

Taxation as Public Health Policy

Frank J. Chaloupka
University of Illinois at Chicago

American Heart Association/American Stroke Association
Advocacy Coordinating Committee
Dallas TX, June 26, 2012

"Sugar, rum, and tobacco, are commodities which are nowhere necessities of life, which are become objects of almost universal consumption, and which are therefore extremely proper subjects of taxation."

Adam Smith, An Inquiry into the Nature and Causes of The Wealth of Nations, 1776

Overview

- Brief overview of tobacco taxation
- Impact of taxes/prices on tobacco use, consequences of use
- Implications for obesity prevention
 - Sugar-Sweetened Beverage Taxation

Overview of Tobacco Taxation

Why Tax?

- **Efficient revenue generation**
 - Primary motive historically and still true for many governments today
- **Promote public health**
 - Increasingly important motive for higher tobacco taxes in many states
- **Cover the external costs of tobacco use**

Types of Tobacco Excise Taxes

- Specific Taxes: excises based on quantity or weight (e.g. tax per pack of 20 cigarettes)
 - Federal, state, and local cigarette excise taxes, and most federal other tobacco product excise taxes are specific taxes
- Ad Valorem taxes: excises based on value of products (e.g. a specific percentage of manufacturer's prices for tobacco products)
 - Many state excise taxes on other tobacco products are either *ad valorem* taxes or a mix of specific and *ad valorem* taxes

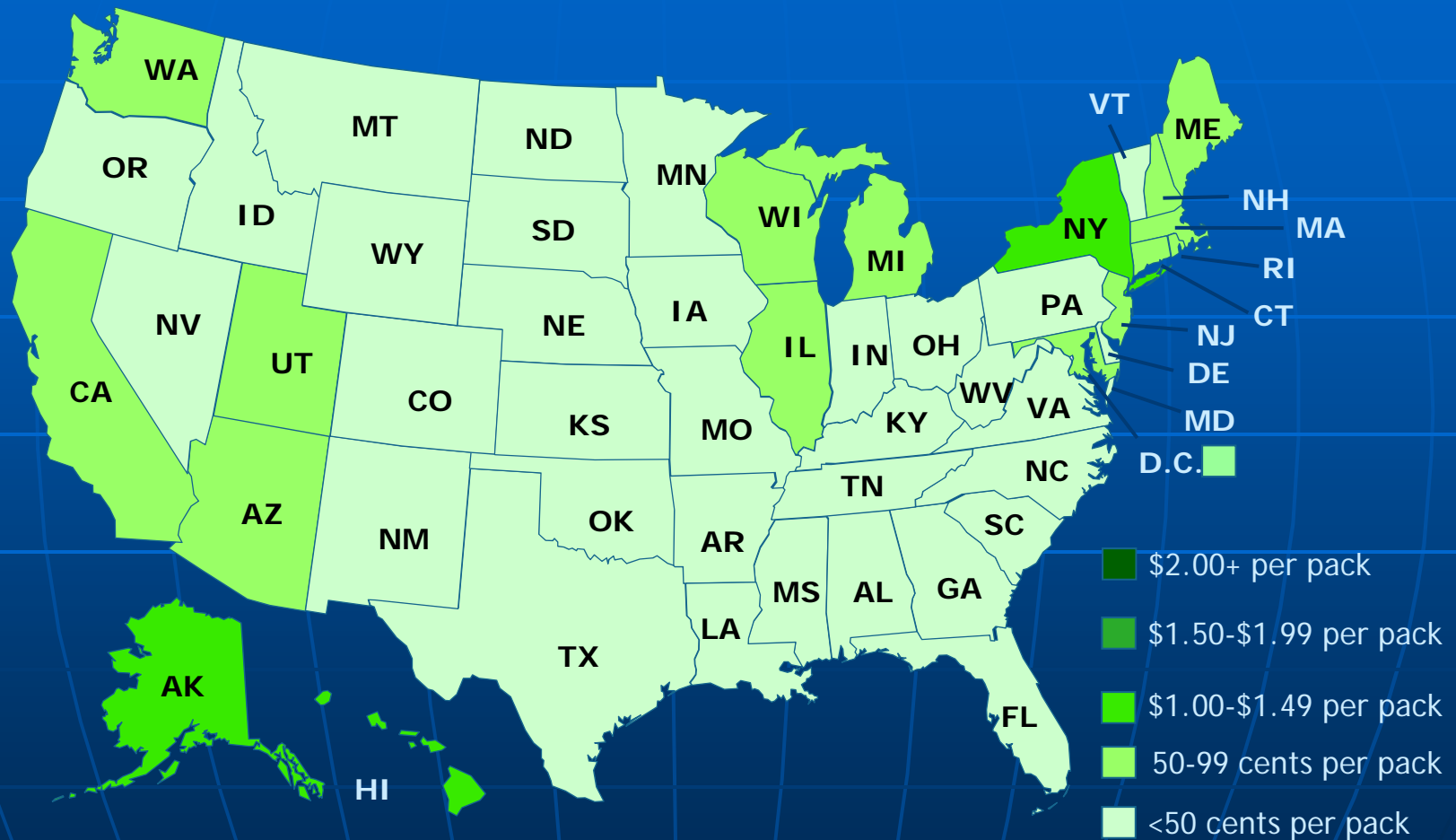
Federal Cigarette Taxes, United States, 1954-2010

(August 2011 dollars)



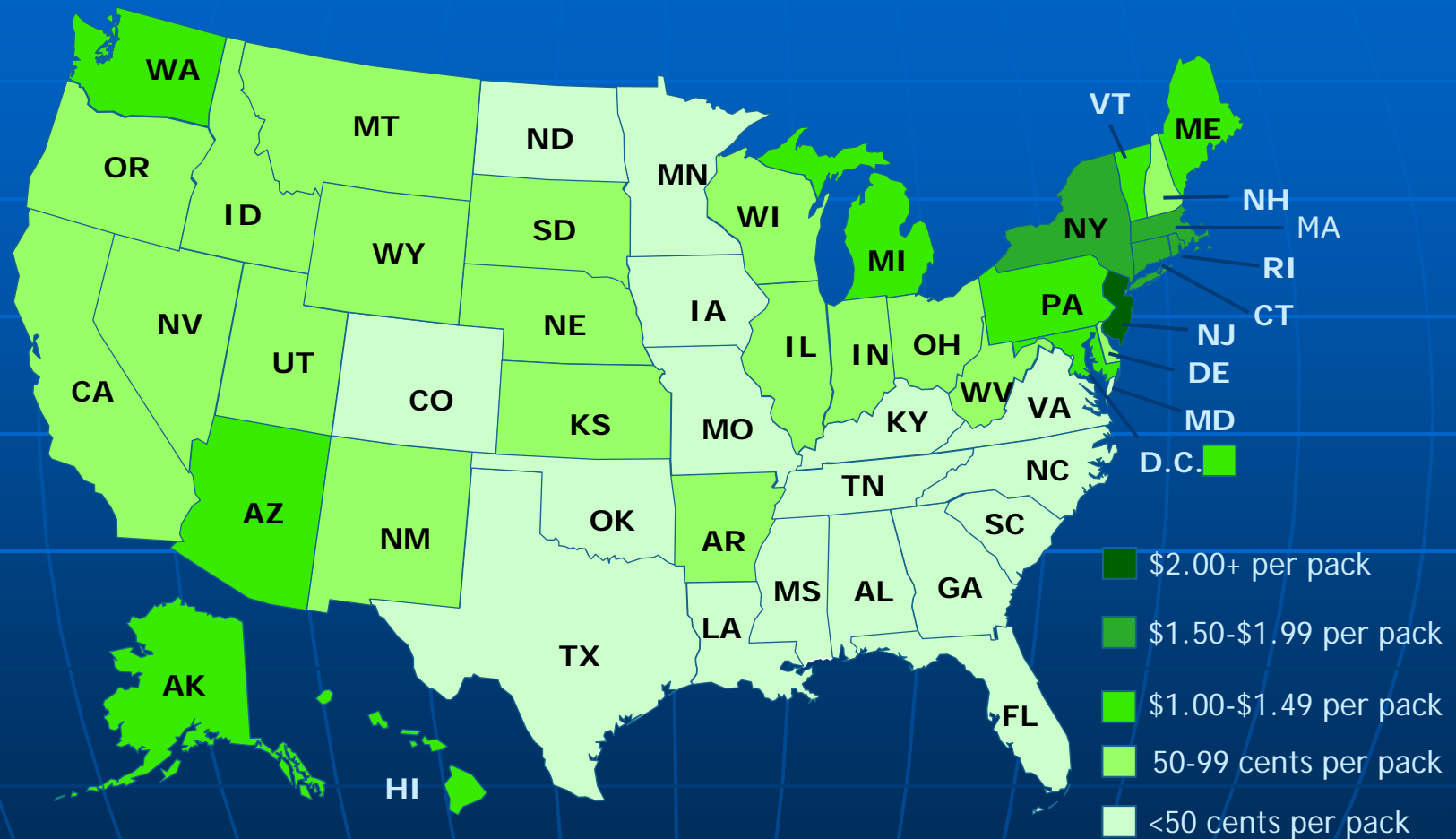
Source: *Burden on Tobacco*, 2011, and author's calculations

State Cigarette Excise Tax Rates – 2000



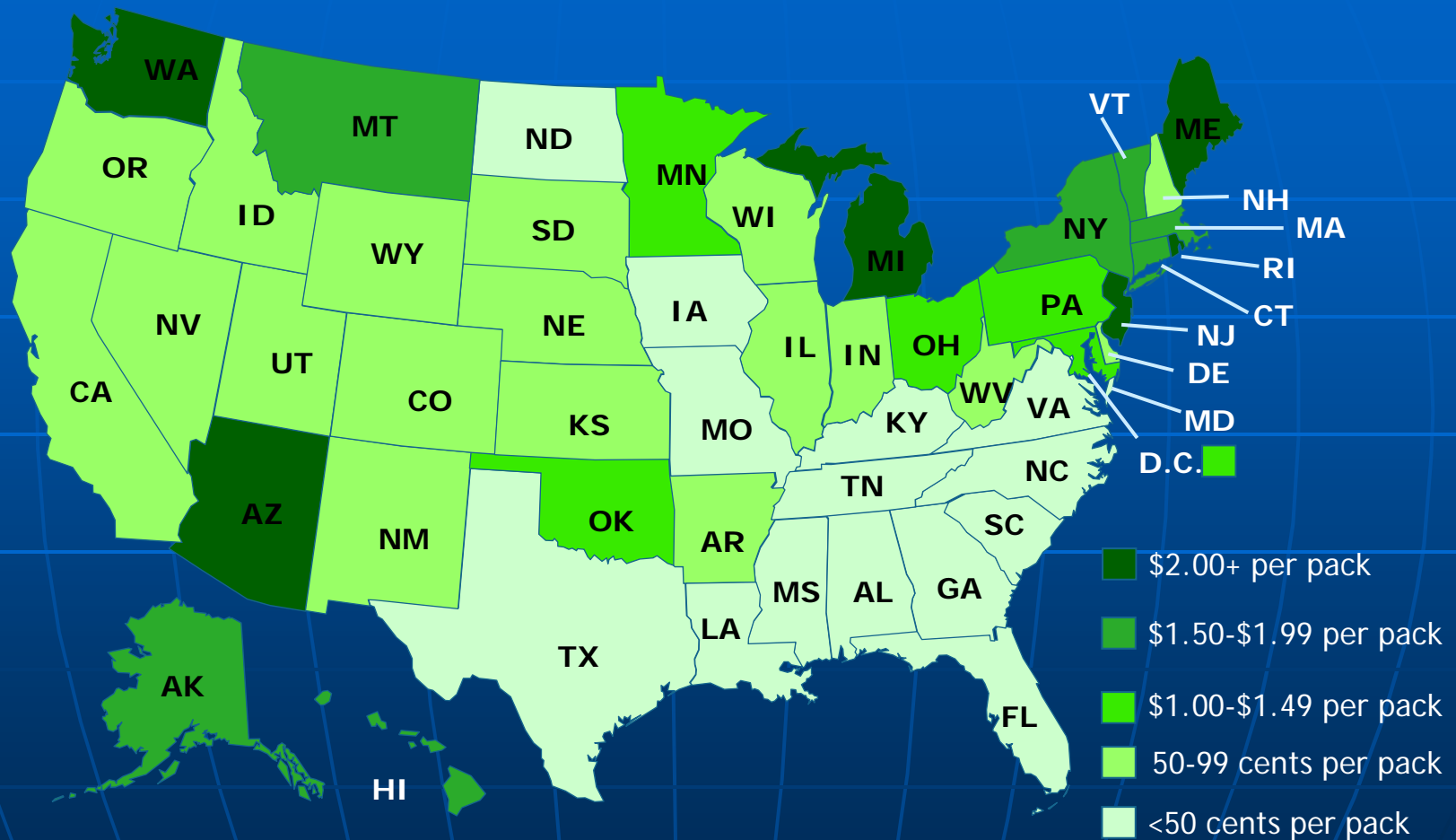
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2003



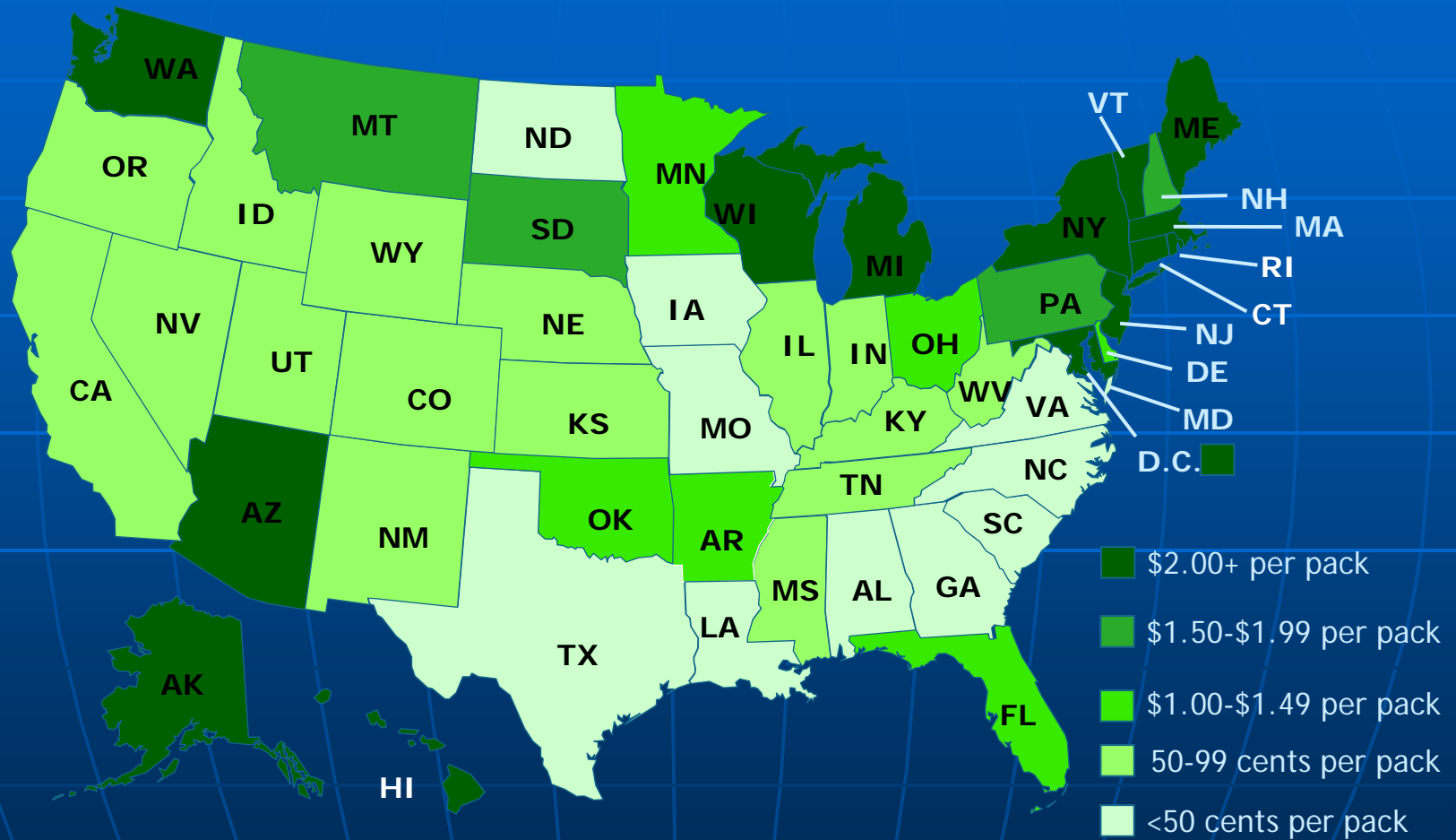
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2006



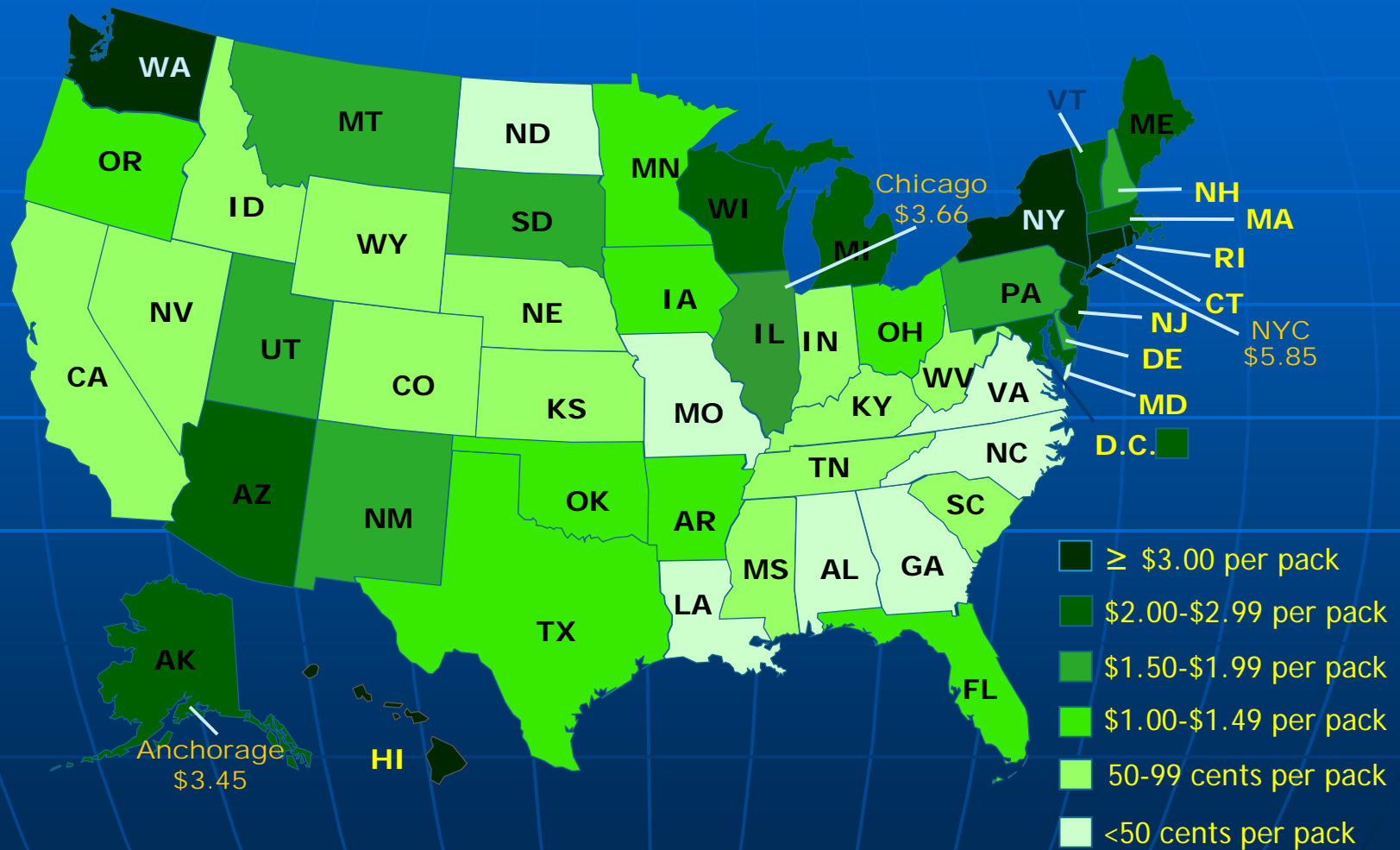
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2009



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

State Cigarette Excise Tax Rates – 2012



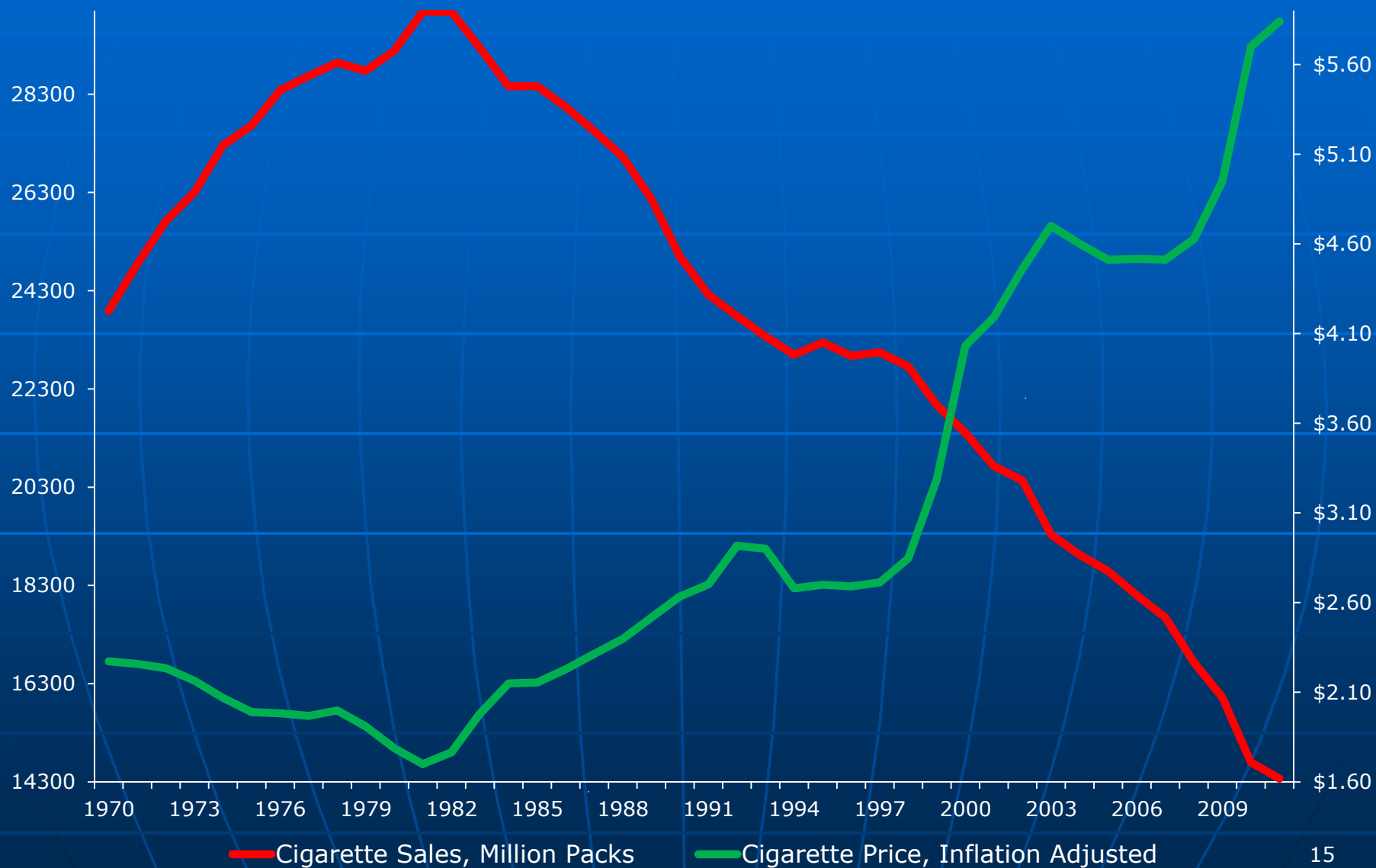
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

Impact of Tax and Price 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
 - Lead to other changes in tobacco use behavior, including substitution to cheaper products or brands, changes in buying behavior, and compensation

Cigarette Sales & Cigarette Prices, United States, Inflation Adjusted, 1970-2011



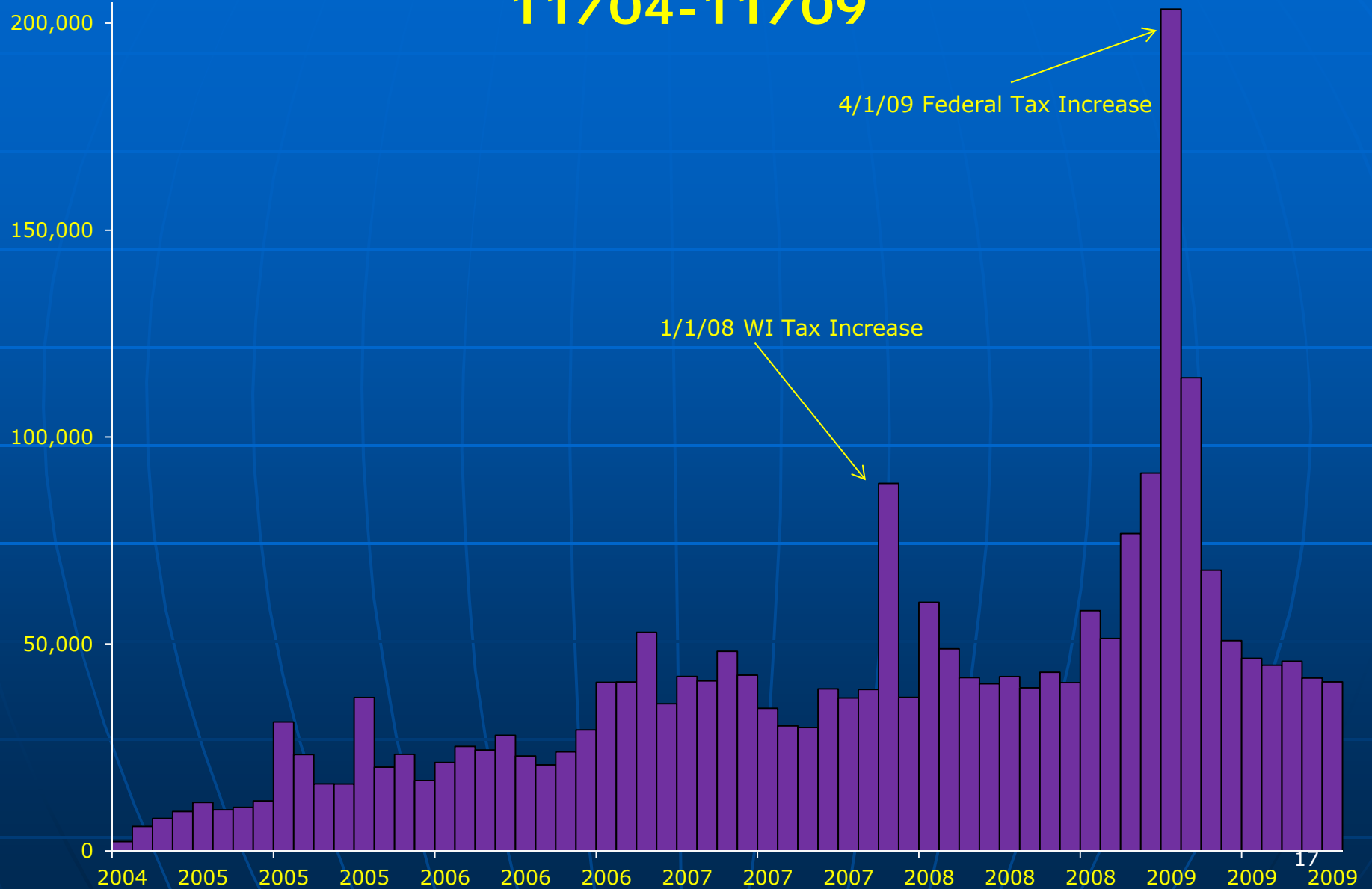
Source: *Tax Burden on Tobacco*, 2012, and author's calculations

Cigarette Prices and Adult Smoking Prevalence, United States, Inflation Adjusted, 1970-2011

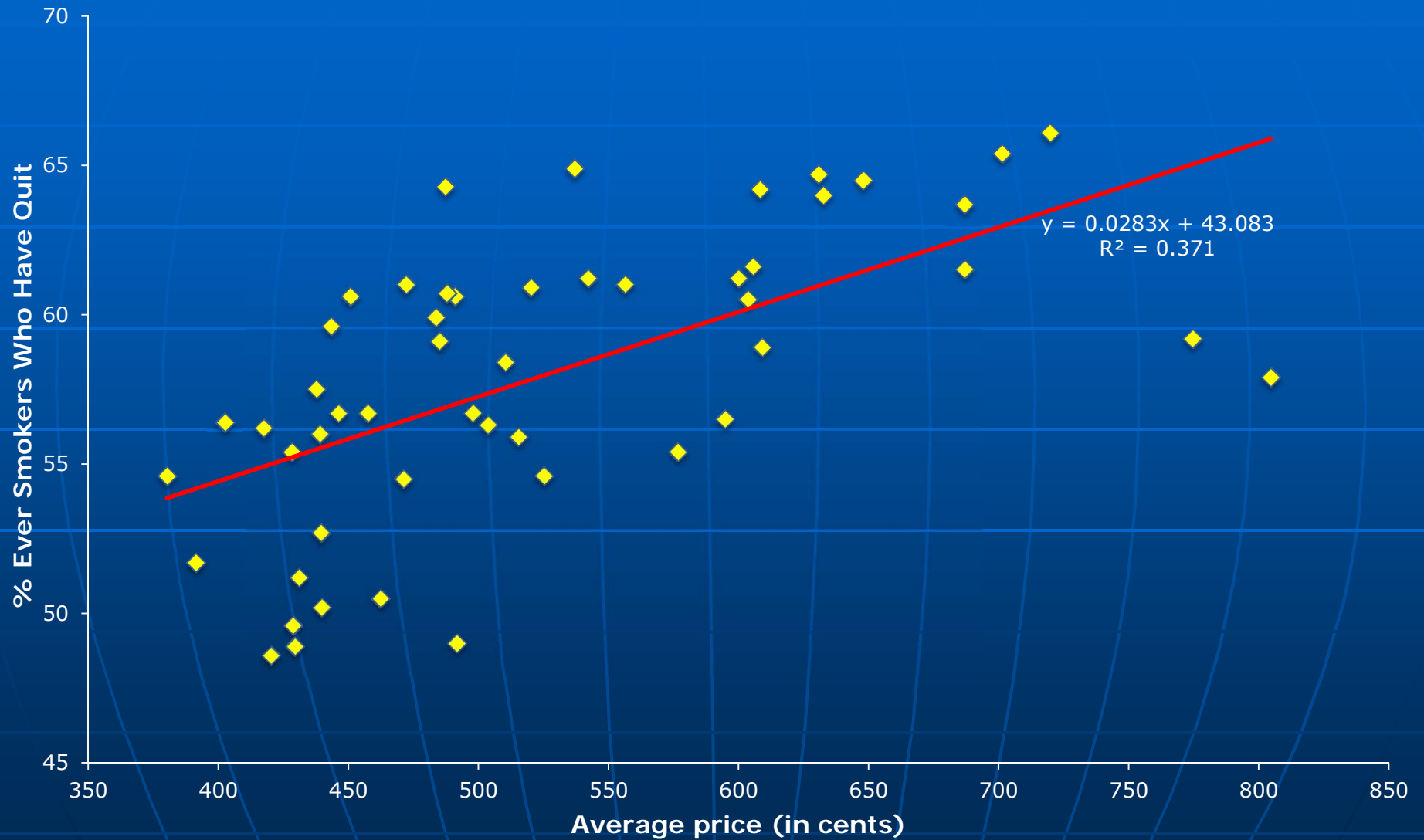


Source: NHIS, *Tax Burden on Tobacco*, 2012, and author's calculations
 Note: green data points for prevalence are interpolated assuming linear trend

Monthly Quit Line Calls, United States 11/04-11/09

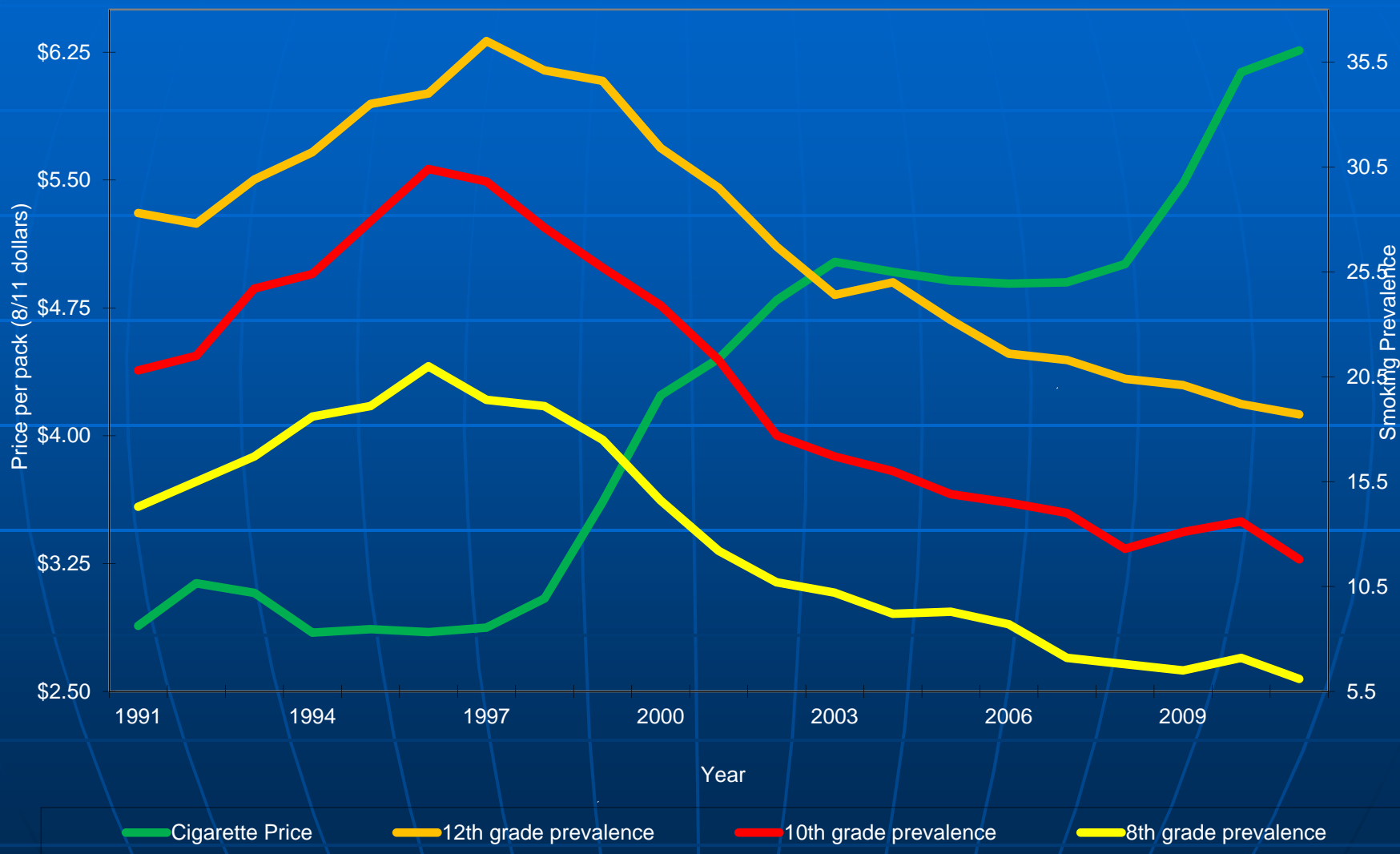


Cigarette Prices and Cessation US States & DC, 2009



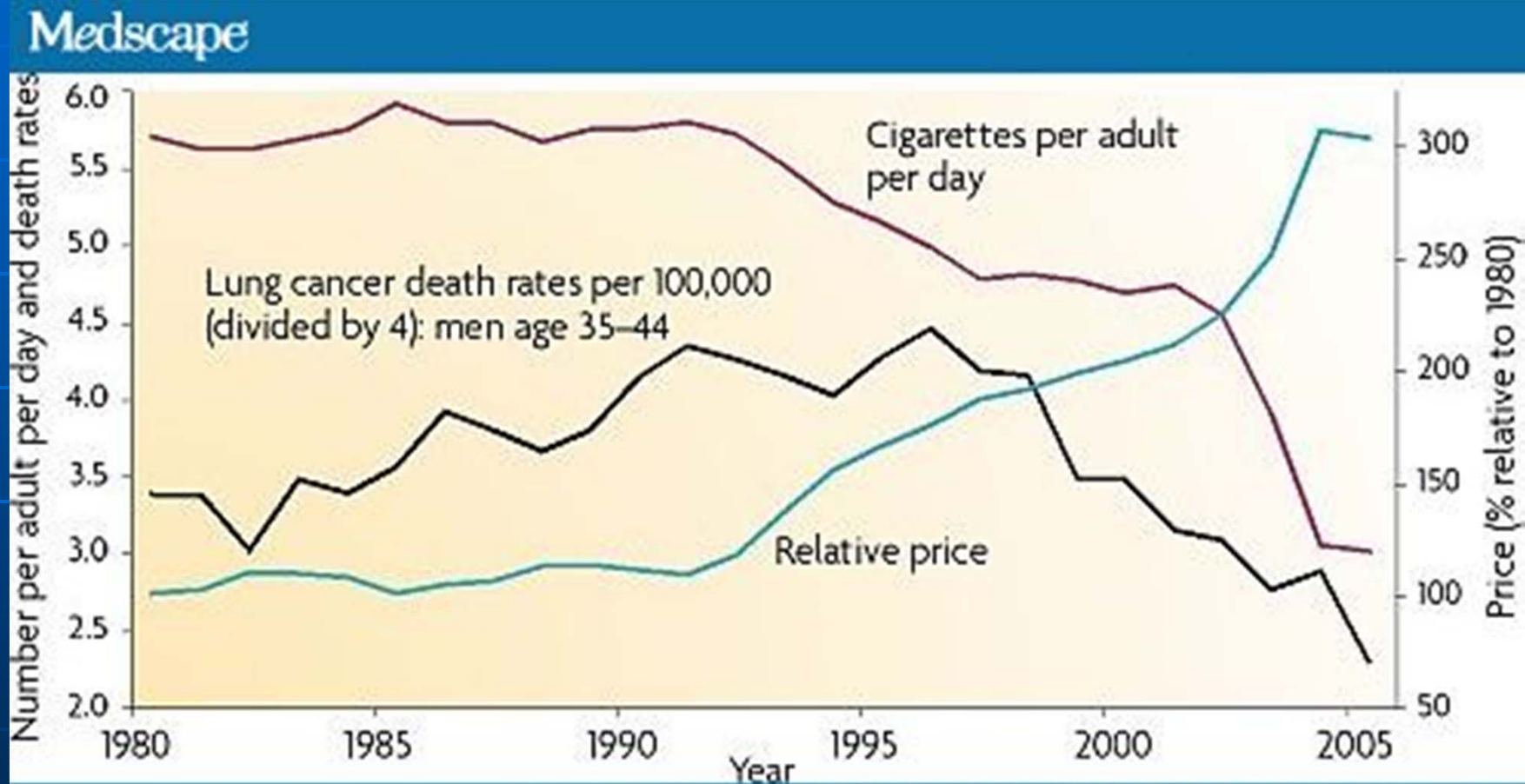
Source: BRFSS, *Tax Burden on Tobacco*, 2010, and author's calculations

Cigarette Price and Youth Smoking Prevalence, United States, 1991-2011



Source: MTF, *Tax Burden on Tobacco*, 2012, and author's calculations

Taxes, Prices and Health: US, 1980-2005



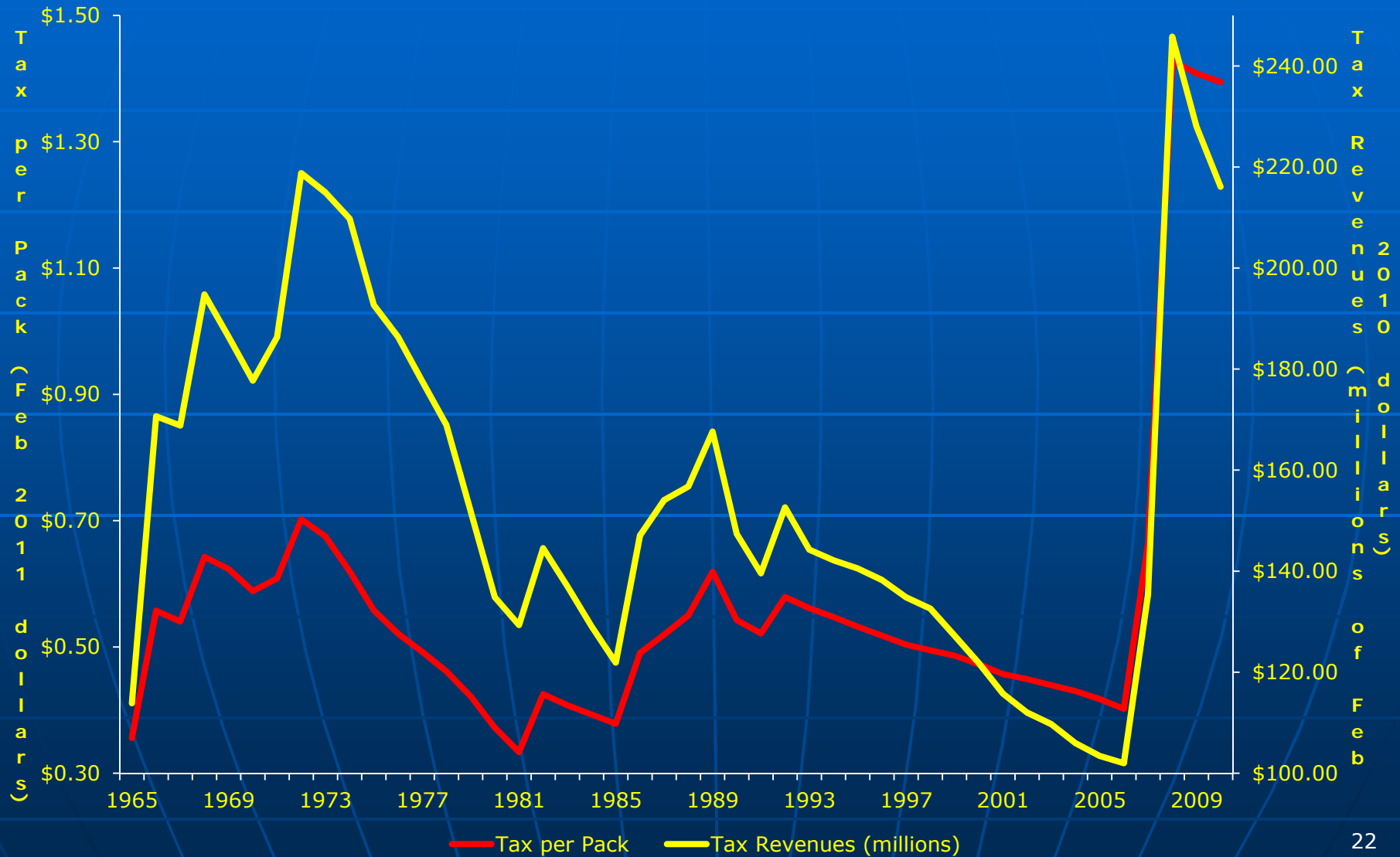
Source: Nat Rev Cancer © 2009 Nature Publishing Group

Federal Cigarette Tax and Tax Revenues Inflation Adjusted, 1955-2010



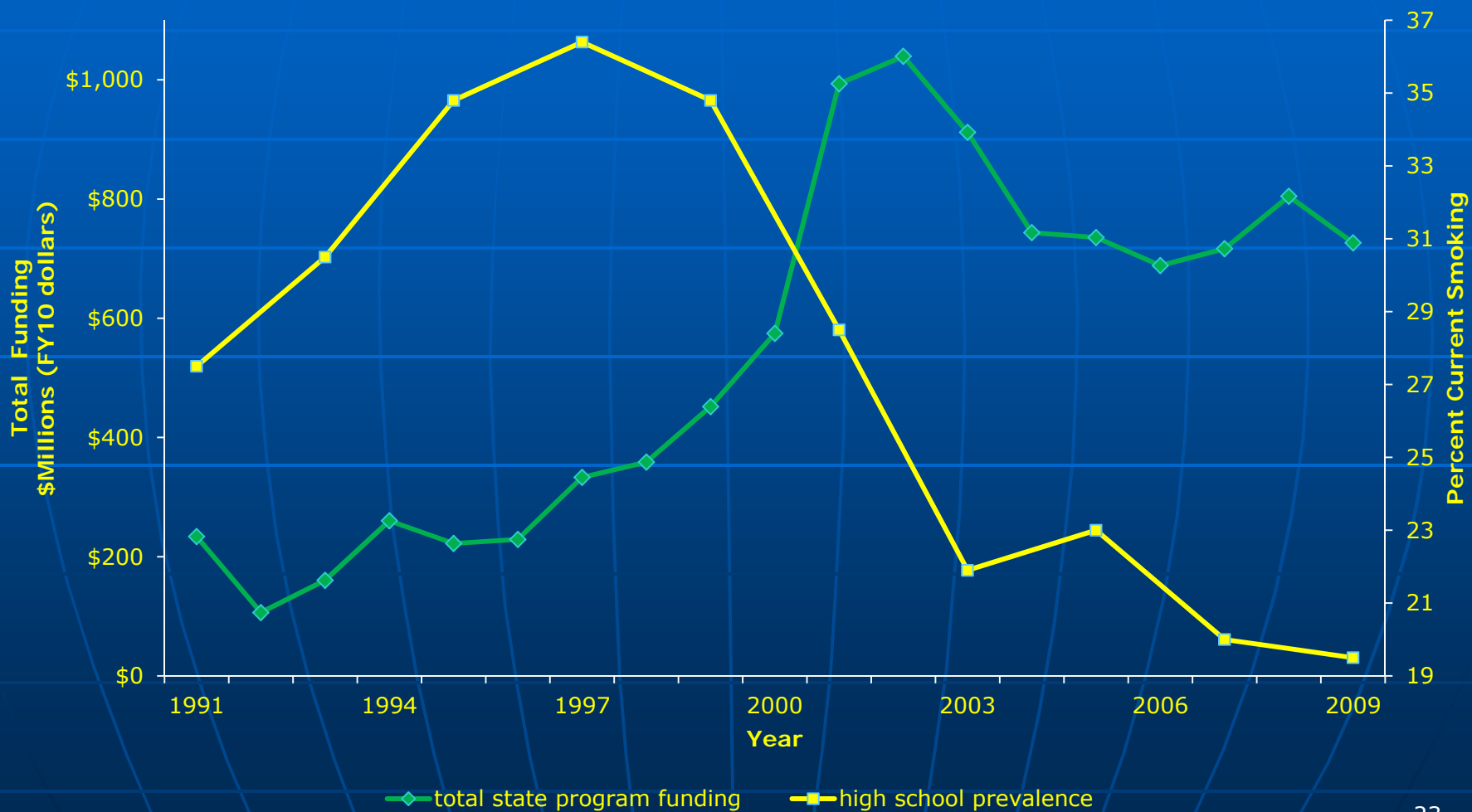
Source: *Tax Burden on Tobacco*, 2011, and author's calculations

Cigarette Tax and Tax Revenues Inflation Adjusted, Iowa, 1965-2010



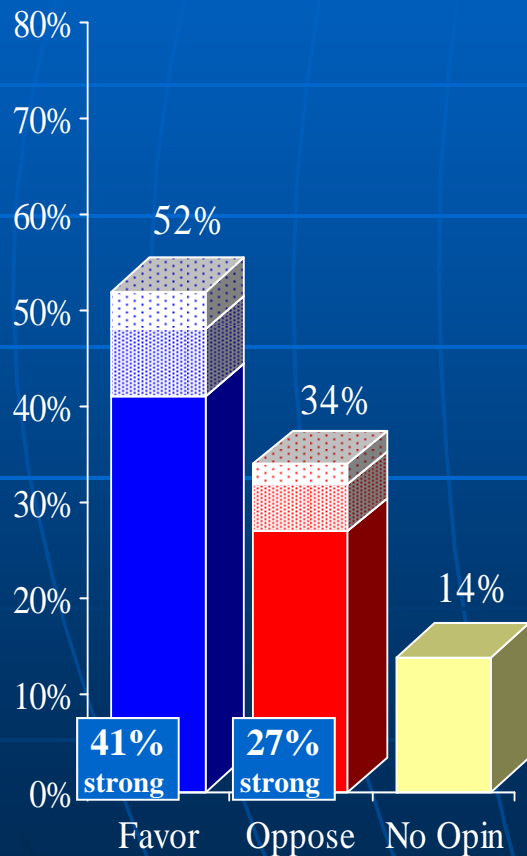
Source: *Tax Burden on Tobacco*, 2011, and author's calculations

State Tobacco Control Program Funding and Youth Smoking Prevalence

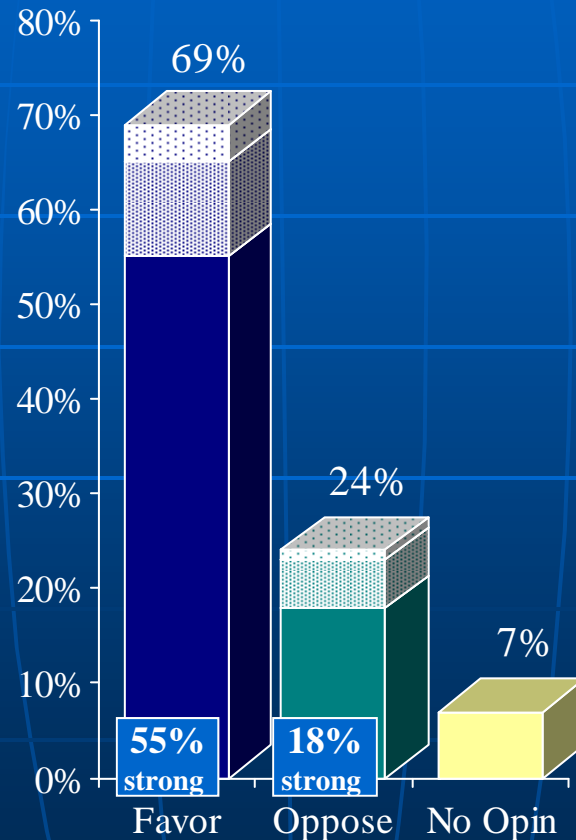


Earmarking for Youth Smoking Prevention Increases Support For Tobacco Tax Hikes

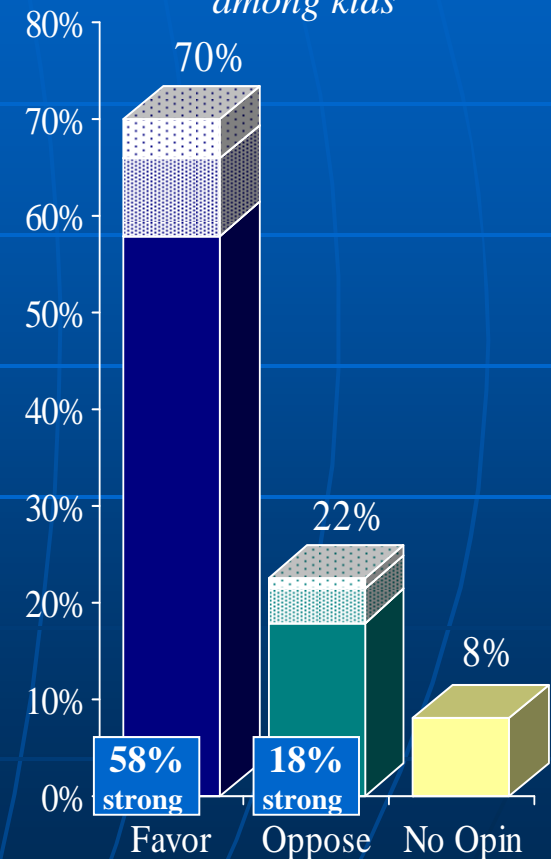
Would you favor or oppose an increase in the state tobacco tax?



... as part of an effort to help reduce smoking, particularly among kids



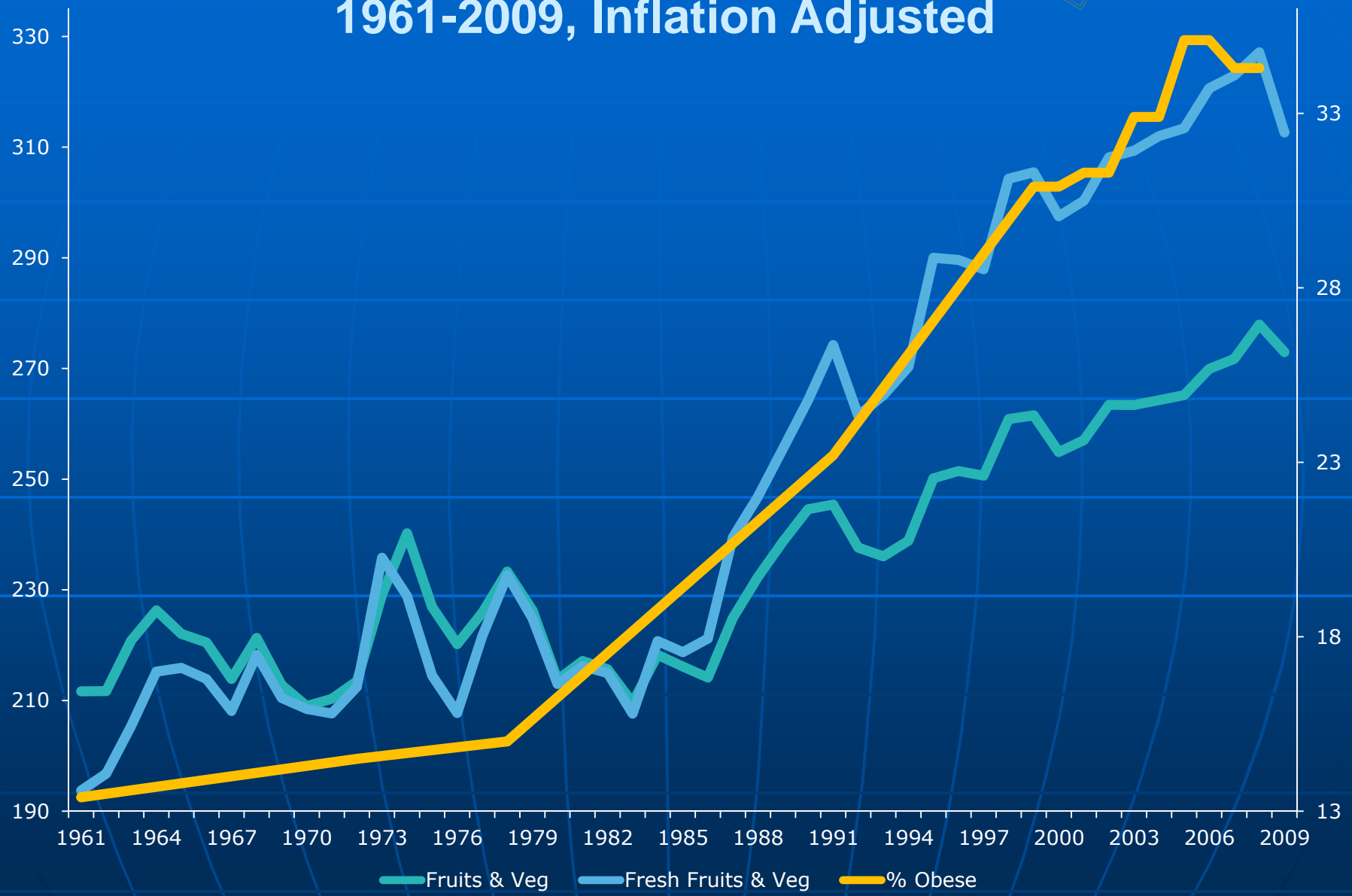
...if part of the money is used to fund programs to reduce tobacco use, particularly among kids



Taxation and Obesity Prevention?

Selected Food Price & Adult Weight Trends

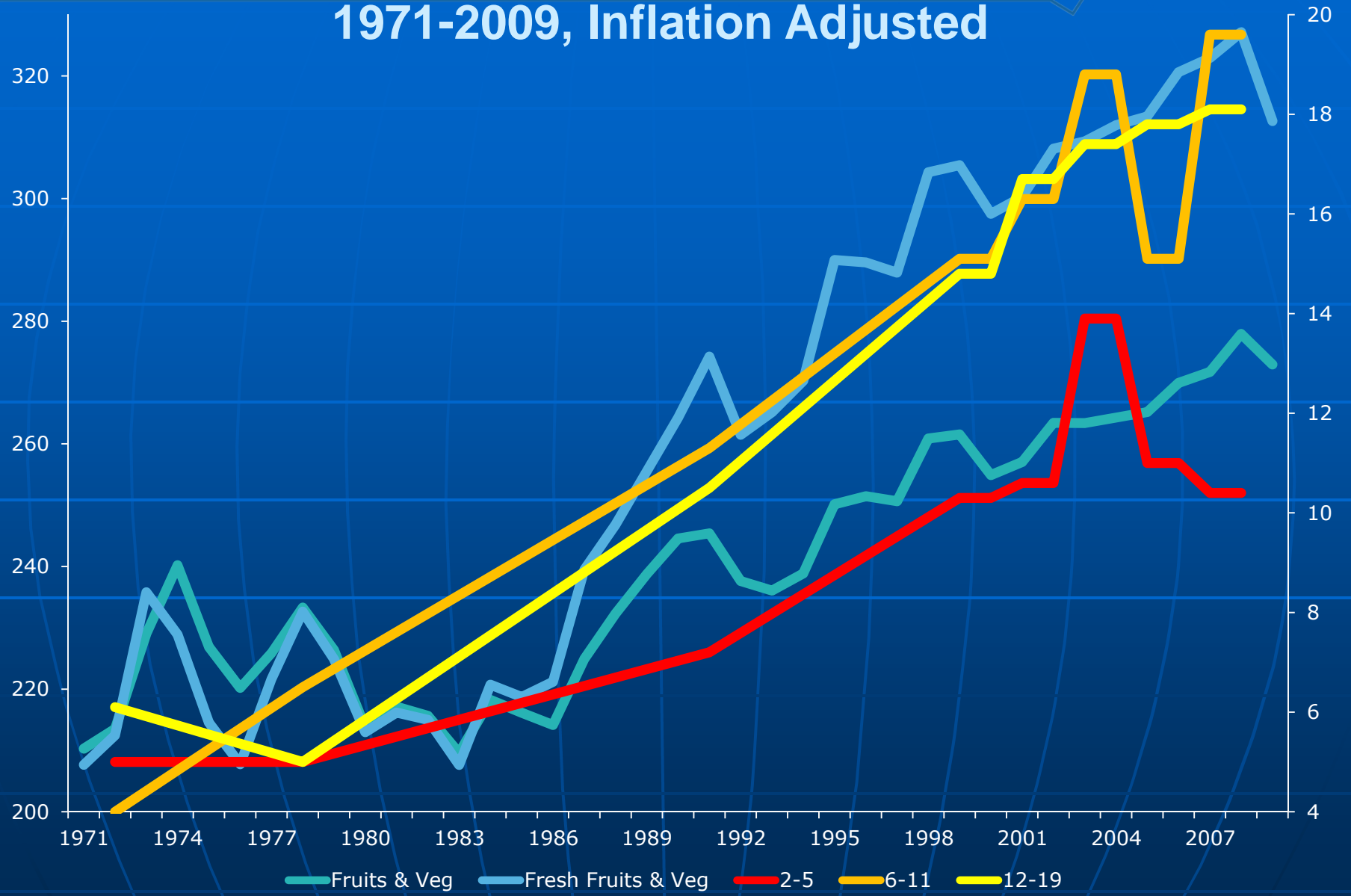
1961-2009, Inflation Adjusted



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 & Youth Weight Trends

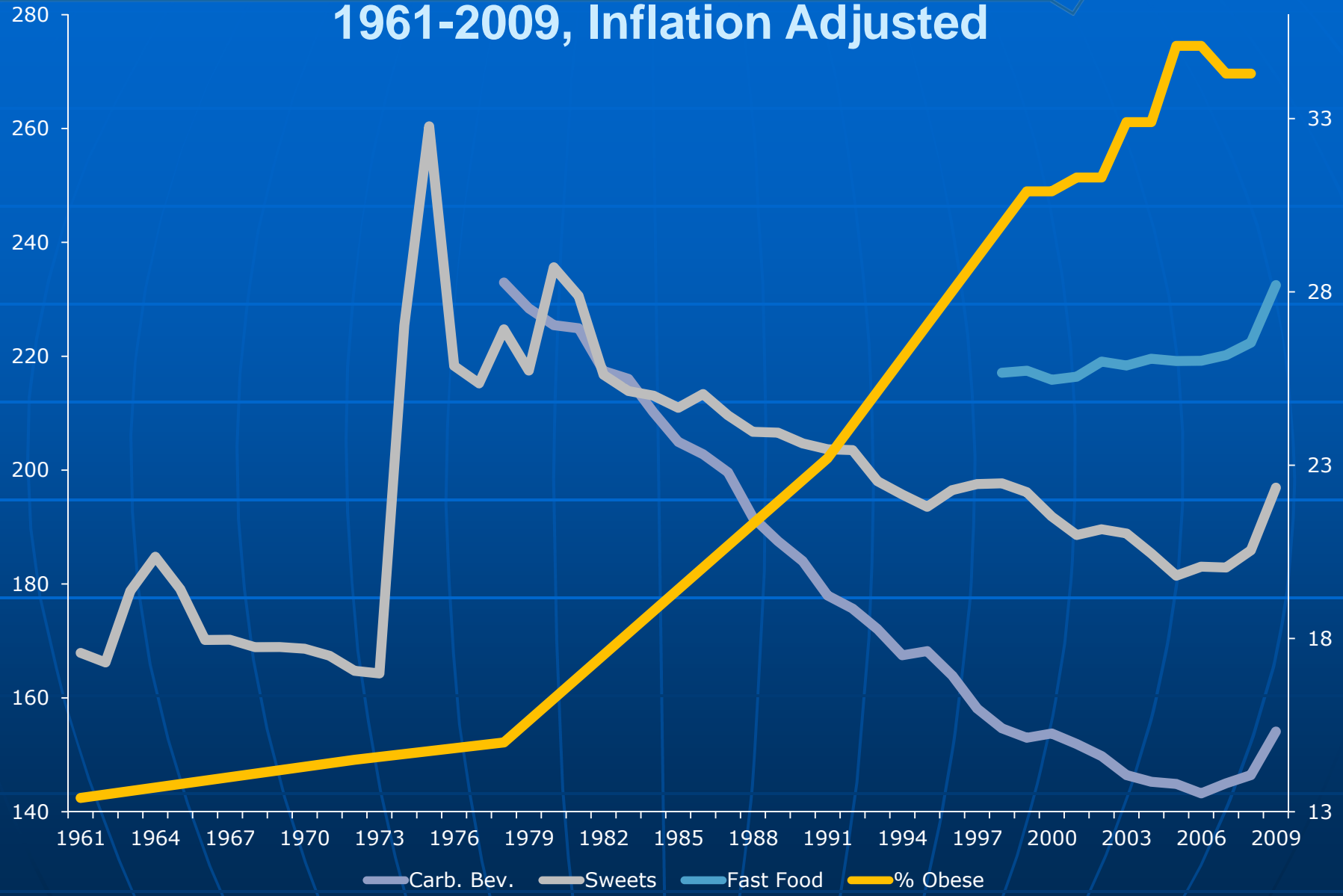
1971-2009, Inflation Adjusted



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

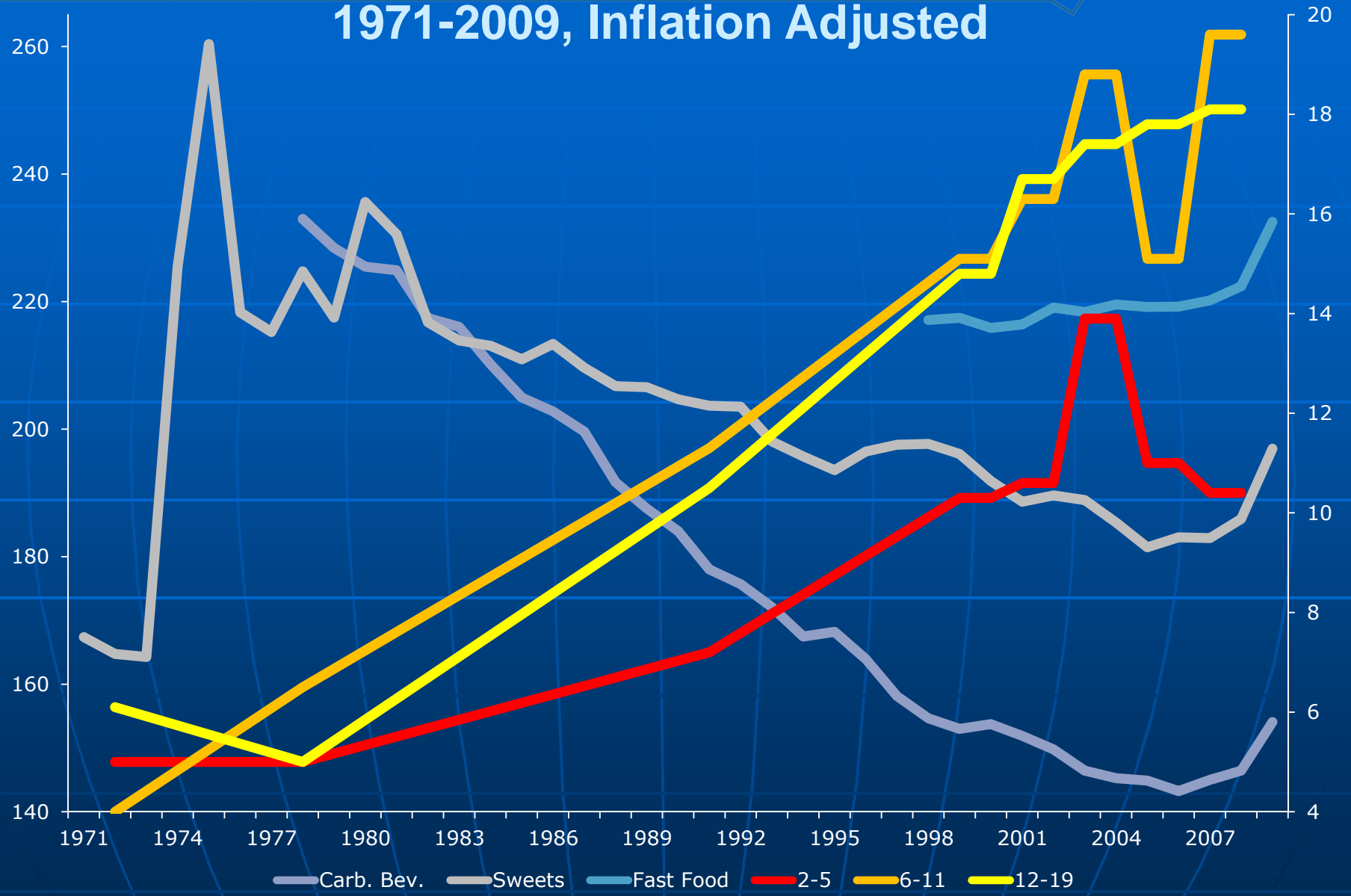
1961-2009, Inflation Adjusted



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 & Youth Weight Trends

1971-2009, 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

Food Prices and Consumption

Extensive economic research on the impact of food and beverage prices on consumption of various products; estimates suggest 10% own-price increase would reduce:

- Cereal consumption by 5.2%
- Fruit consumption by 7.0%
- Vegetable consumption by 5.9%
- Soft drink consumption by 7.8%
- Sweets consumption by 3.5%
- Food away from home consumption by 8.1%

Food Prices and Weight Outcomes

Relatively limited research to date on impact of food and beverage prices and weight outcomes:

- Higher prices for sugary foods would significantly reduce prevalence of overweight and obesity among adults (Miljkovic et al., 2008)
- 10% increase in fast food prices would reduce prevalence of adolescent obesity by almost 6% (Powell, et al., 2007)
- Weight outcomes among low-income populations and those with higher BMI more responsive to prices
 - BMI of kids in families below poverty level about 50% more responsive to F&V prices
 - BMI for kids at unhealthy weight levels 39% more responsive to F&V prices
 - BMI of adolescents at unhealthy weight levels about 4 times more responsive to F&V and fast food prices.

Policy Options

Emerging evidence on prices suggests that significant changes in relative prices of healthy and unhealthy foods could reduce BMI and likelihood of obesity

- Increases in prices of less healthy foods and beverages
 - taxes
 - elimination of corn subsidies
 - disallow purchases under food assistance programs
- Reductions in prices of more healthy foods and beverages
 - subsidies
 - expanded or favored treatment under food assistance programs

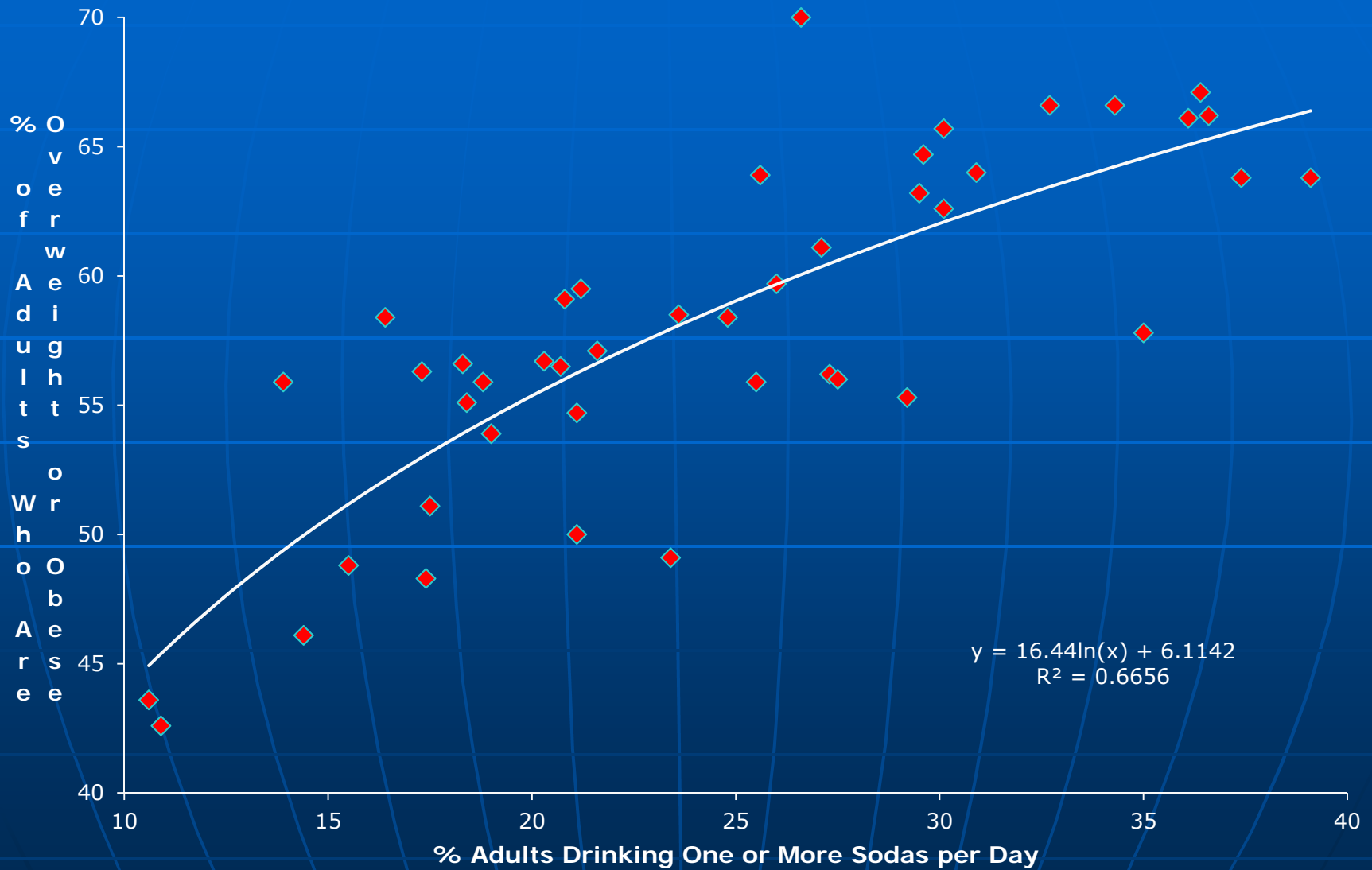
Sugar Sweetened Beverage Taxes

Public Health Rationale for SSB 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

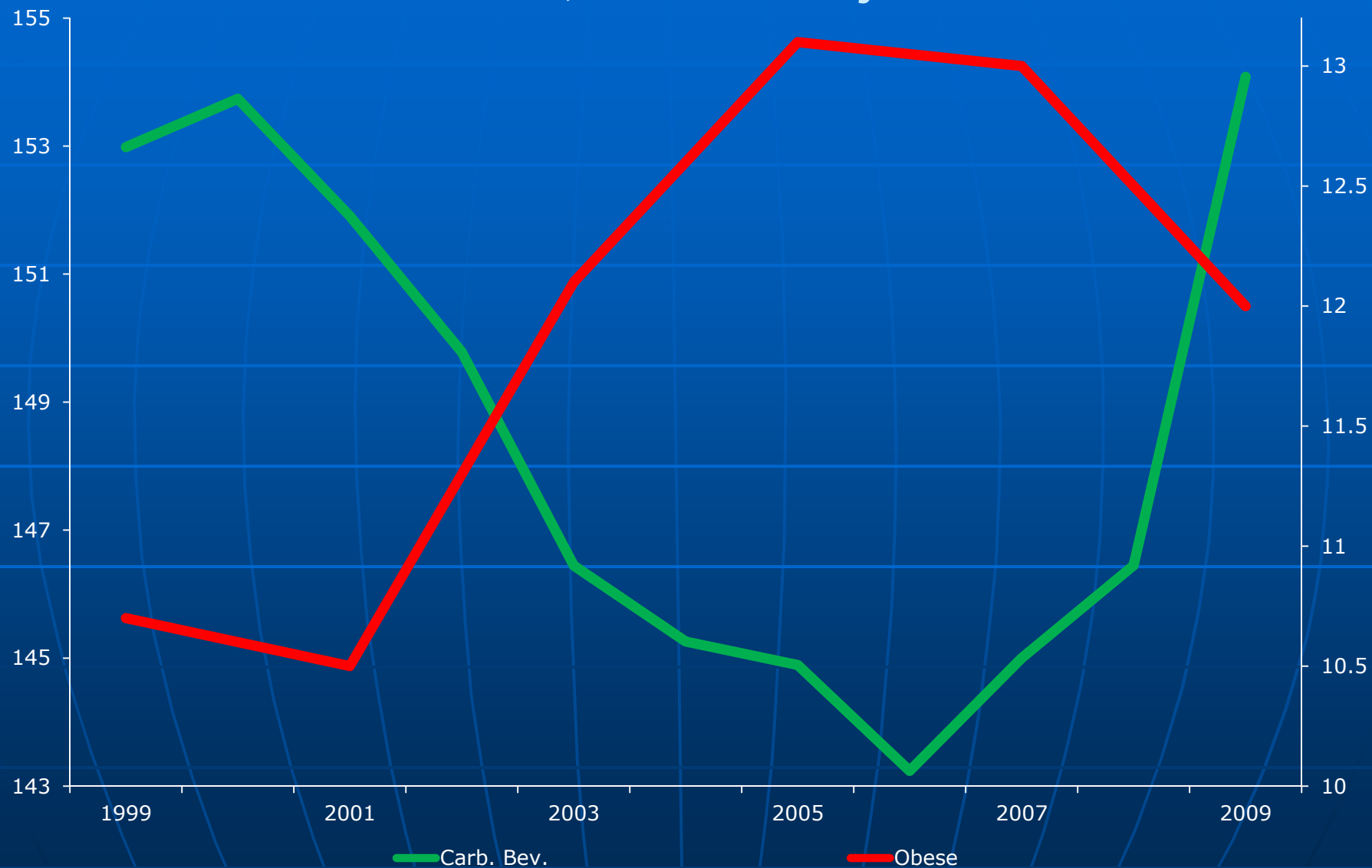
California Counties, 2005



Source: Babey, et al., 2009 and authors' calculations.

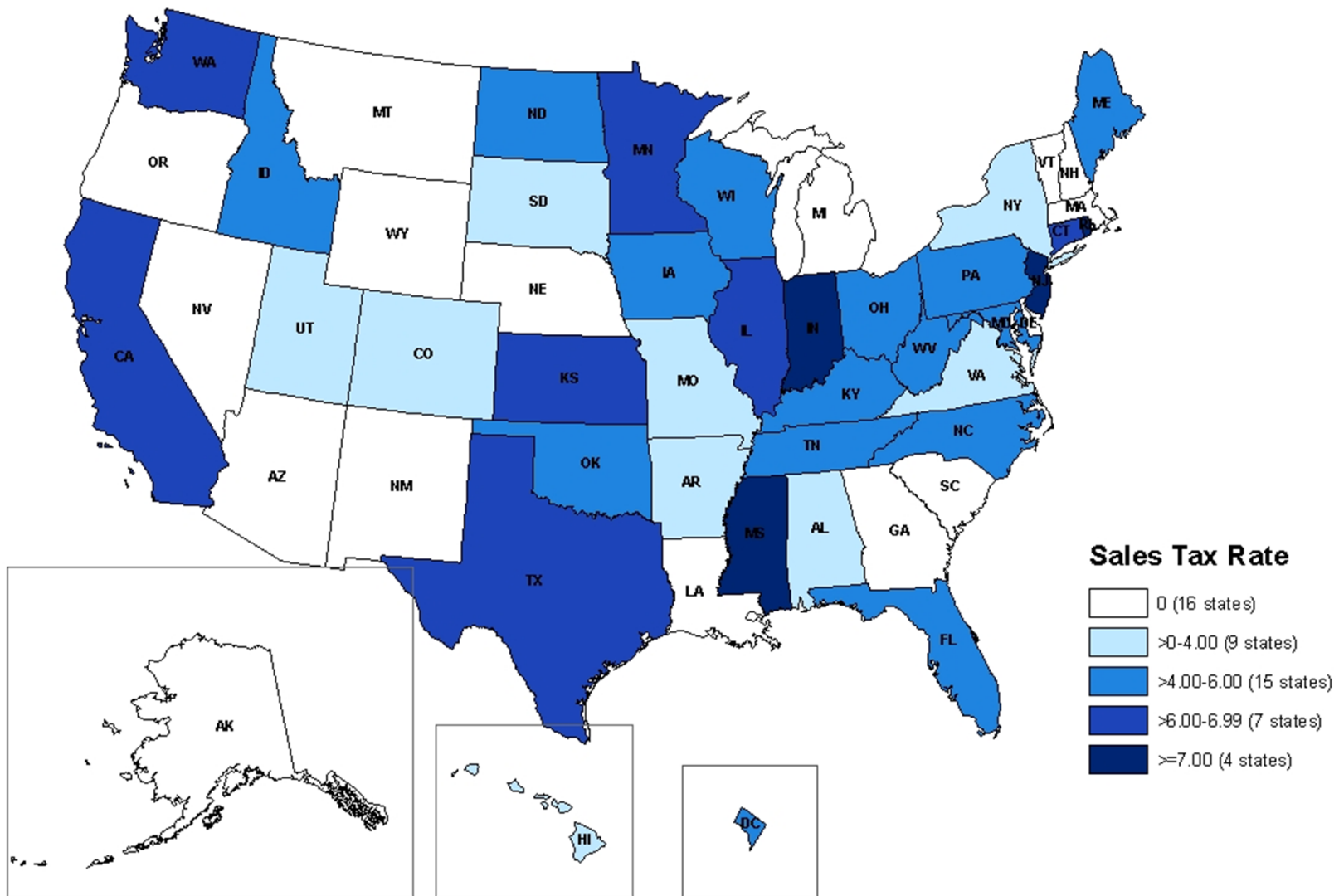
Carbonated Beverage Prices & Youth Obesity

1995-2009, Inflation Adjusted



Source: BLS; YRBS

State Regular, Sugar-Sweetened Soda Sales Tax Rates (as of July 1, 2011)



Note: Does not include 3 states with mandatory, statewide local tax rate (CA-1%, UT-1.25%, VA-1%)

Data Source: Bridging the Gap Program, University of Illinois at Chicago, 2011

Existing evidence

- Growing literature demonstrating the higher prices for SSBs lead to reductions in SSB consumption
- Andreyeva, et al.'s (2010) comprehensive review concluded that price elasticity of soft drink consumption was -0.78
 - Price elasticity: % change in consumption resulting from 1% price change
 - 10% increase in soft drink prices would reduce consumption by nearly 8%
- Limited, mixed evidence on impact of taxes/prices on weight outcomes

Bridging the Gap Research

- Empirically examine associations between state-level soda taxes and consumption and weight outcomes, using nationally representative data sets including:
 - A.C. Nielsen Homescan Data
 - Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K)
 - Monitoring the Future (MTF)
 - National Longitudinal Survey of Youth 1997 (NLSY97)

Key Findings & Policy Implications

- Generally very small associations between soda taxes and consumption or weight outcomes based on the existing low tax rates which range up to just 7% in the study samples.
- Larger associations for populations at greater risk for obesity
 - Lower income, less educated, minority, younger, and/or those at higher weight
- *Substantial* increases in SSB tax rates likely to have measureable effects on key outcomes and greater effects at the population level

Alternative SSB Tax Structures

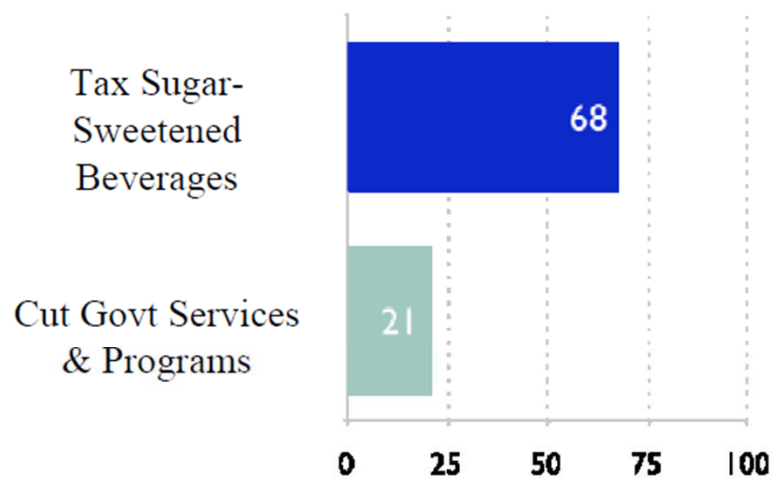
- From a public health perspective, specific excise tax preferable to sales tax or *ad valorem* excise tax for several reasons:
 - More apparent to consumer
 - Easier administratively
 - Reduces incentives for switching to cheaper brands, larger quantities
 - Greater impact on consumption; more likely impact on weight outcomes
 - Revenues not as subject to industry price manipulation
 - Disadvantage: need to be adjusted for inflation

SSB Taxation & Revenues

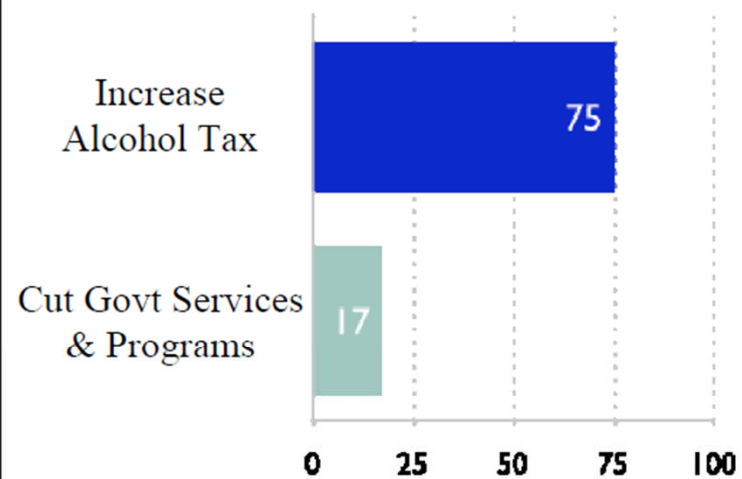
- Revenue generating potential of tax is considerable
 - SSB Tax calculator at:
 - <http://www.yaleruddcenter.org/sodatax.aspx>
 - Tax of one cent per ounce could generate:
 - \$14.9 billion nationally if on SSBs only
 - \$24.0 billion if diet included
 - Tax of two cents per ounce:
 - \$21.0 billion nationally, SSBs only
 - \$39.0 billion if diet included
 - Earmarking tax revenues for obesity prevention efforts would add to impact of tax

Voters Prefer Taxes on Alcohol and Sugar-Sweetened Beverages over Cuts in Government Services by Margins of More than 3 to 1

- As you may know, New York state faces a \$14 billion budget shortfall. Let me read you some statements about possible new taxes to generate revenue and proposed cut-backs to deal with this crisis. Please tell me which statement comes closer to your view.*



*I would prefer to tax sugar-sweetened beverages. /
I would prefer to cut government services and programs.*



*I would prefer to increase the alcohol tax. /
I would prefer to cut government services and programs.*

Voters Prefer Taxes on Alcohol and Sugar-Sweetened Beverages over Increased Property or Sales Taxes

Property Tax	Sales Tax
Sweetened Beverages: 73% Property Tax: 9%	Sweetened Beverages: 65% Sales Tax: 16%
Alcohol: 79% Property Tax: 6%	Alcohol: 78% Sales Tax: 7%

As you may know, New York state faces a \$14 billion budget shortfall. Let me read you some statements about possible new taxes to generate revenue and proposed cut-backs to deal with this crisis. Please tell me which statement comes closer to your view.

Summary

Summary

- Tobacco tax increases have significantly reduced tobacco use in the US
 - Promote adult cessation, prevent youth initiation, and reduce consumption
- Potential for using excise taxes on sugar-sweetened beverages to curb SSB consumption and reduce obesity

Summary

- Taxes generate significant revenues and revenues increase when tax increases
 - Added reductions in use/consequences when revenues earmarked for prevention/control efforts
- Generally more public support than for other taxes or budget cuts
 - Particularly when revenues earmarked for prevention and control

www.bridgingthegapresearch.org

fjc@uic.edu

Common Oppositional Arguments

Myths & Facts

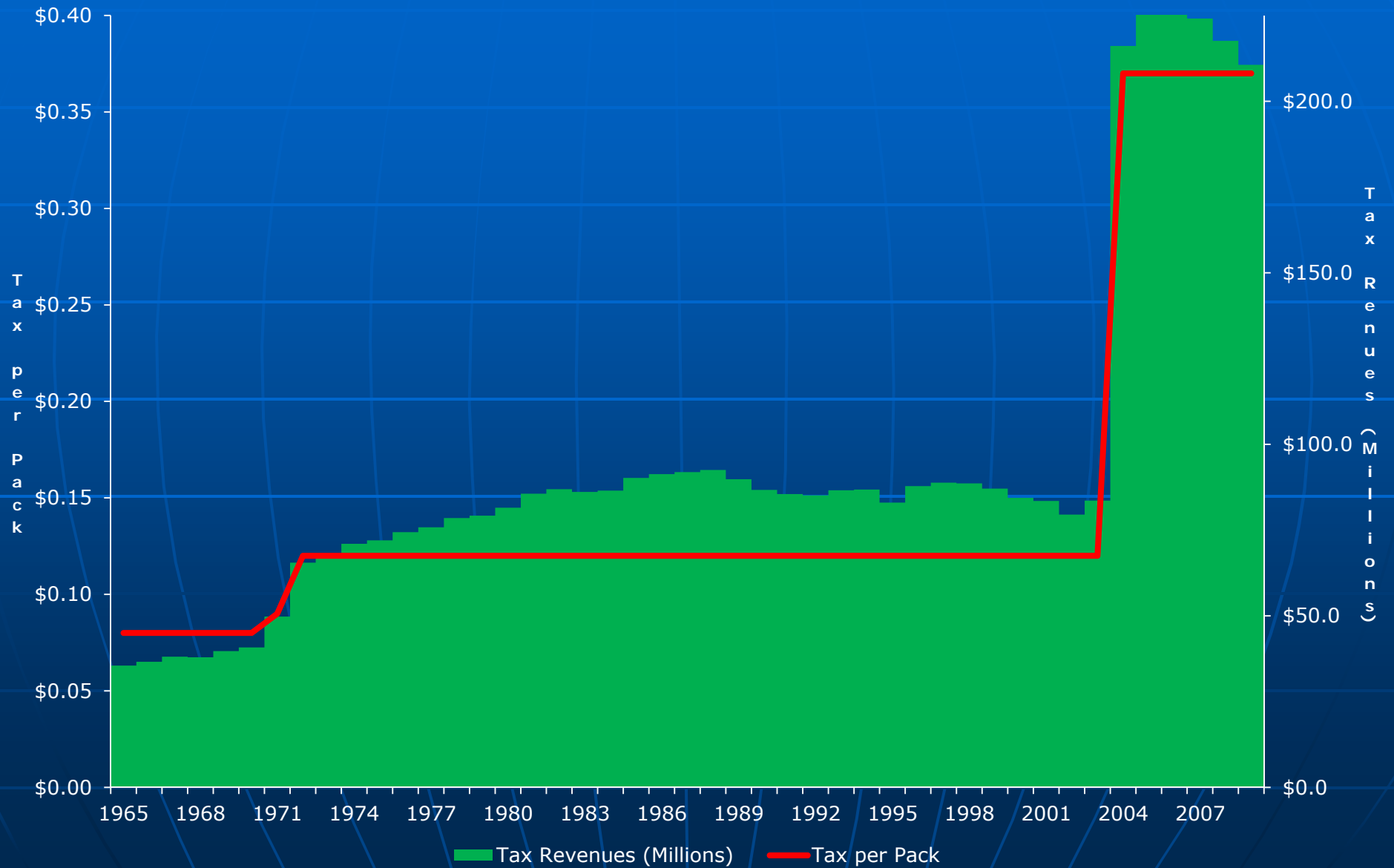
Impact on Revenues

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 Increase on Revenue Results from:

Low share of tax in price:

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

Less than proportionate decline in consumption:

- 10% price increase reduces consumption by 4%

Positive Effect of Tax Increase on Revenues

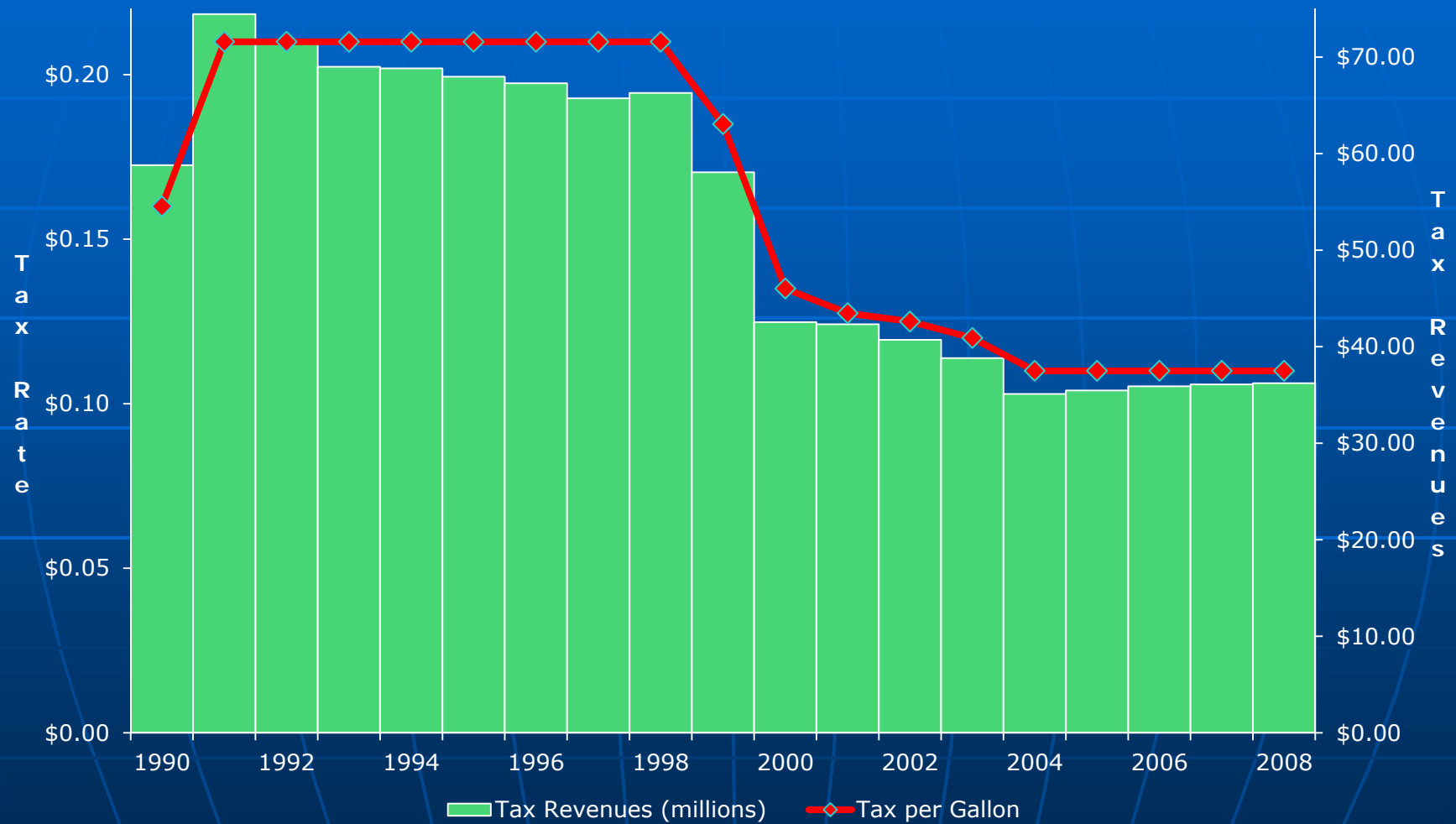
Example – with significant tax avoidance

- Price \$4.00, State tax \$1.00, Sales 500 million packs
 - Revenues: = \$500 million
- Double tax to \$2.00; price rises to \$5.00
 - 100% tax increase; 25% price increase
- 25% price increase reduces sales by 20% (reduced consumption plus tax avoidance)
 - new sales 400 million packs
 - *80% of original sales at double the tax increases revenues by 60%*
 - new revenues = \$800 million

Revenue Impact

- **Increases in alcoholic beverage taxes:**
 - Increase government tax revenues
 - Even smaller share of tax in price
 - Less than proportionate reductions in consumption in response to price increase
 - Broader tax base implies greater potential revenues
 - Revenue increases sustained over time
 - Changes in revenues gradual and predictable

New York Beer Tax and Tax Revenues, 1990-2008, Not Inflation Adjusted



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

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.

Impact on 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 most states

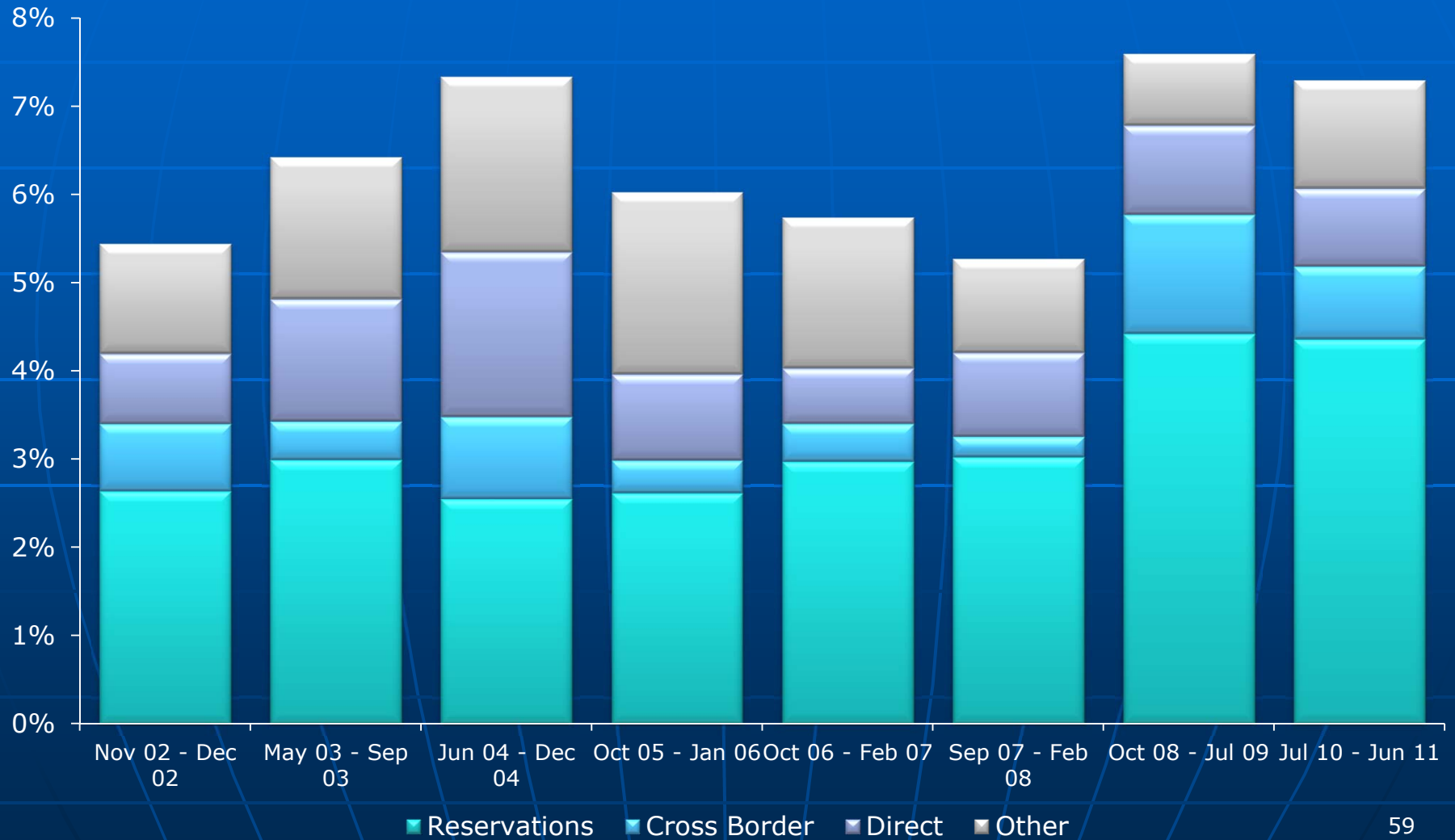
Tax Avoidance & Evasion

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.

Tax Avoidance

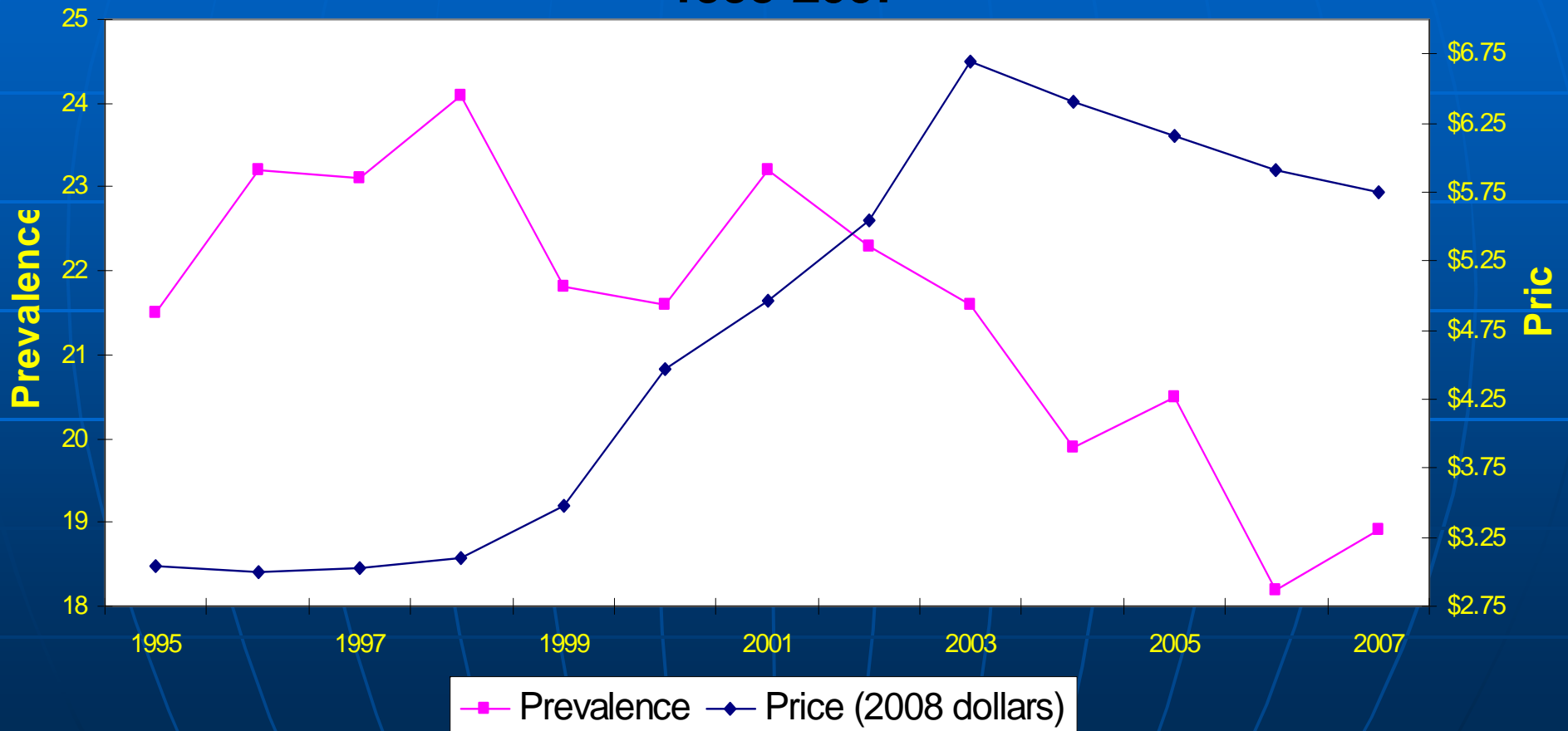
US Smokers, Last Purchase, November 2002-June 2011



Source, ITC project, US survey, Waves 1-8

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

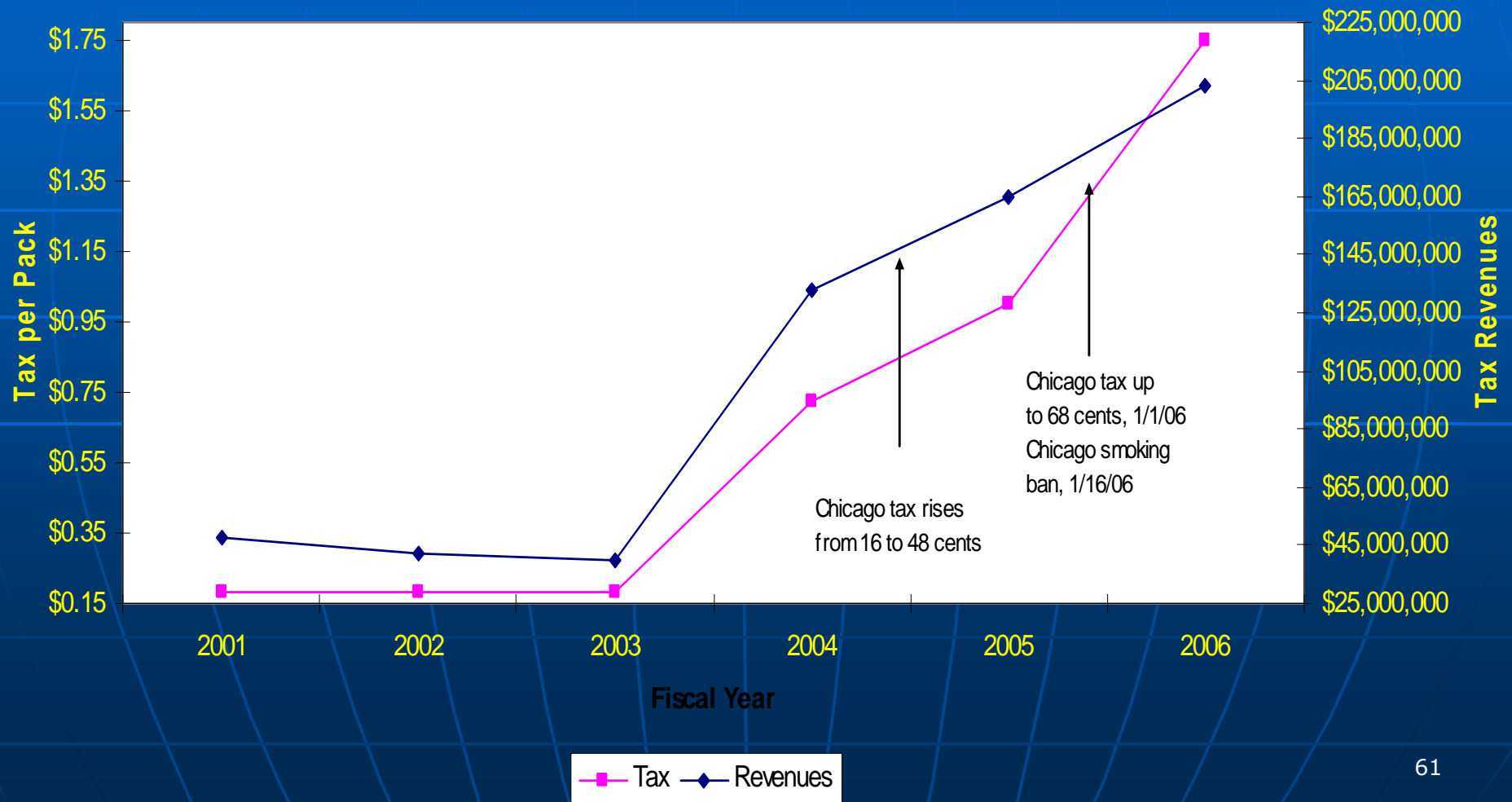
Cigarette Prices and Adult Prevalence, New York, 1995-2007



Source: Tax Burden on Tobacco, 2008 and BRFSS

Tax Avoidance & Evasion Do NOT Eliminate Revenue Impact of Higher Taxes

Cook County Cigarette Tax and Tax Revenues - FY01-FY06



Combating Tax Evasion

- High-tech tax stamps
- Licensing of all involved in distribution and sale
- Strong enforcement
- Swift, severe penalties
- Focus on large scale, criminal activity
- Coordinated efforts
 - NAAG efforts targeting Internet
 - Agreements with tribes



Impact on the Poor

July 23, 2010 – San Francisco Examiner

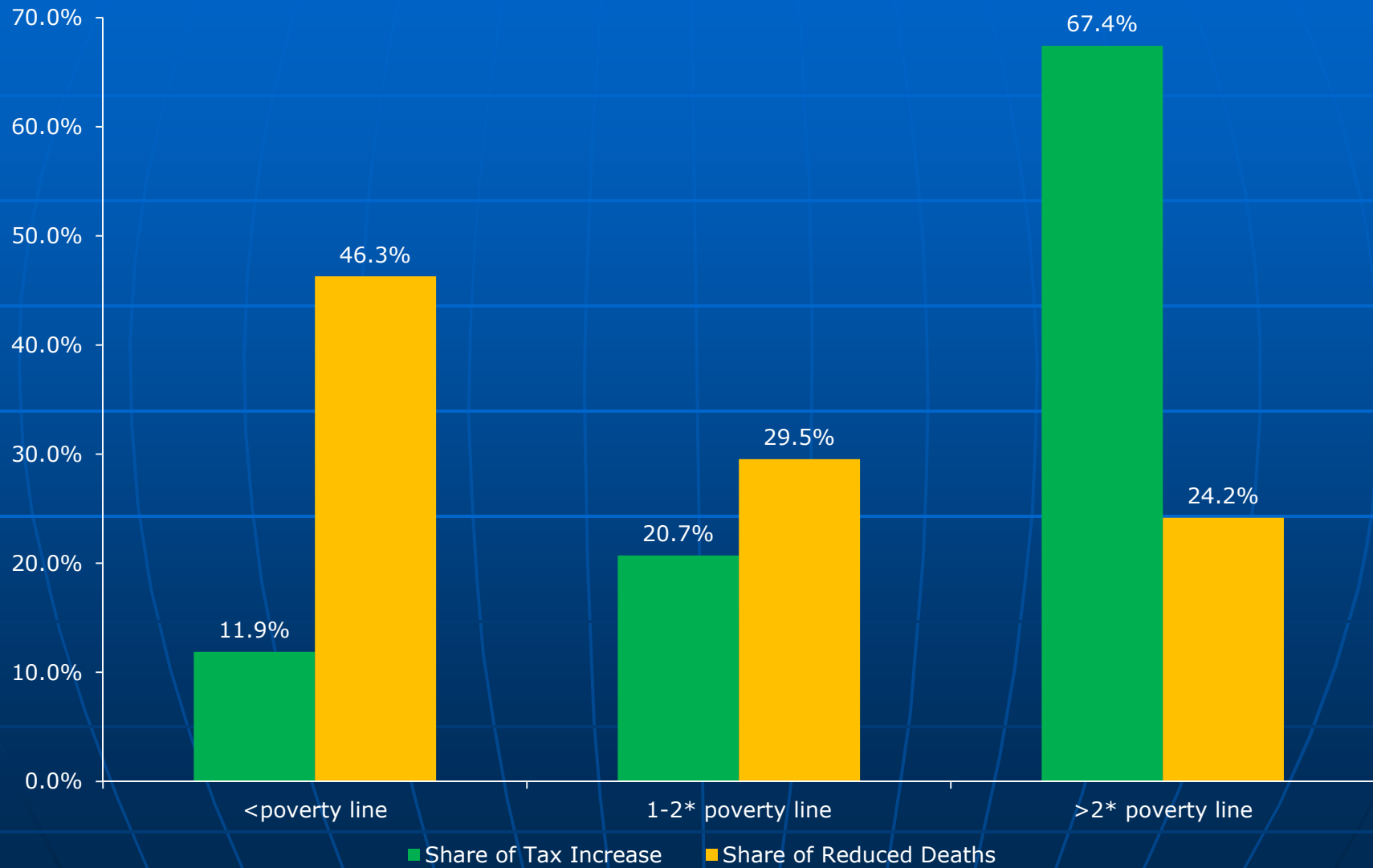
- “Democrats are relying more heavily in their midterm 2010 election message that Republicans care nothing about the poor. Conveniently absent from this analysis is Republican opposition to President Barack Obama’s cigarette tax increase..... **While higher cigarette taxes do discourage smoking, they 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 tobacco taxes
 - Tobacco taxes are regressive, but tax increases can be progressive
 - Greater price sensitivity of poor – relatively large reductions in tobacco 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



Source: Chaloupka et al., in progress; assumes higher income smokers smoke more expensive brands

Impact on the Poor

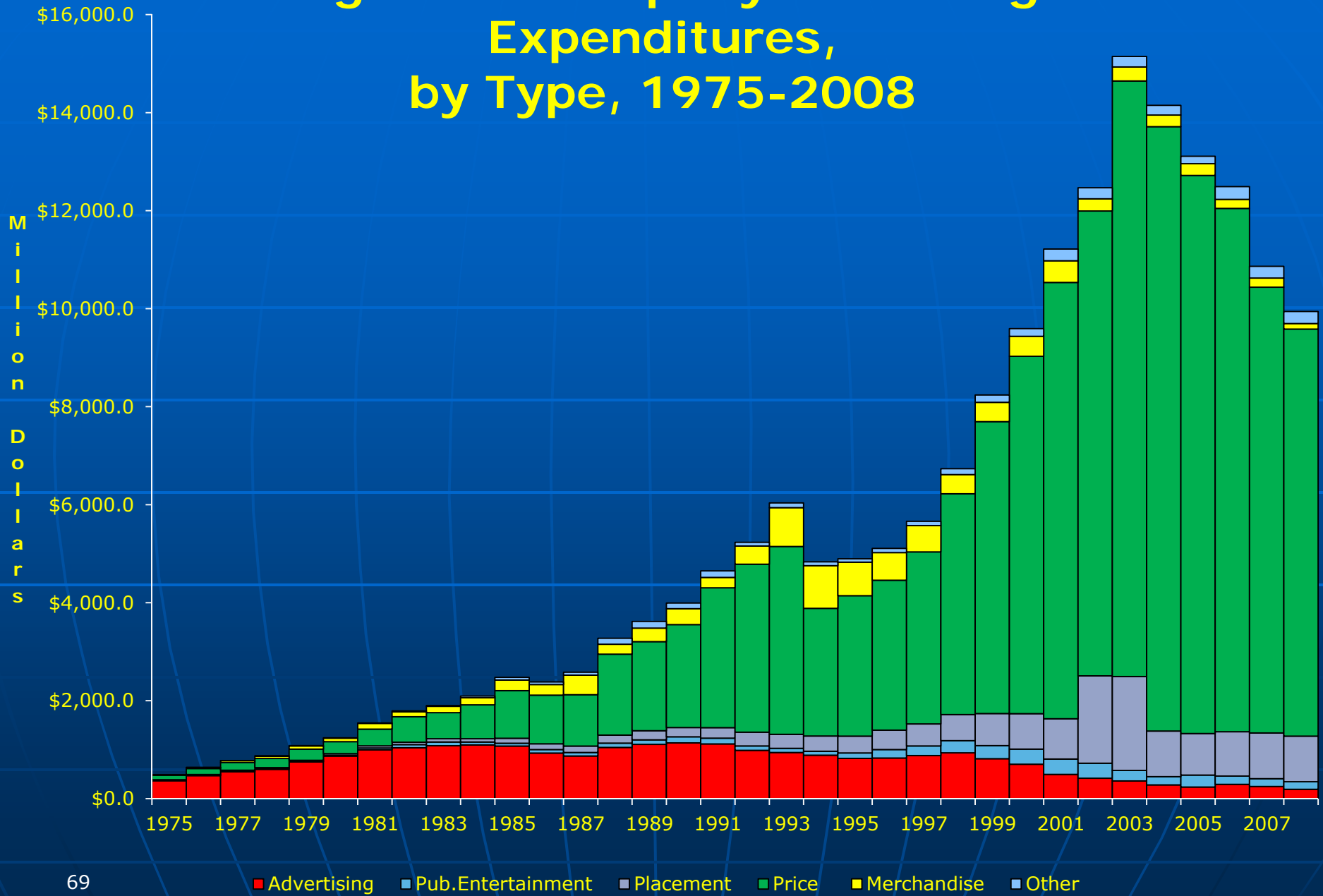
- Need to consider overall fiscal system
 - Key issue with tobacco taxes is what's done with the revenues generated by the tax
 - Greater public support for tobacco tax increases when revenues are used for tobacco control and/or other health programs
 - Net financial impact on low income households can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

Counterarguments

- Same as have been raised against tobacco and alcohol taxes
 - Employment impact
 - Ongoing research assessing impact of reduced SSB consumption on employment
 - Impact on the poor
 - Tax avoidance/evasion

Industry Price Marketing

Cigarette Company Marketing Expenditures, by Type, 1975-2008



Tobacco Industry Efforts to Offset Tax Increase

On February 4th, 2009, the Federal Government enacted legislation to fund the expansion of the State Children's Health Insurance Program (SCHIP) that increases excise taxes on cigarettes by 158%.

As a result, you will see the price of all cigarettes, including ours, increase in retail stores.

We know times are tough, so we'd like to help. We invite you to register at Marlboro.com to become eligible for cigarette coupons and special offers using this code: **MAR1558**

Thank You,

Philip Morris USA

Restricting Marketing?

- Family Smoking Prevention and Tobacco Control Act, 2009
 - Eliminates federal pre-emption of stronger state, local restrictions on tobacco company marketing
 - Allows limits on time, place or manner of tobacco company marketing
 - Comprehensive state and/or local marketing bans possible?

Minimum Pricing Policies

- 25 states with minimum pricing policies
- Typically mix of minimum markups to wholesale and retail prices
 - Median wholesale markup 4%
 - Median retail markup 8%
- 7 states prohibit use of price promotions in minimum price calculation
- Little impact on actual retail prices
 - Greater impact where promotions excluded

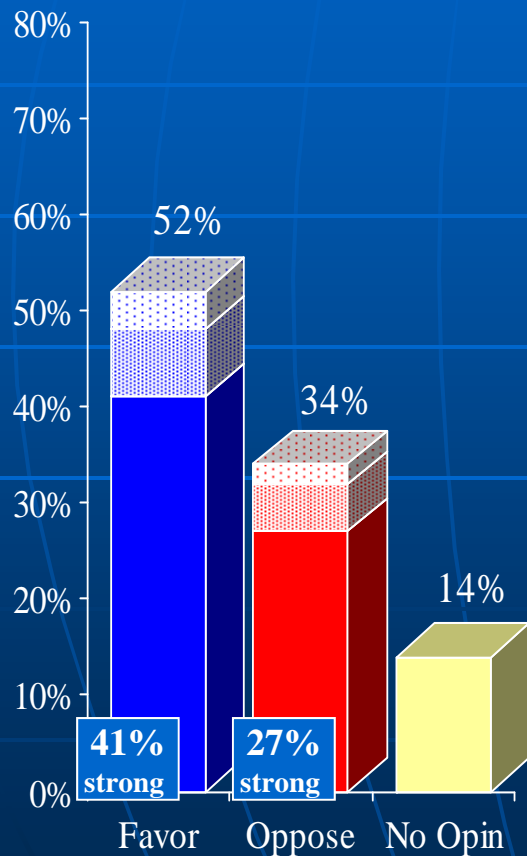
Popular Support for Tobacco Taxes

Popular with Voters

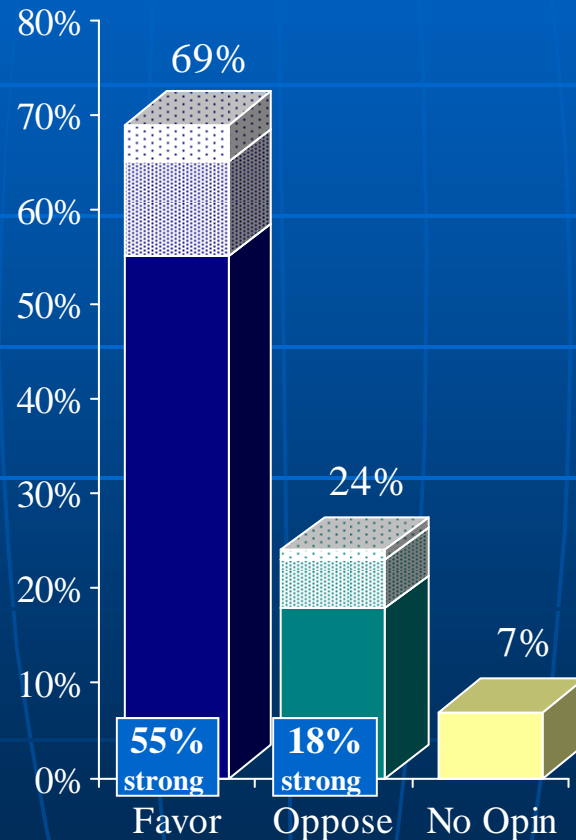
- Tobacco Excise Tax Increases:
 - *Generally supported by voters*
 - *Supported by those likely to vote for either party*
 - *More support when framed in terms of impact on youth tobacco use*
 - *More support when some of new revenues are used to support tobacco control and/or other health-related activities*
 - Comprehensive state tobacco control programs
 - Expanded public health insurance programs (e.g. S-CHIP; Arkansas)
 - *Greater support than for other revenue sources*

Earmarking for Youth Smoking Prevention Increases Support For Tobacco Tax Hikes

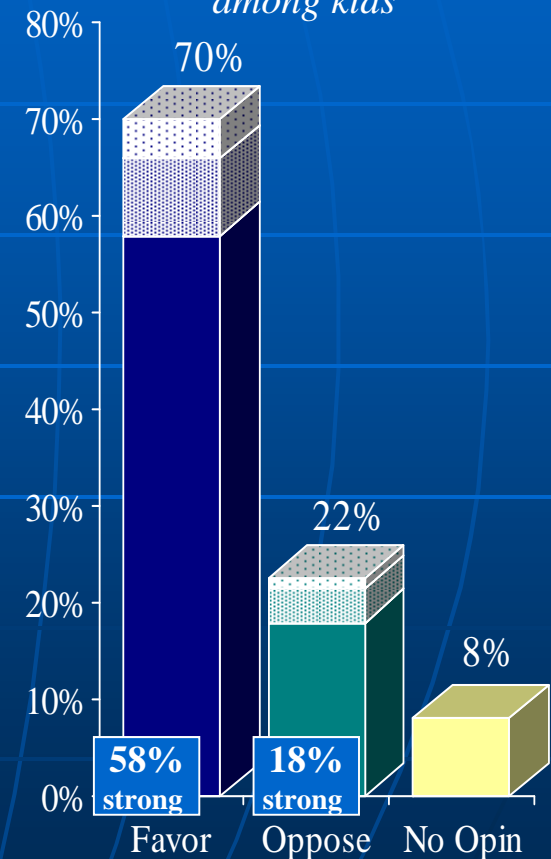
Would you favor or oppose an increase in the state tobacco tax?



... as part of an effort to help reduce smoking, particularly among kids

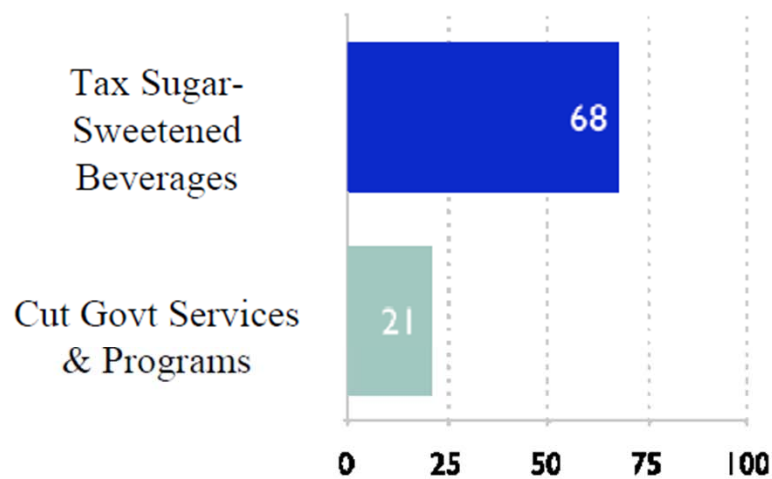


...if part of the money is used to fund programs to reduce tobacco use, particularly among kids

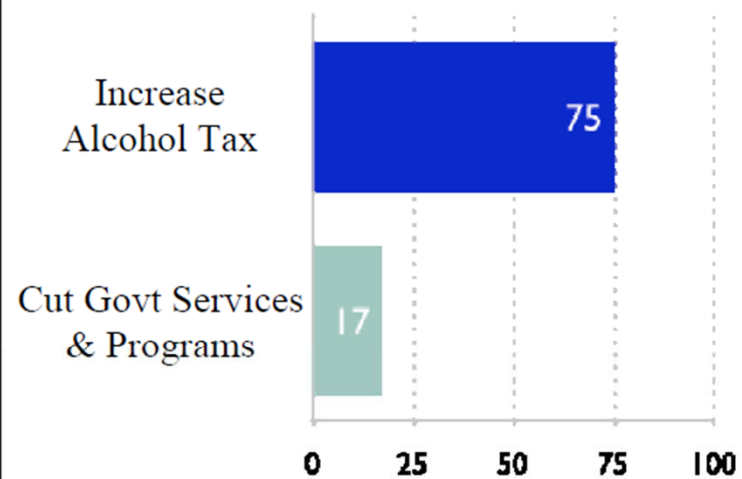


Voters Prefer Taxes on Alcohol and Sugar-Sweetened Beverages over Cuts in Government Services by Margins of More than 3 to 1

- As you may know, New York state faces a \$14 billion budget shortfall. Let me read you some statements about possible new taxes to generate revenue and proposed cut-backs to deal with this crisis. Please tell me which statement comes closer to your view.*



*I would prefer to tax sugar-sweetened beverages. /
I would prefer to cut government services and programs.*



*I would prefer to increase the alcohol tax. /
I would prefer to cut government services and programs.*

Voters Prefer Taxes on Alcohol and Sugar-Sweetened Beverages over Increased Property or Sales Taxes

Property Tax	Sales Tax
Sweetened Beverages: 73% Property Tax: 9%	Sweetened Beverages: 65% Sales Tax: 16%
Alcohol: 79% Property Tax: 6%	Alcohol: 78% Sales Tax: 7%

As you may know, New York state faces a \$14 billion budget shortfall. Let me read you some statements about possible new taxes to generate revenue and proposed cut-backs to deal with this crisis. Please tell me which statement comes closer to your view.

For more information:

http://www.bridgingthegapresearch.org/research/sodasnack_taxes/

The screenshot shows a Windows Internet Explorer browser window with the address bar displaying http://www.bridgingthegapresearch.org/research/sodasnack_taxes/. The website header features the logo "bridging the gap" and the tagline "Research Informing Policies and Practices for Healthy Youth". A navigation menu includes "HOME", "ABOUT US", "RESEARCH", "RELATED SITES", and "CONTACT US". Below this, a secondary menu highlights "Soda/Snack Taxes" among other options like "District Wellness Policies" and "Elementary School Survey".

Soda/Snack Taxes

This page highlights our research around state-level taxes on snack foods, soda, and other sweetened beverages. To see products from other BTG research activities, click on the "Research" tab above.

Sugar-Sweetened Beverage Taxes and Public Health: Research Brief

This 2009 research brief provides an overview of the current research on the health impacts of sugar-sweetened beverage (SSB) consumption, how food and beverage prices affect consumption and related weight outcomes, and the potential impact of both large and small SSB taxes.

[Research Brief \(PDF\)](#)

State Sales Taxes on Soda and Snack Foods

This file contains annual data on sales tax rates for each of the 50 states and the District of Columbia for sodas and selected snack products sold

DEFINITIONS

These files contain definitions of food and food products for use in conjunction with the snack tax data. These definitions were compiled beginning with the 2008 tax data file year and reflect codified state law as of January 1 of each year. Additional variables include state abbreviation, enacted and effective date (where applicable or if able to be determined), and the statutory/administrative law citations. The data were compiled by The MayaTech Corporation for the Bridging the Gap Program at the University of Illinois at Chicago.

[2008 DEFINITIONS >](#)
[2009 DEFINITIONS >](#)