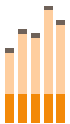
# Alcoholic Beverage Tax Modeling: Assumptions and Key Parameters

- Own-price elasticities of demand (from Community Guide review):
  - Beer: -0.500
  - Wine: -0.640
  - Spirits: -0.790
- No reliable estimates of cross-price elasticities
  - Sensitivity analysis applying alternative estimates for excise tax increases
- Markups assumed constant (from Economic Census):
  - Alcohol retailing: 26.9%
  - Alcohol wholesale: 25.9%
  - Drinking places: 9.0%



# Alcoholic Beverage Tax Simulations

- Use REMI to model 5 states:
  - Arkansas, Florida, Massachusetts, New Mexico, and Wisconsin
  - Geographic diversity; differences in share of employment from alcohol manufacturing & distribution
  - Remaining states estimated based on findings from 5 states
- Beverage Industry Effect
- Income/Substitution Effect
- Government Revenue Effect
  - Spend as general revenue
  - Dedicated to health care
- Gross (industry only) vs. Net (total) effect







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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

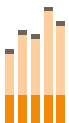
Excise taxes

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.



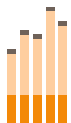
**Table 2**

Simulated impacts of alcohol tax increases on employment (number of jobs) with the additional tax revenues allocated to general revenues in selected sectors in Arkansas, Florida, Massachusetts, New Mexico, and Wisconsin.

	Arkansas		Florida		Mass.		New Mexico		Wisconsin	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
<b>Changes in employment from 5-cent excise tax</b>										
Total employment change	- 323	802	- 3281	4583	- 1009	978	- 334	653	- 1078	1167
Private sector (non-farm)	- 291	- 21	- 3029	- 15	- 940	- 281	- 293	- 13	- 990	- 385
Beverage manufacturing <sup>a</sup>	- 16	- 16	- 155	- 154	- 55	- 55	- 21	- 21	- 45	- 45
Retailers	- 89	- 66	- 818	- 590	- 280	- 245	- 85	- 57	- 303	- 264
Wholesalers	- 45	- 35	- 442	- 327	- 131	- 107	- 48	- 38	- 151	- 126
Food services & drinking places	- 86	- 68	- 667	- 513	- 225	- 192	- 71	- 53	- 282	- 245
Rest of private sector <sup>b</sup>	- 850	596	- 8392	2984	- 2640	98	- 852	471	- 2849	102
State and local government	- 32	822	- 252	4597	- 69	1259	- 41	666	- 89	1551
Percent total employment change	- 0.020	0.050	- 0.031	0.043	- 0.092	0.089	- 0.007	0.014	- 0.030	0.032
<b>Changes in employment from 5% sales tax</b>										
Total employment change	- 408	789	- 4042	4493	- 1248	898	- 390	621	- 1315	991
Private sector (non-farm)	- 374	- 82	- 3769	- 460	- 1173	- 449	- 348	- 57	- 1225	- 589
Beverage manufacturing	- 17	- 17	- 166	- 165	- 58	- 58	- 21	- 21	- 44	- 44
Retailers	- 65	- 39	- 637	- 380	- 209	- 168	- 62	- 32	- 214	- 170
Wholesalers	- 45	- 33	- 444	- 317	- 130	- 103	- 45	- 35	- 142	- 116
Food services & drinking places	- 189	- 169	- 1467	- 1296	- 501	- 465	- 150	- 130	- 608	- 568
Rest of private sector	- 909	618	- 9058	3171	- 2818	120	- 866	476	- 2940	72
State and local government	- 34	871	- 274	4953	- 74	1348	- 42	678	- 91	1581
Percent total employment change	- 0.026	0.050	- 0.038	0.043	- 0.114	0.082	- 0.009	0.014	- 0.037	0.028

<sup>a</sup> Beverage manufacturing consists of wineries, breweries, and distilleries.

<sup>b</sup> Rest of private sector consists of private sector employment other than beverage manufacturing, retailers, wholesalers, and food services & drinking places.



**Table 3**

Simulated impacts of alcohol tax increases on employment (number of jobs) by government revenue allocation in Arkansas, Florida, Massachusetts, New Mexico, and Wisconsin.

		5-Cent excise tax	5% sales tax
Arkansas	Gross	- 323	- 408
	Net (general revenue)	802	789
	Net (health care sector <sup>a</sup> )	67	11
Florida	Gross	- 3281	- 4042
	Net (general revenue)	4583	4493
	Net (health care sector)	1048	687
Massachusetts	Gross	- 1009	- 1248
	Net (general revenue)	978	898
	Net (health care sector)	250	121
New Mexico	Gross	- 334	- 390
	Net (general revenue)	653	621
	Net (health care sector)	139	98
Wisconsin	Gross	- 1078	- 1315
	Net (general revenue)	1167	991
	Net (health care sector)	1064	887


<sup>a</sup> Health care sectors consist of health practitioners; outpatient, laboratory, and other ambulatory care services; home health care services; hospitals; and nursing and residential care facilities.



← → ↻ [www.camy.org/research-to-practice/price/beer-tax-tool/](http://www.camy.org/research-to-practice/price/beer-tax-tool/)


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## Consumer Costs and Job Impacts from State Alcohol Tax Increases

See how a tax increase could affect *your* state...

**Step 1: Choose state:**

Alabama

**Step 2: Choose a tax increase:**

\$0.05 \$0.10 \$0.25 5%

TAX PER DRINK — SALES TAX —

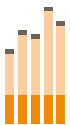
**GET RESULTS**

**Social and Health Effects of Changes In Alcohol Prices - A research collaboration between:**

- University of Florida
- University of Illinois at Chicago
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- Johns Hopkins Bloomberg School of Public Health

This web tool was supported by Contract Number 200-2011-40800 from The Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

[Methodology \(PDF\)](#)



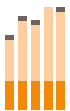
<http://www.camy.org/research-to-practice/price/beer-tax-tool/>

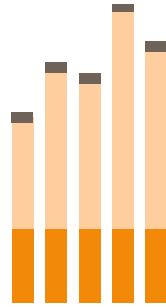
# Alcohol Tax Increases & Jobs in Maryland

## Effects on Employment

*Potential Impact of Alcohol Tax Increases on Jobs*

Tax/Drink	General Fund	Healthcare
\$0.05	937	484
\$0.10	1811	935
\$0.25	4138	2129
Sales Tax		
5%	834	363





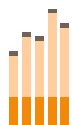
# Ongoing Research

-

## Extending from Tobacco to Alcohol

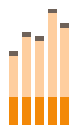
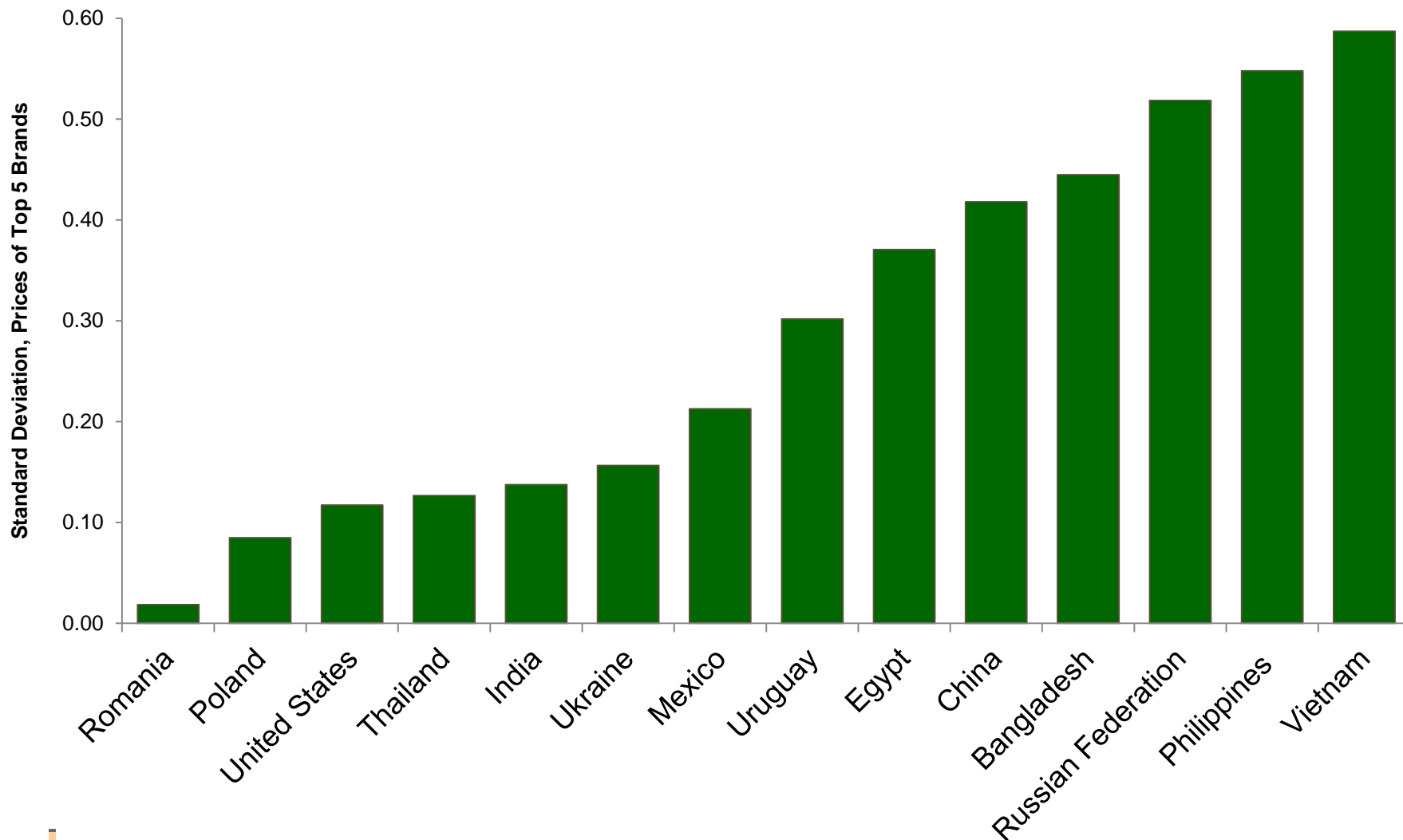
# Cigarette Price & Consumption

## Mexico, 2001-2014, Inflation Adjusted



Sources: EIU, Euromonitor, and World Bank

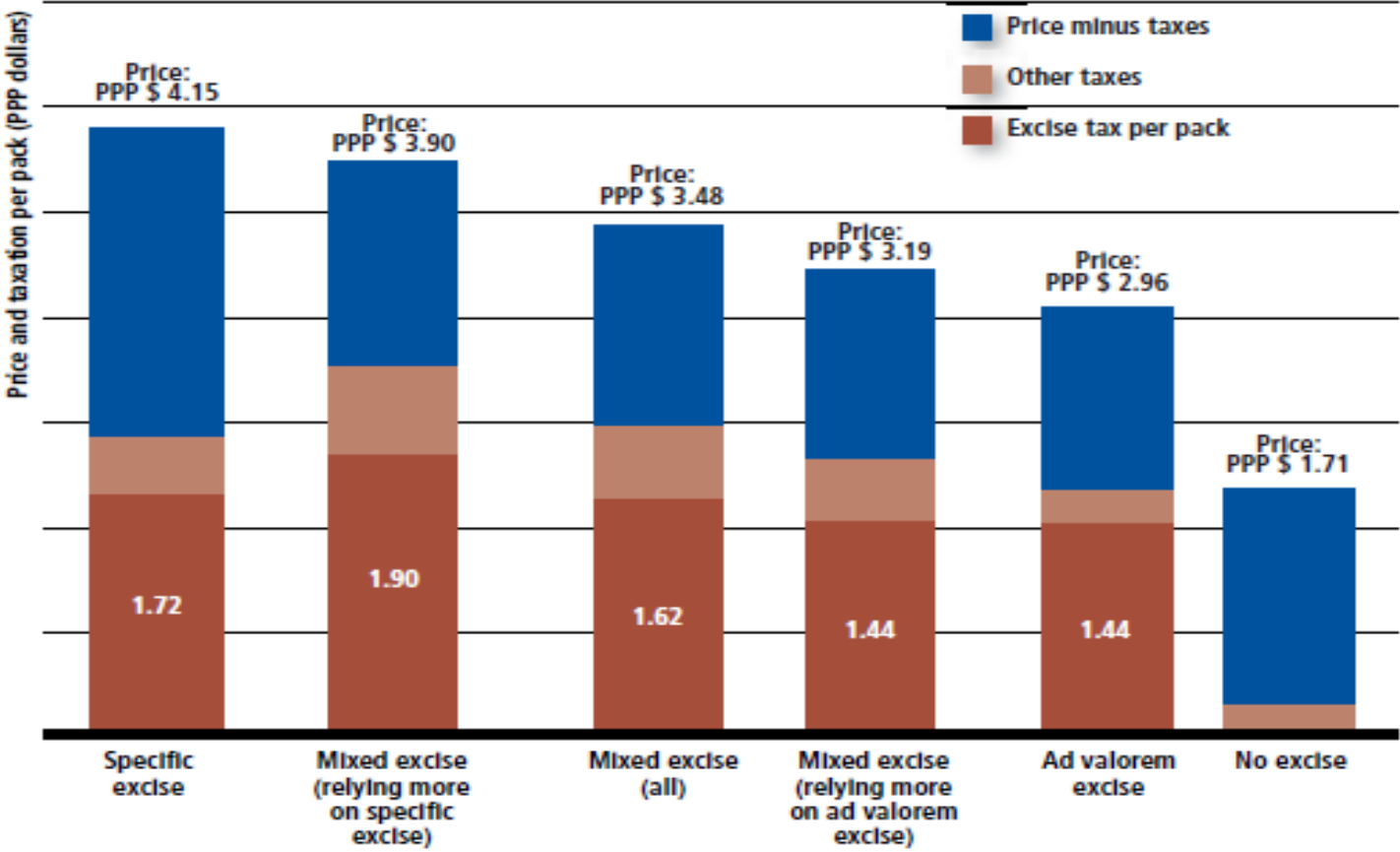
# Cigarette excise tax structure: Simple specific and mixed relying more on specific tax to lead to less variable prices





# Cigarette excise tax structure: Specific and mixed relying more on the specific component tend to lead to higher prices

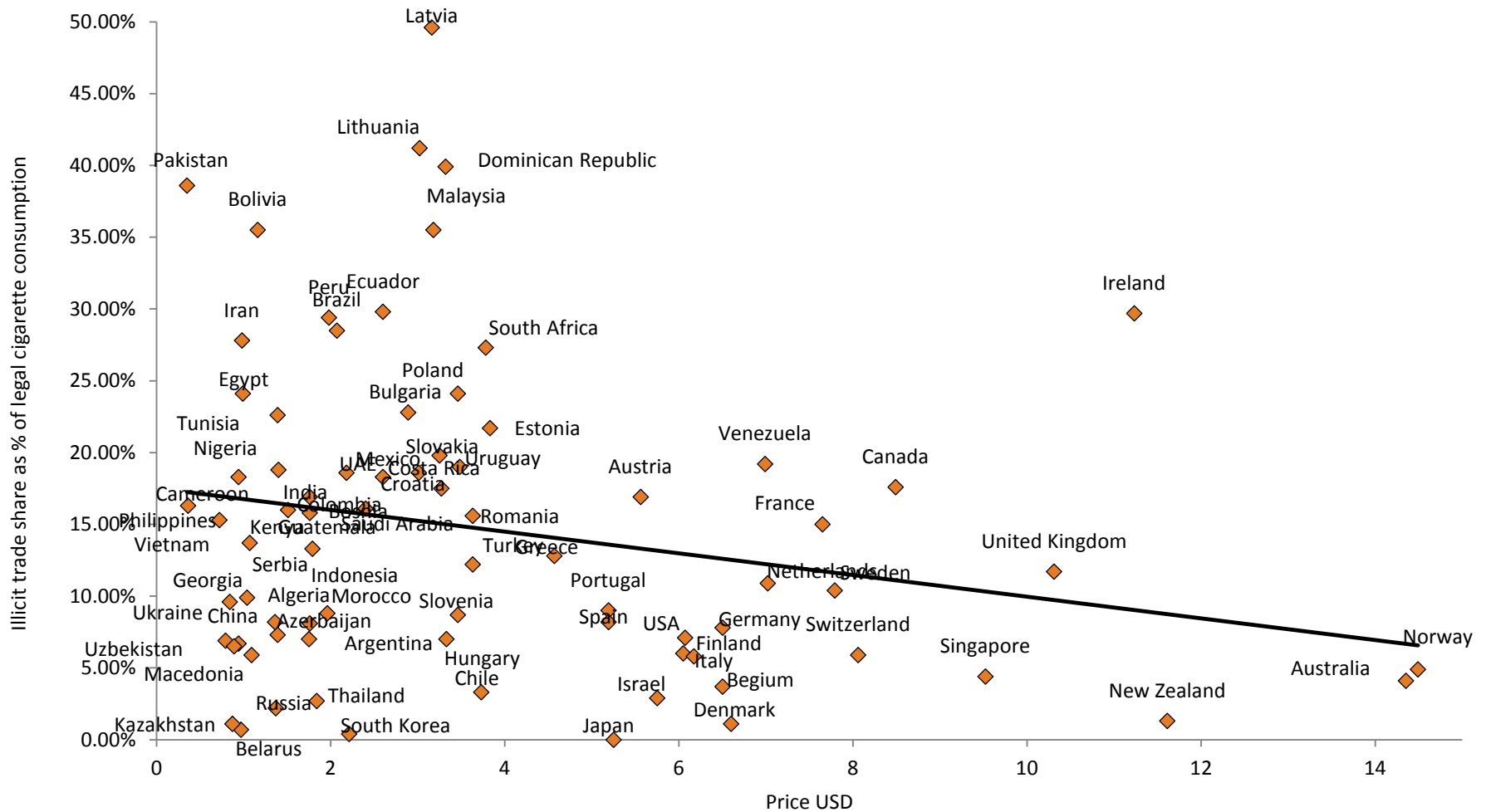
WEIGHTED AVERAGE PRICES AND TAXES PER PACK BY TAX STRUCTURE



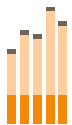
Note: Averages are weighted by WHO estimates of number of current cigarette smokers in each country. Prices are expressed in Purchasing Power Parity (PPP) adjusted dollars or international dollars to account for differences in the purchasing power across countries. Based on 53 high-income, 98 middle-income and 29 low-income countries with data on price of most sold brand, excise and other taxes, and PPP conversion factors.



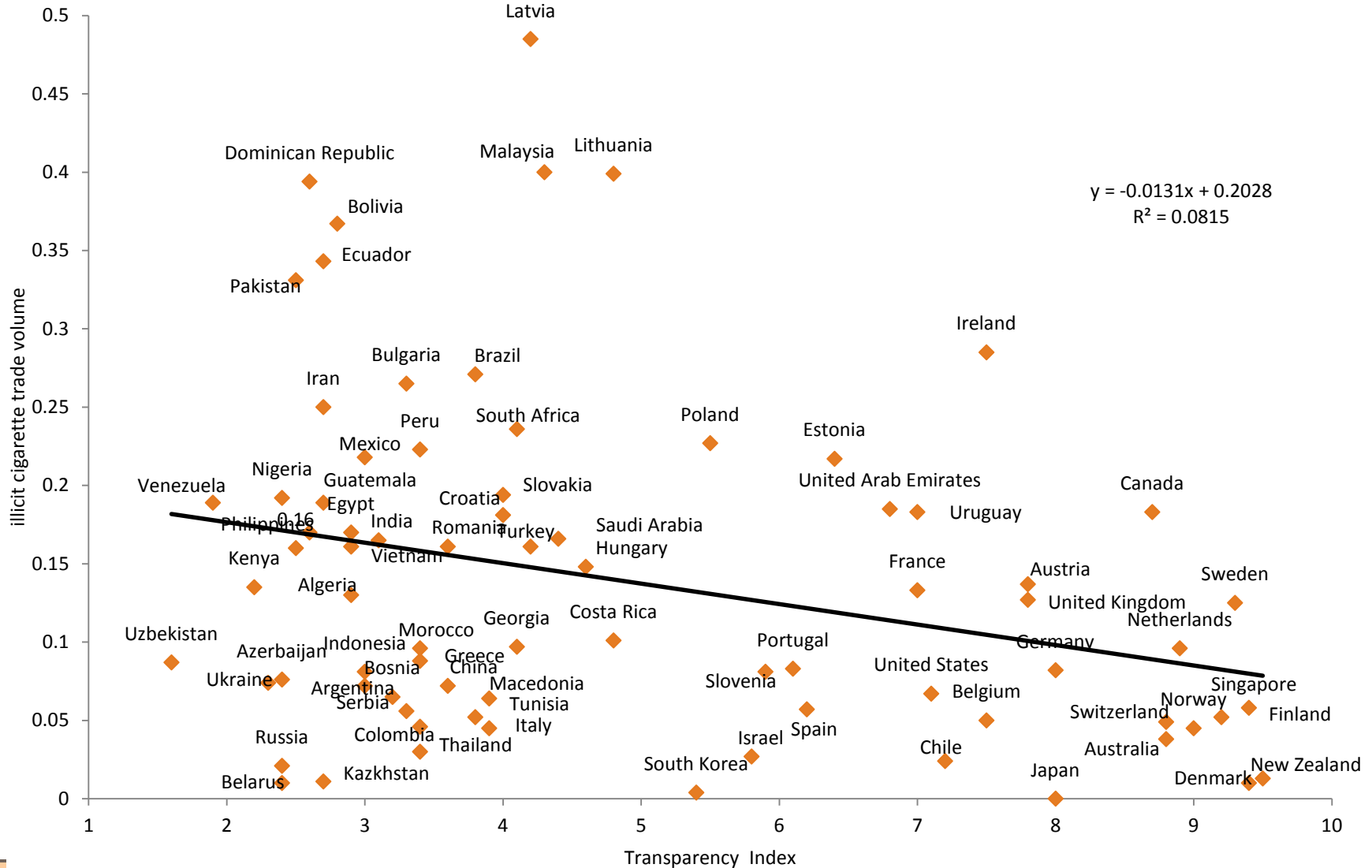
# Illicit Cigarette Market Share & Cigarette Prices, 2012

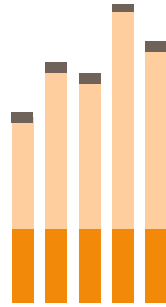


Sources: Euromonitor, WHO



# Smuggling and Corruption, 2011

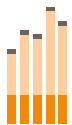




# Summary

# Summary

- Alcohol tax increases reduce use and consequences
- Alcohol tax increases generate significant new revenues
- Alcohol taxes in nearly all states significantly eroded over time by inflation and have fallen well behind tobacco taxes in most states
- Counterarguments about negative economic impact false or greatly overstated



**For more information:**

**Tobacconomics**

**<http://www.tobacconomics.org>**

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