Lessons Learned from Tobacco and Alcohol Taxation and Implications for Obesity Prevention

Frank J. Chaloupka
University of Illinois at Chicago

Northwestern University, Department of Preventive Medicine, March 21, 2011

"***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.***

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

Overview

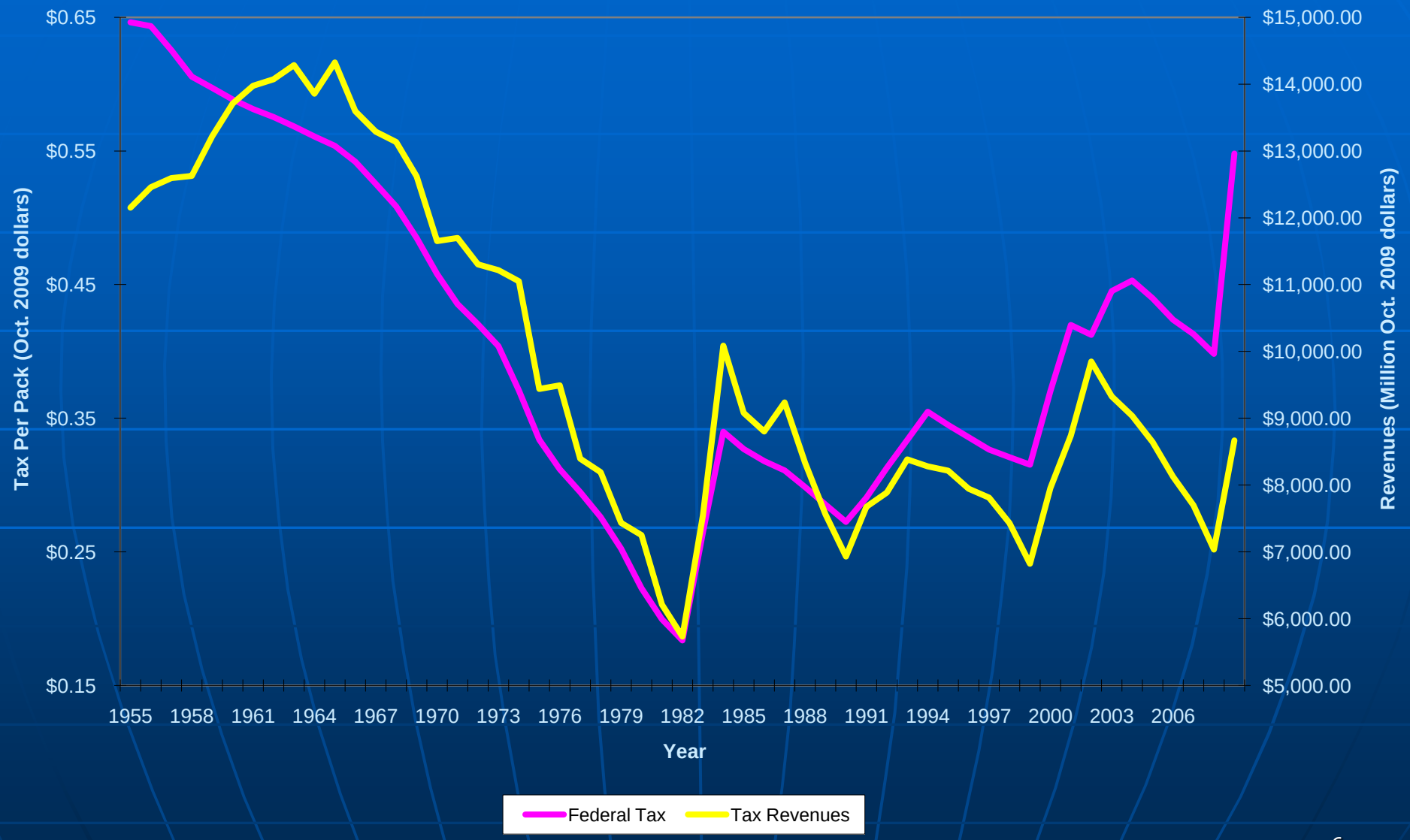
- Overview of tobacco and alcohol taxation
- Impact of taxes/prices on tobacco and alcohol use, consequences of use
- Earmarking revenues for control programs
- Industry price marketing & policy options
- Counterarguments – Myths & Facts
- Implications for obesity prevention

Overview of Tobacco and Alcohol Taxation

Why Tax?

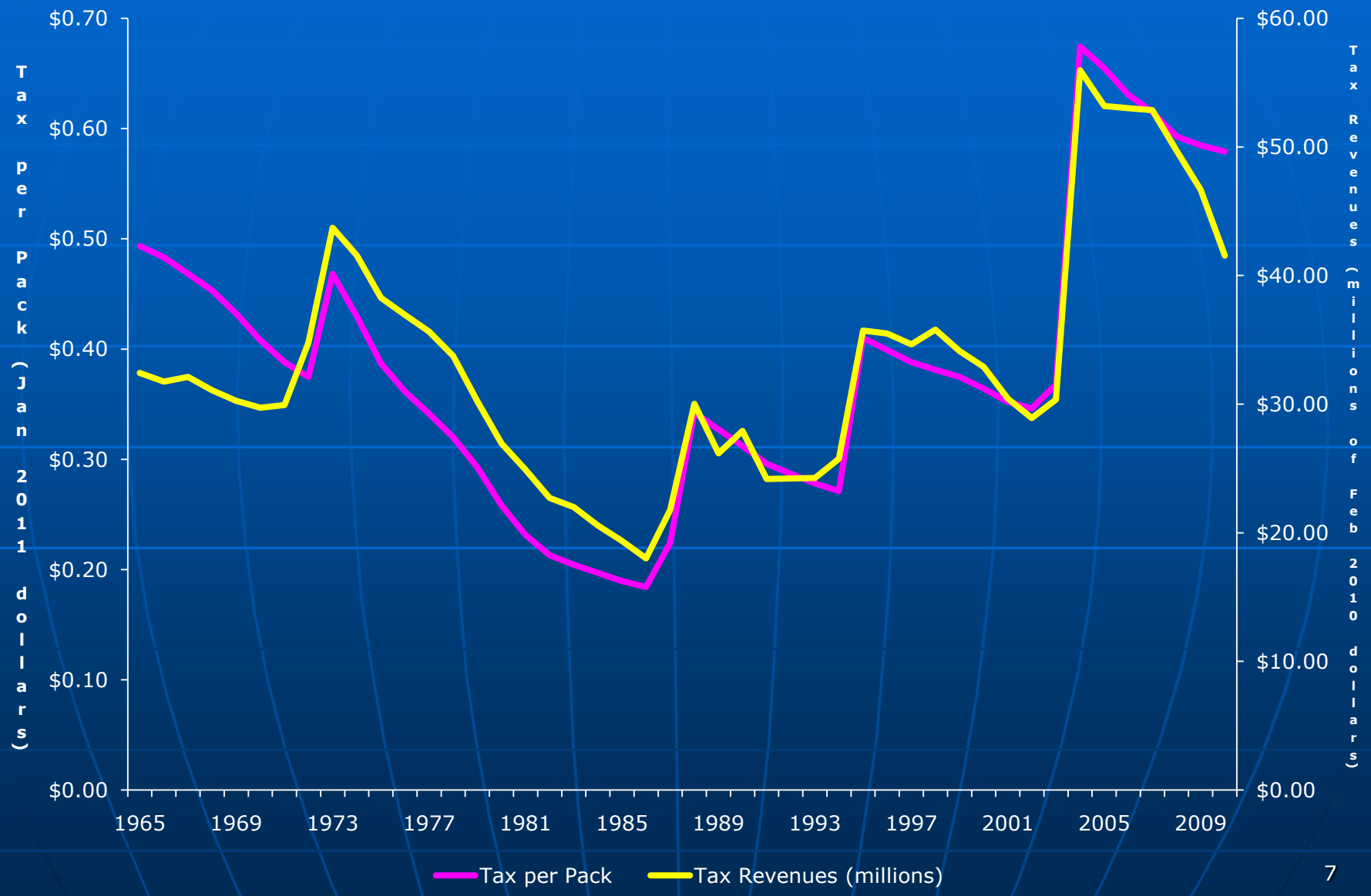
- **Efficient revenue generation**
  - Primary motive historically and still true in many countries today
  - Very efficient sources of revenue given:
    - Historically low share of tax in price in many countries
    - Relatively inelastic demand for tobacco products, alcoholic beverages
    - Few producers and few close substitutes
    - One of many goods/services that satisfies the "Ramsey Rule"
  - "This vice brings in one hundred million francs in taxes every year. I will certainly forbid it at once – as soon as you can name a virtue that brings in as much revenue" – Napoleon III on tobacco tax

Federal Cigarette Tax and Tax Revenues
Inflation Adjusted, 1955-2009



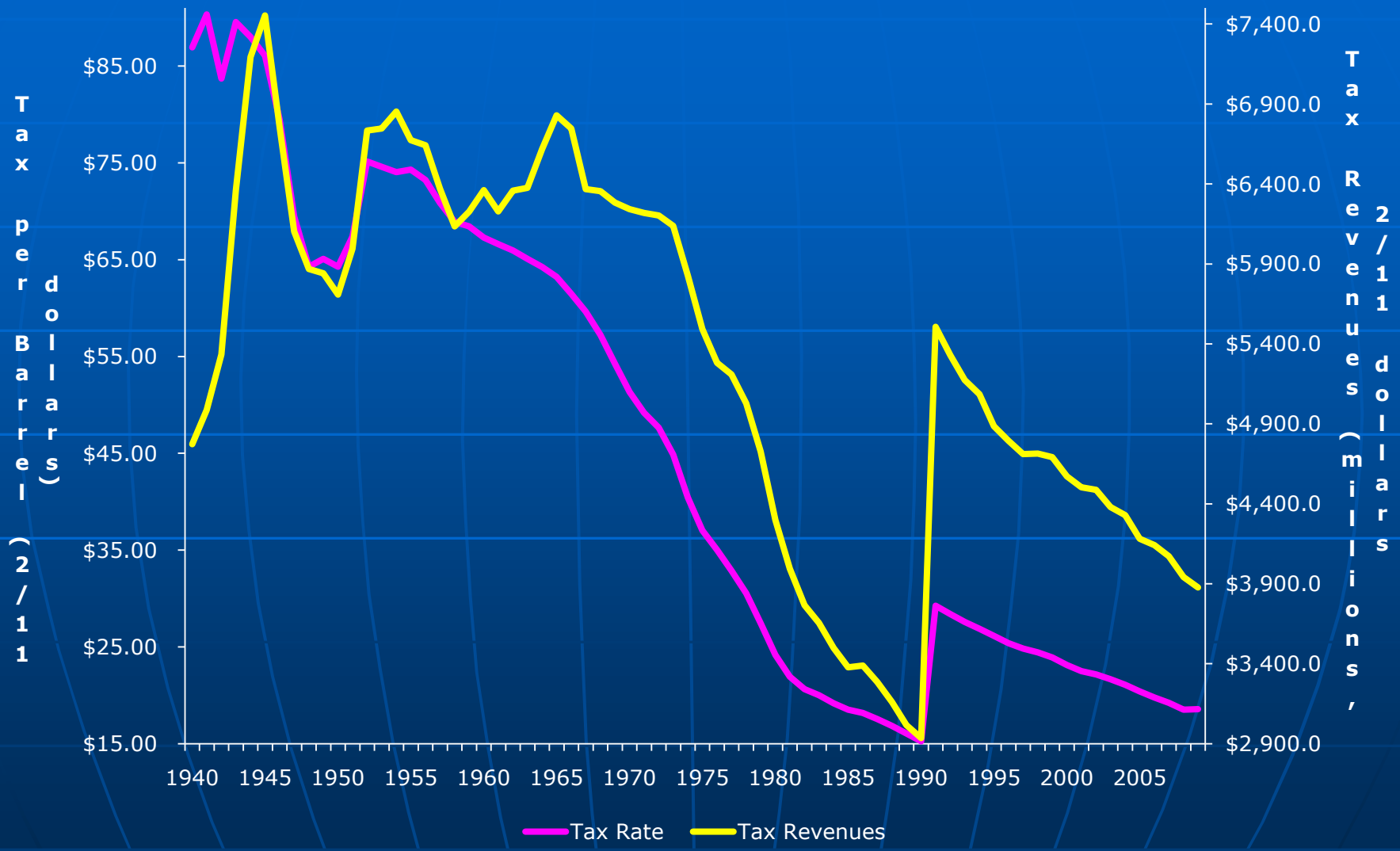
Source: *Tax Burden on Tobacco*, 2010, and author's calculations

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



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

Federal Beer Tax and Tax Revenues
Inflation Adjusted, 1940-2009

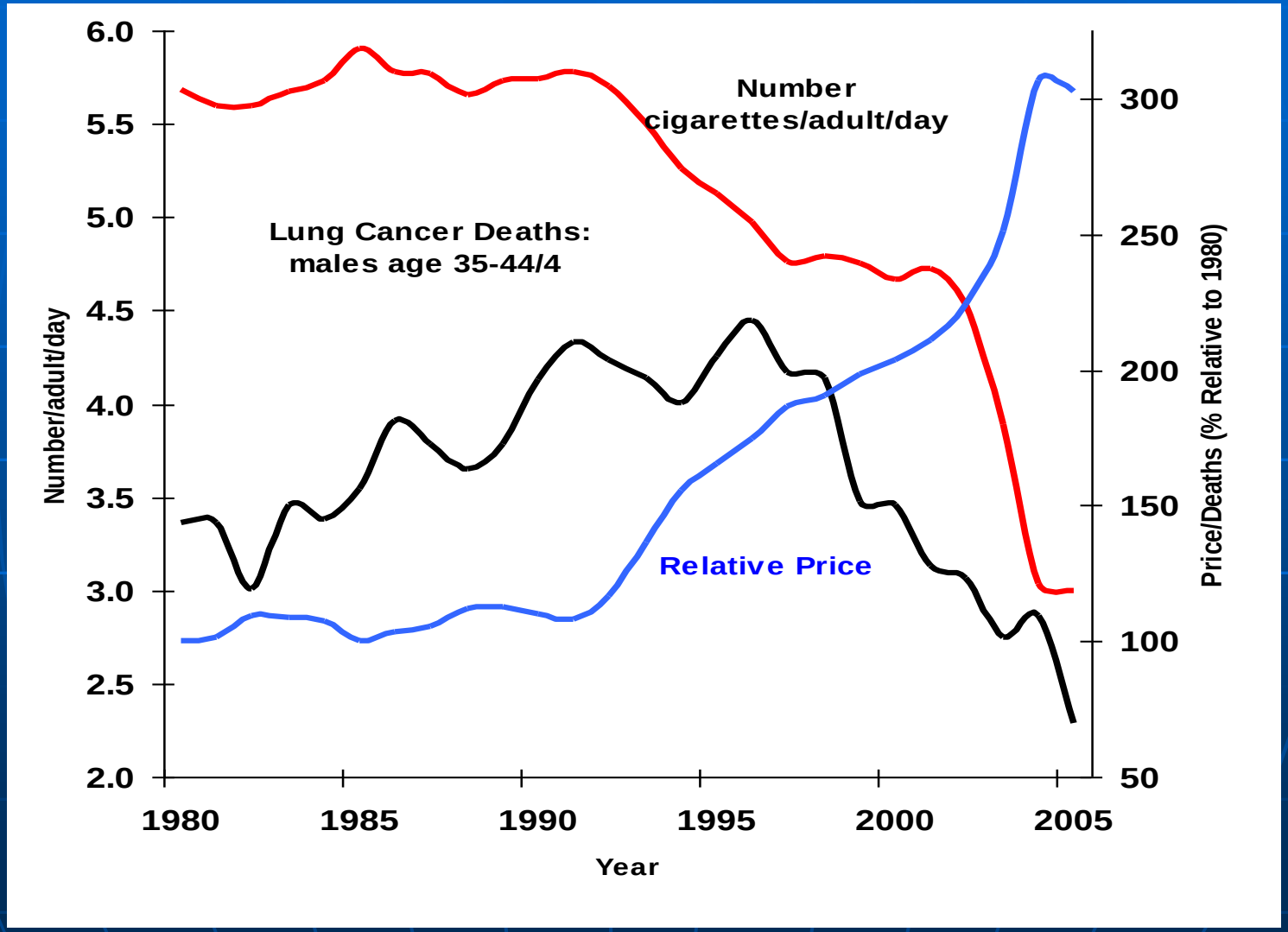


Source: *Brewers Almanac*, 2010, and author's calculations

Why Tax?

- **Promote public health**
  - Increasingly important motive for higher tobacco taxes in many high income countries
    - Less so for alcoholic beverage taxes
  - Based on substantial and growing evidence on the effects of tobacco taxes and prices on tobacco use
    - Particularly among young, less educated, and low income populations
  - *"… We [] have a package of six policy measures, known as MPOWER, that can help countries implement the provisions in the Convention. All six measures have a proven ability to reduce tobacco use in any resource setting.* ***But tobacco taxes are by far the most effective****."* Director General Dr. Margaret Chan, WHO, 2008

France: smoking, tax and male lung cancer, 1980-2000



Source: Jha, 2009

Why Tax Tobacco?

- **Cover the external costs of tobacco and excessive alcohol use**
  - "Pigouvian" tax
  - Less frequently used motive
  - Account for costs resulting from tobacco 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

Types of Taxes

- **Variety of tobacco, alcohol taxes**
  - Taxes on value of tobacco crop
  - Customs duties on tobacco leaf, tobacco products, alcoholic beverage imports and/or exports
  - Sales taxes/Value added taxes
  - Implicit taxes when government monopolizes production and/or distribution
  - Excise taxes (or similar taxes)
    - Many of these are applied to variety of agricultural and/or consumer goods and services
    - Excise taxes are of most interest given specificity to tobacco products, alcoholic beverages

Types of Taxes

- **Excise Taxes**
  - Two types of excises
    - Specific Taxes: excises based on quantity or weight (e.g. tax per pack of 20 cigarettes, wine gallons)
    - *Ad Valorem* taxes: excises based on value of products (e.g. a specific percentage of manufacturer's prices for tobacco products, alcoholic beverages)

    - Federal, state, and local cigarette taxes and federal alcoholic beverage taxes all specific taxes
    - State taxes on other tobacco products, alcoholic beverages are mix of specific and *ad valorem*

Federal Tobacco Taxes

- Federal cigarette tax
  - Specific (per unit) excise tax
  - initially adopted in 1864
  - Raised during war time/lowered during peace time
  - Set at 8 cents per pack in 1951
  - Doubled to 16 cents per pack in 1983
  - Eventually raised to 39 cents per pack in 2002
    - Less than 60% of inflation adjusted value of 1951 tax
  - Significant increase – 61.66 cents – April 1, 2009
    - Earmarked for S-CHIP expansion

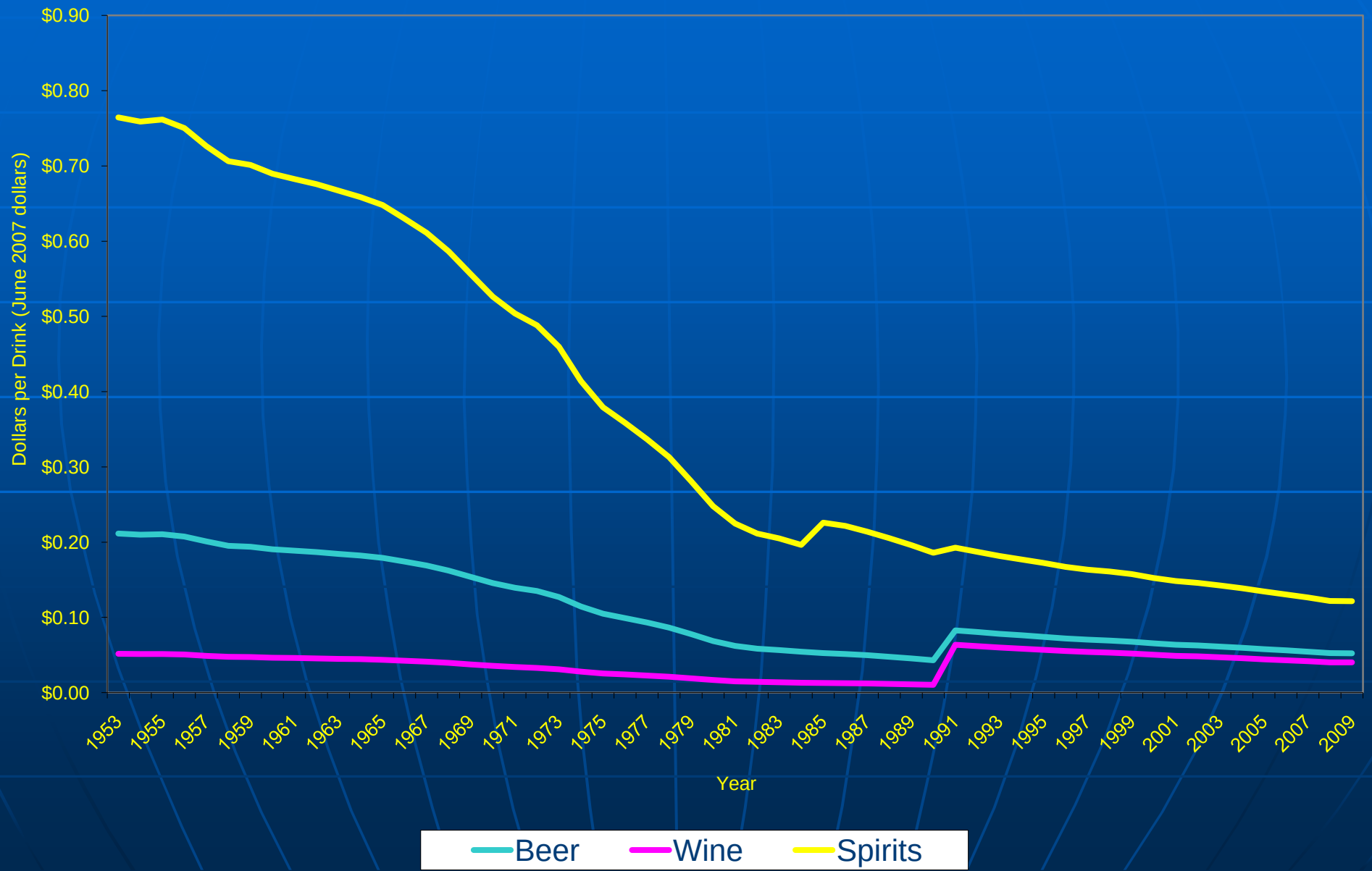
Federal Tobacco Taxes

- Specific federal excise taxes on most other tobacco products, including
  - cigars: $1.0066 per pack on small cigars; 52.75% of price for low priced cigars; cap of 40.26 cents per cigar for high priced cigars
  - chewing tobacco: 3.1 cents per ounce
  - moist snuff: $1.51 per pound
  - roll-your-own tobacco $24.78 per pound
  - pipe tobacco: $2.83 per pound
  - rolling papers: 1.26 cents per pack
  - Until latest increases, most were lower than cigarette tax; more equivalent now
  - Similarly infrequent increases in taxes

Federal Alcohol Taxes

- Specific (per unit) excise taxes
- Beer, spirits taxes adopted in 1862; wine 1916
- Raised during war time/lowered during peace time
- Spirits tax: $10.50 per proof gallon in 1951
  - $12.50 in 1985; $13.50 in 1991
- Table wine tax: $0.17 per wine gallon in 1951
  - $1.07 in 1991
- Beer tax: $9.00 per barrel in 1951
  - $16.00 in 1991
- Tax per ounce of ethanol varies by type of alcoholic beverage

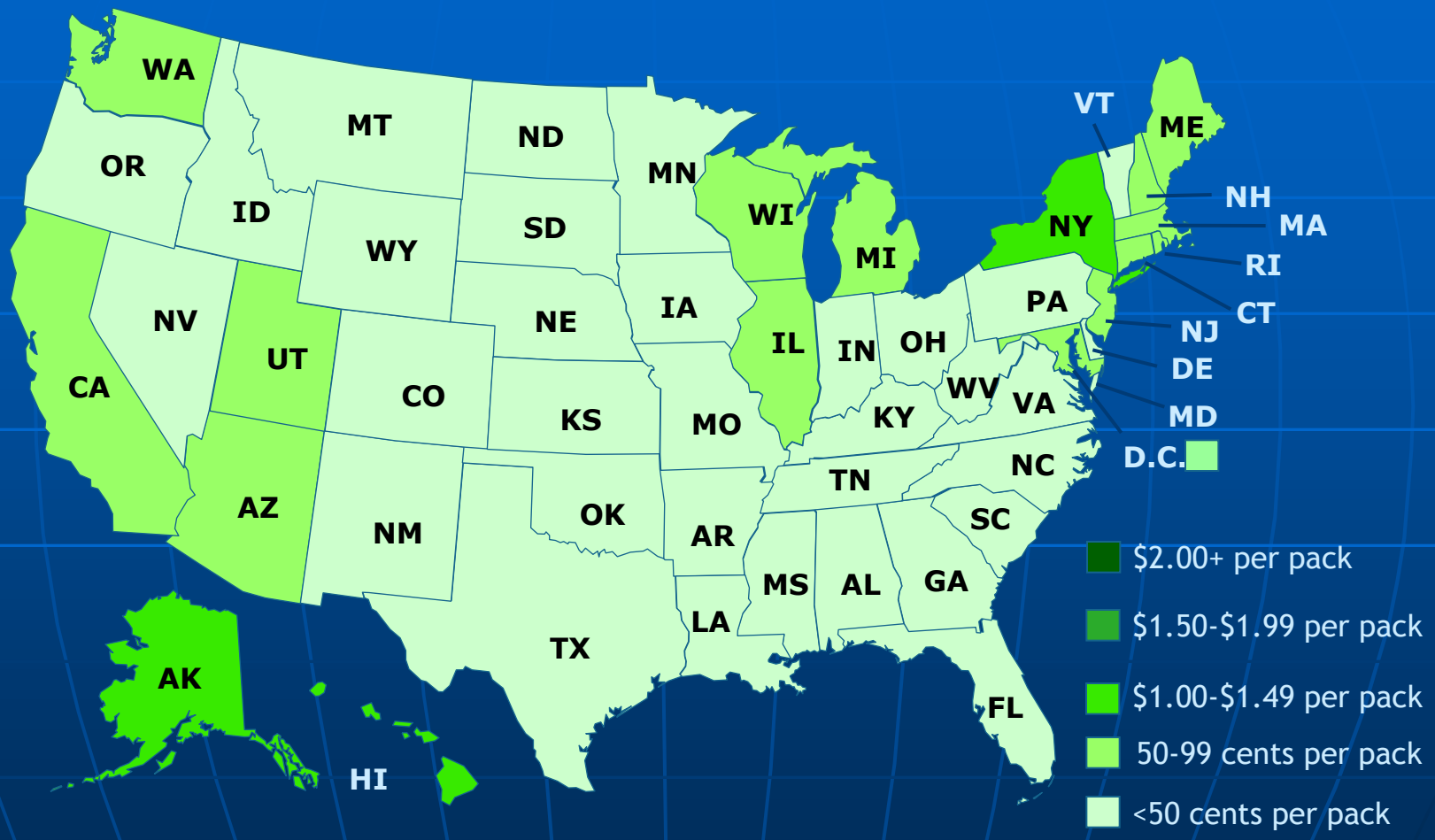
Federal Alcoholic Beverage Taxes per Drink Inflation Adjusted, 1953-2009



State Tobacco Taxation

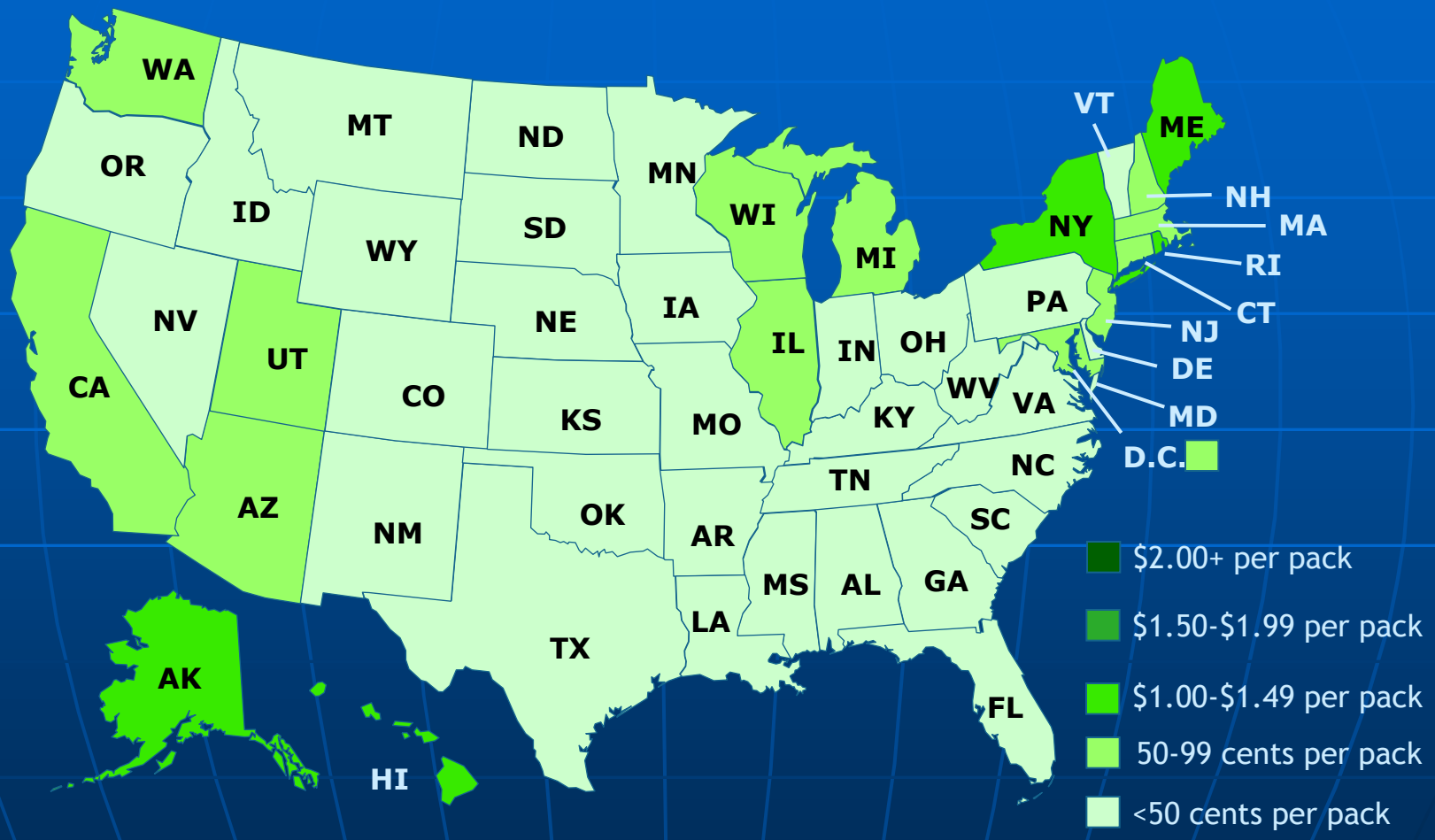
- State cigarette taxes
  - First adopted by IA in 1921; NC last to adopt in 1969
  - Specific excise tax in all states
  - Currently: 17.0 cents/pack (MO) to $4.35/pack (NY)
  - Average $1.45 per pack (48.5 cents in tobacco growing states; $1.57 in other states)
    - Several proposing additional increases

State Cigarette Excise Tax Rates – 2000



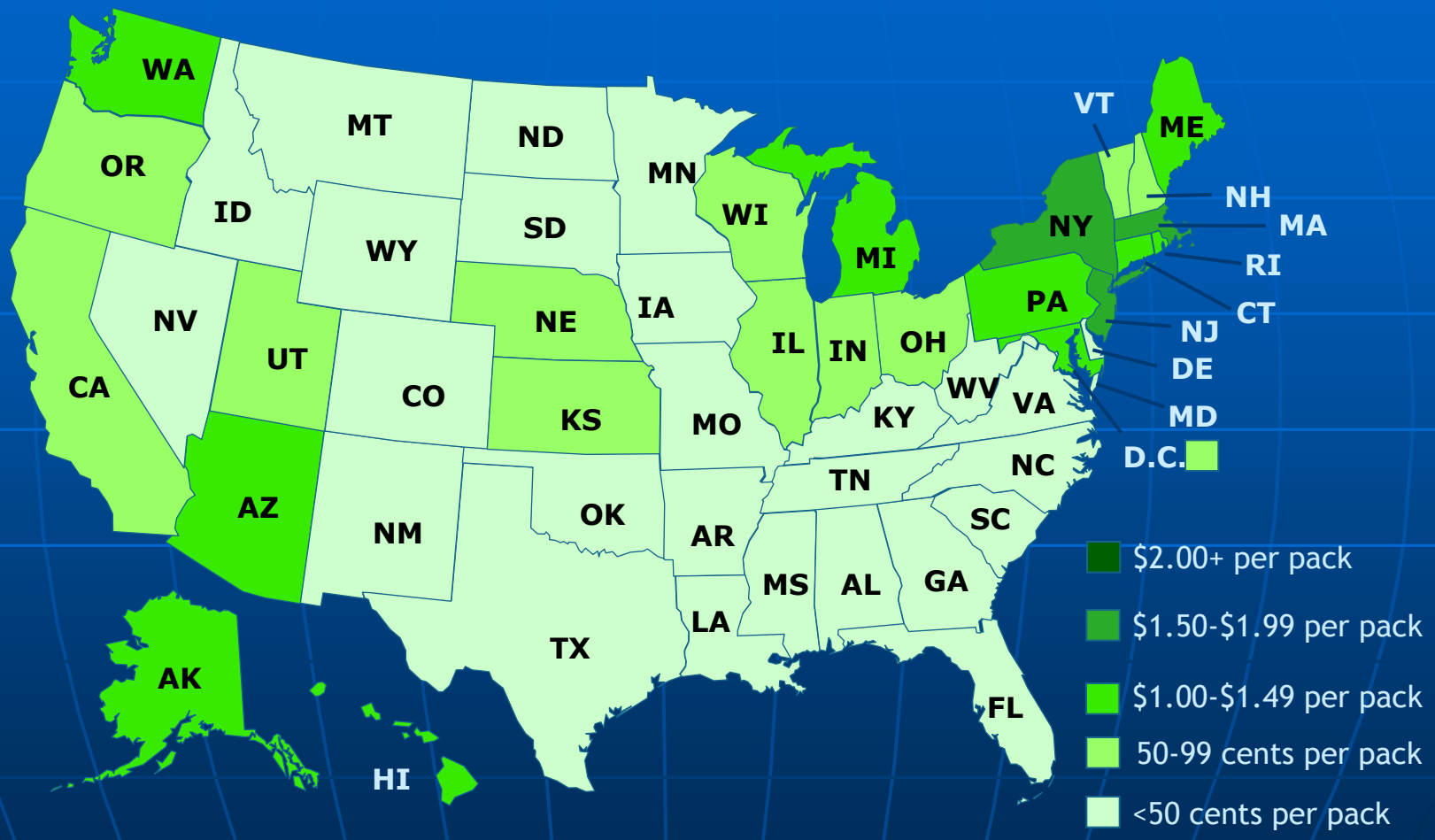
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2001



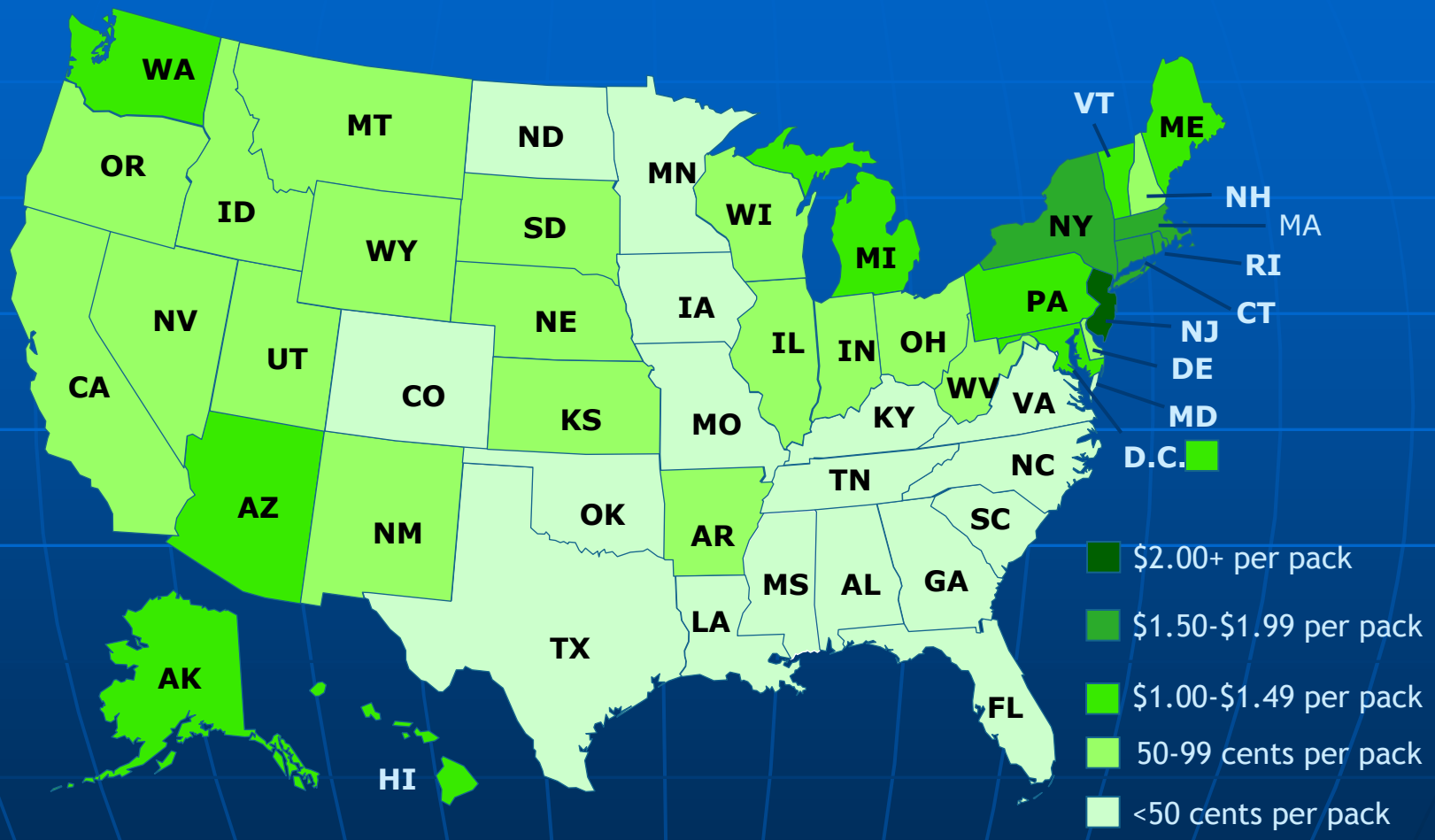
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2002



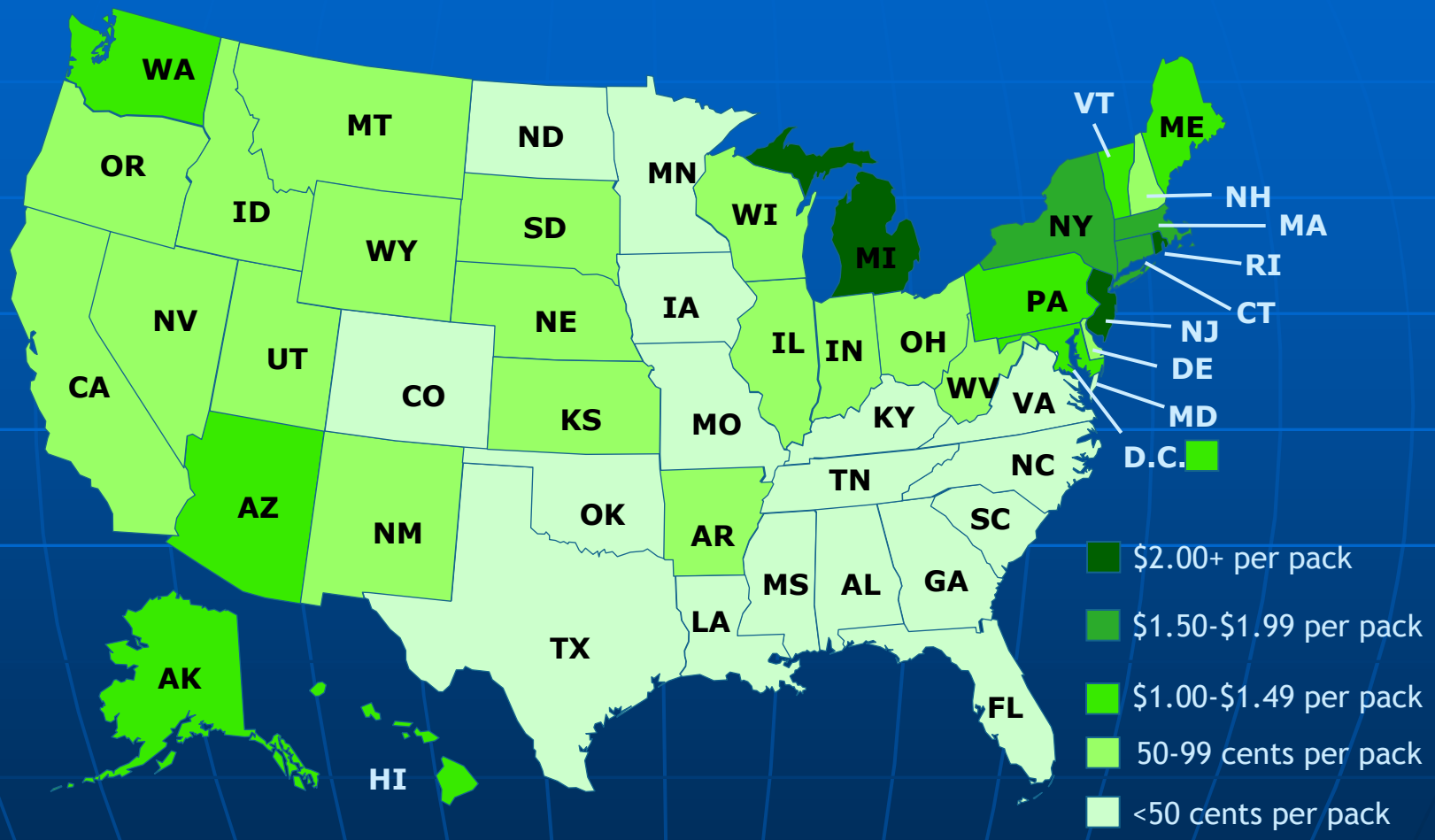
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2003



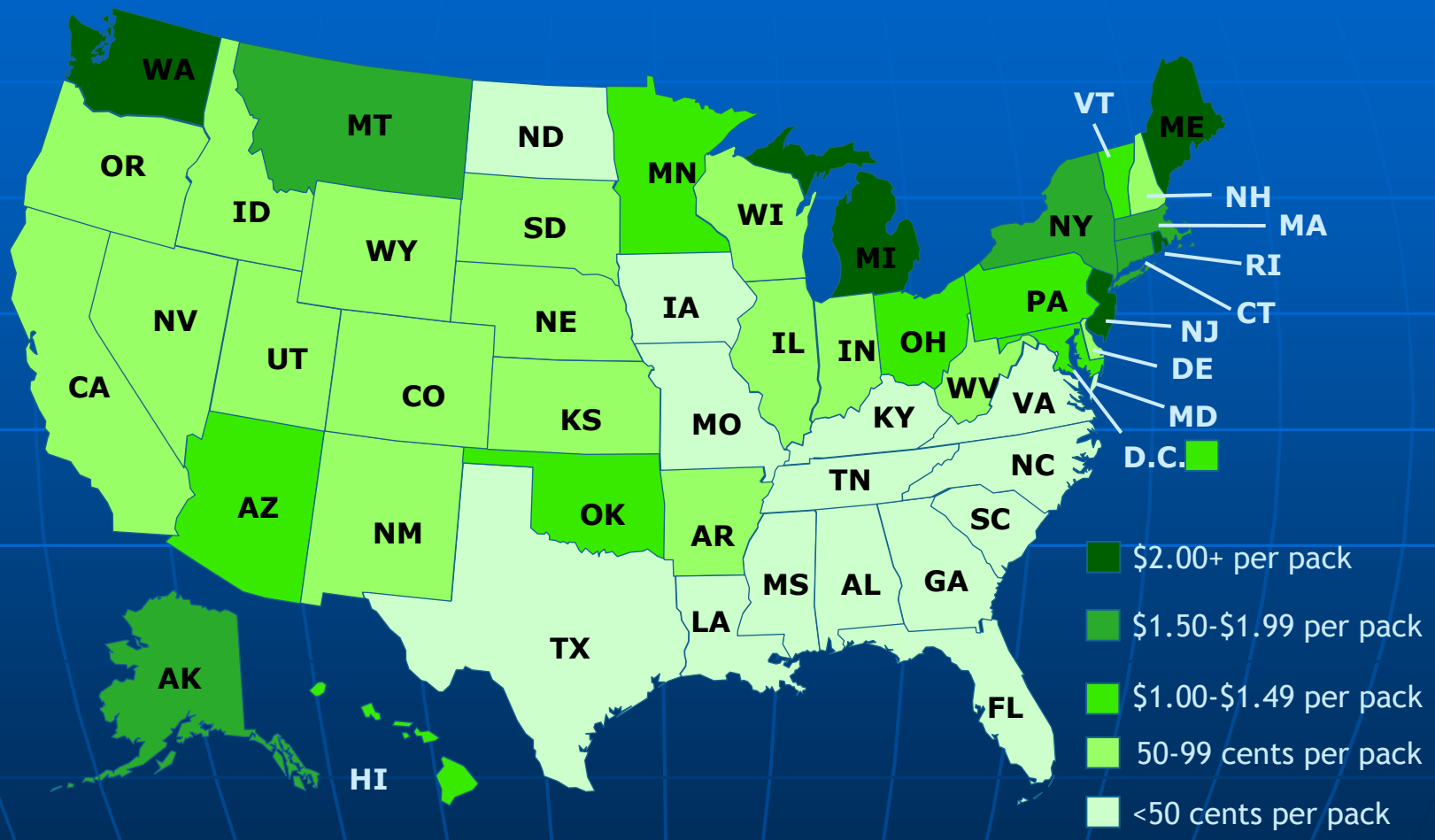
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2004



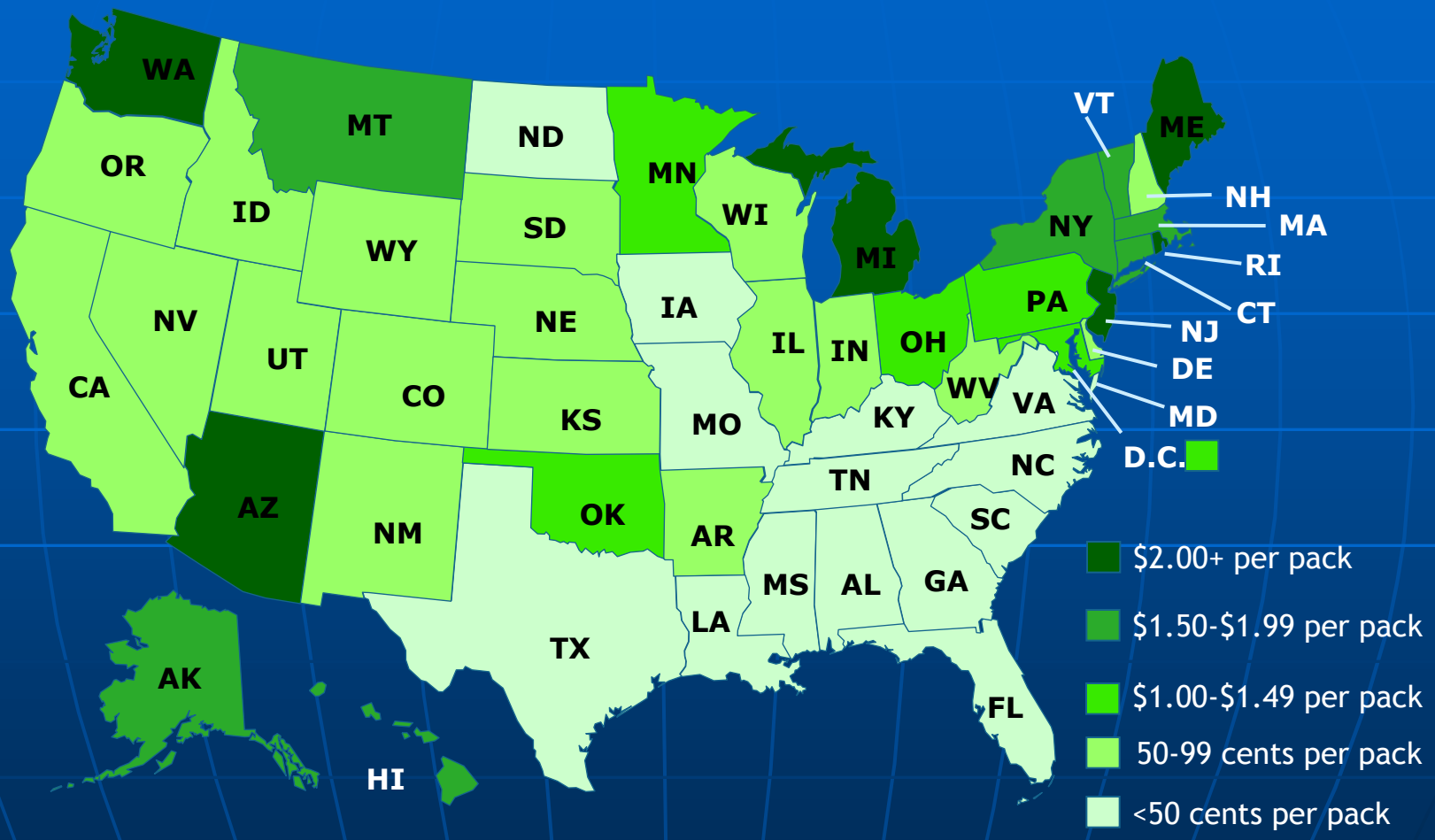
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2005



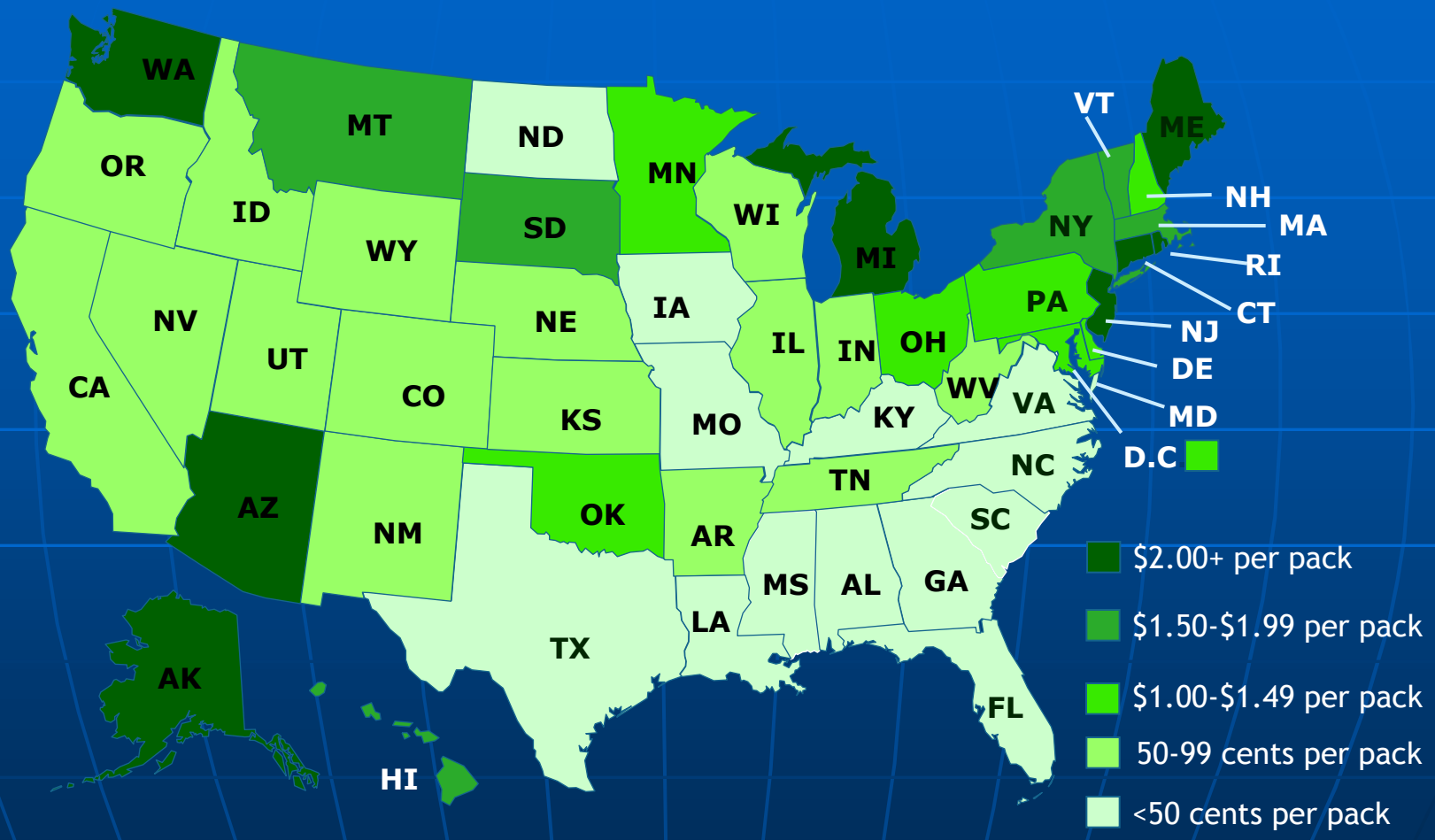
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2006



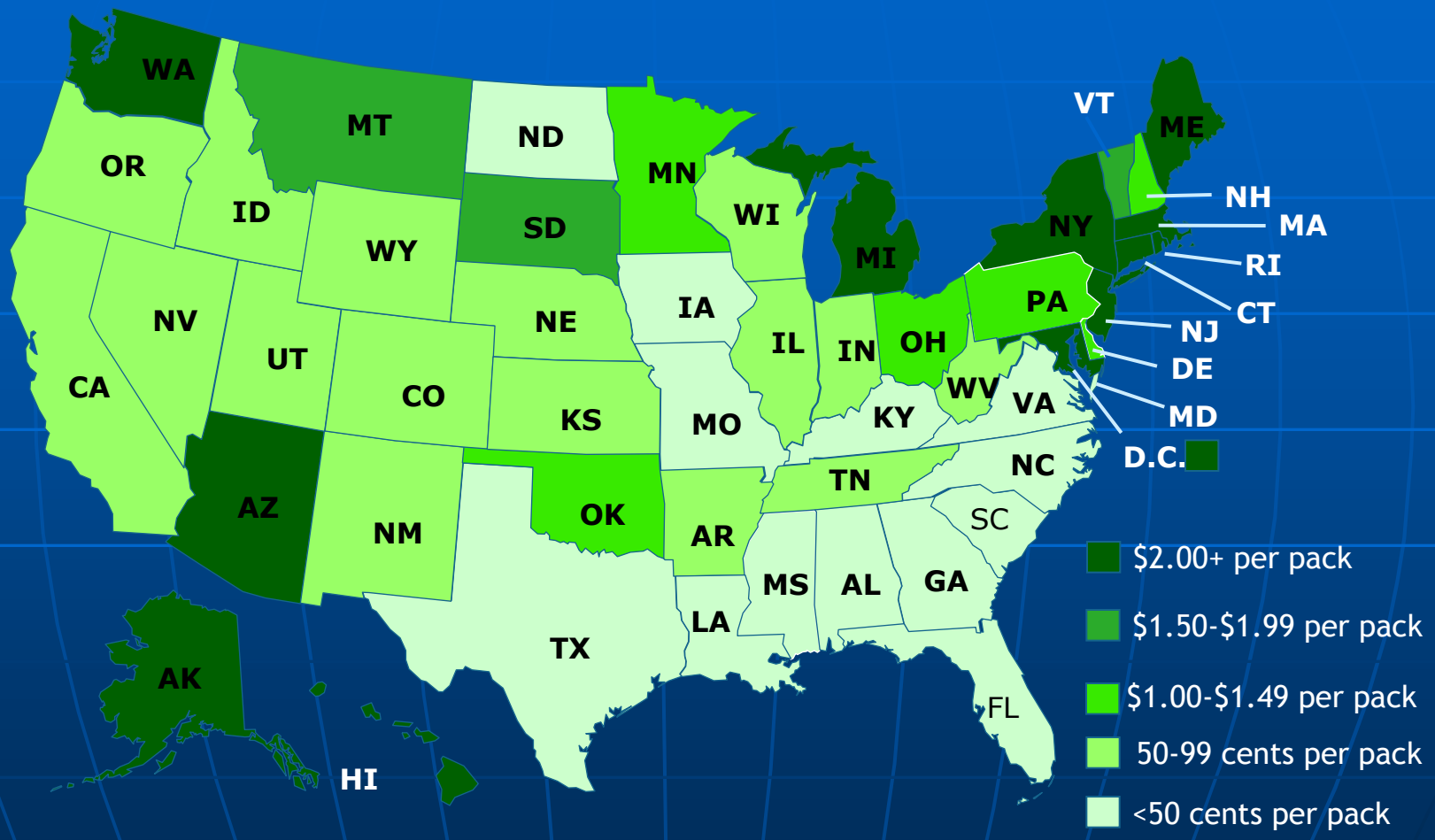
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2007



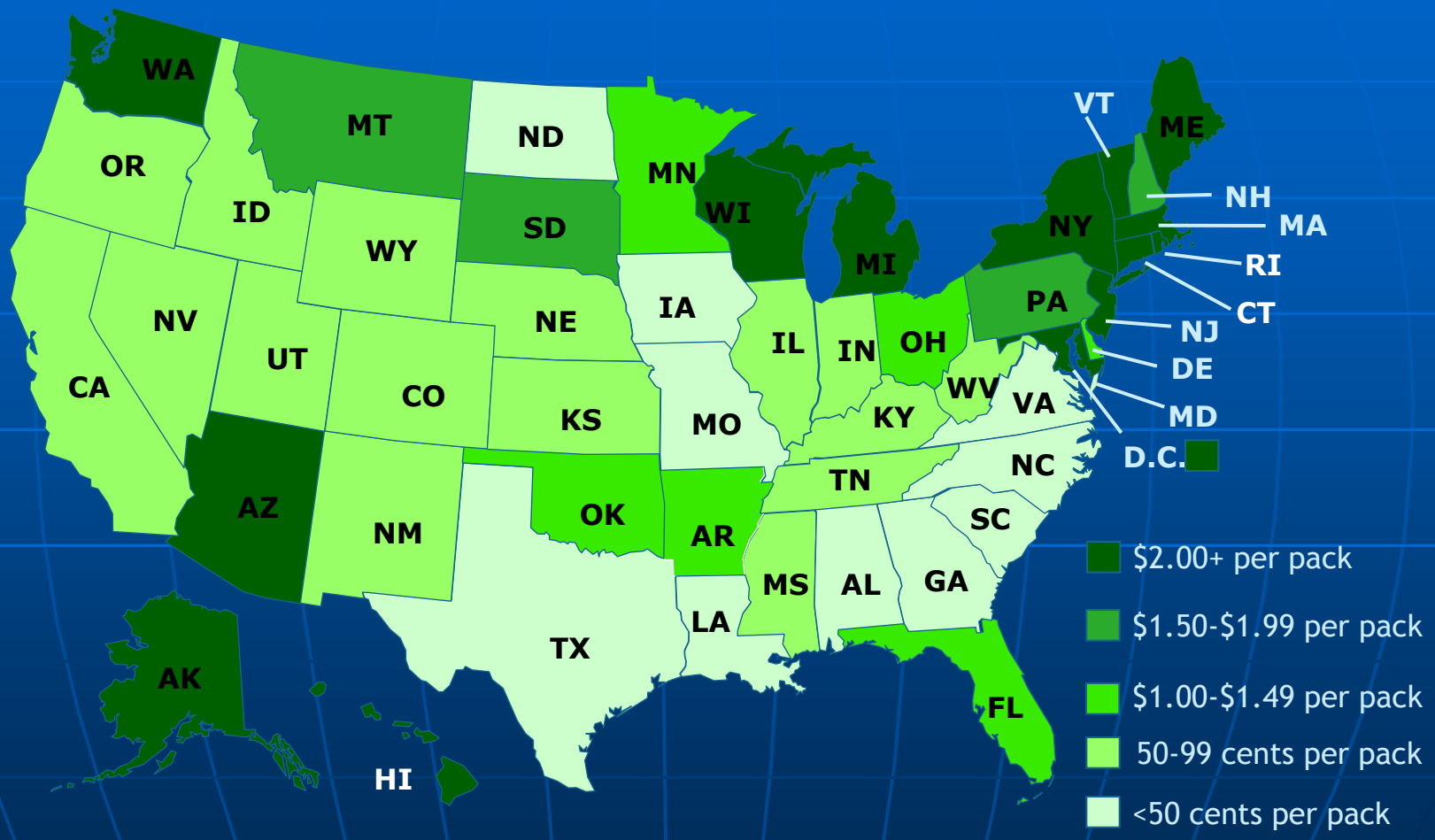
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

State Cigarette Excise Tax Rates – 2008



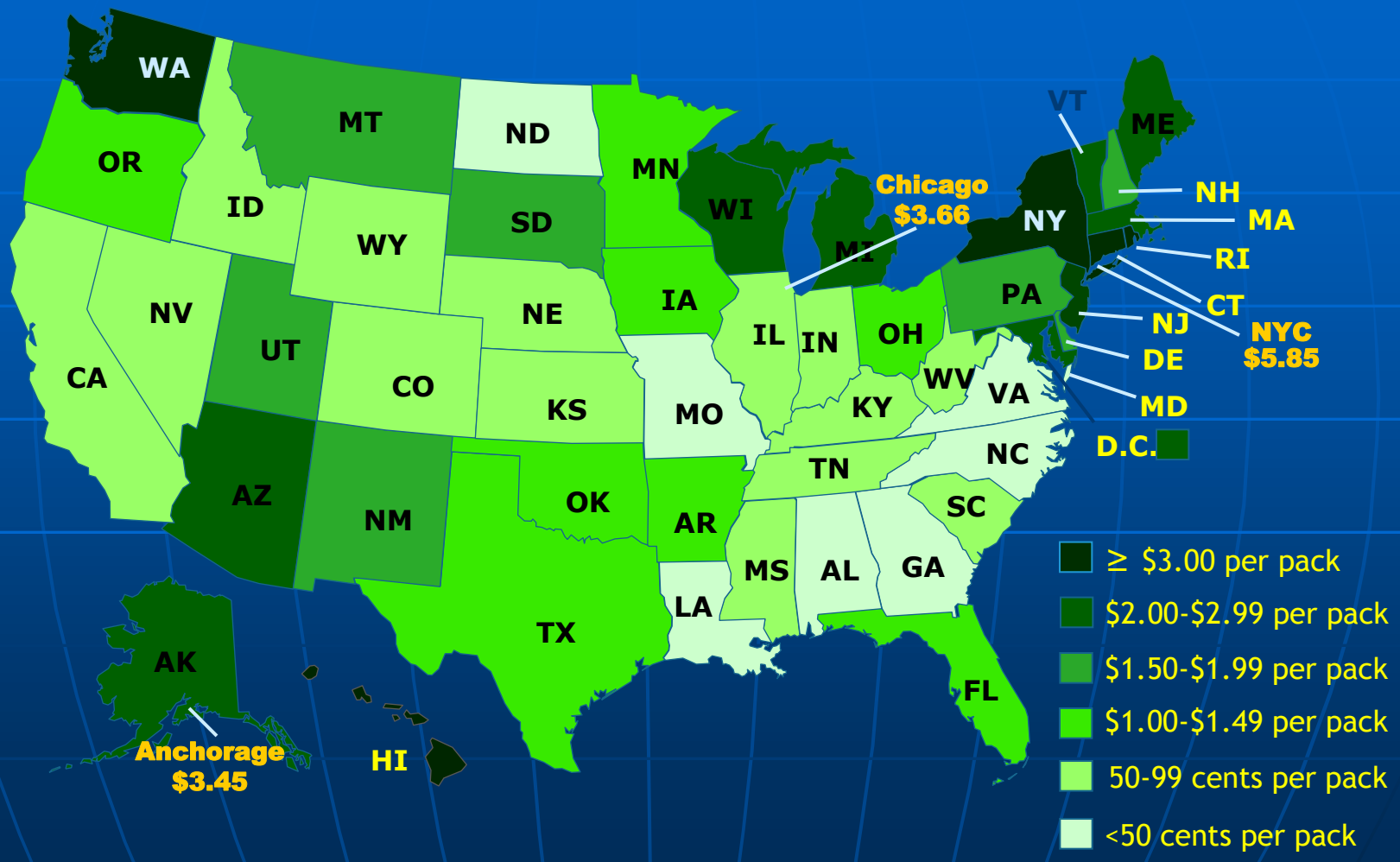
CDC, Office on Smoking and Health. State Tobacco Activities Tracking and Evaluation (STATE) System.

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 – 2010



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

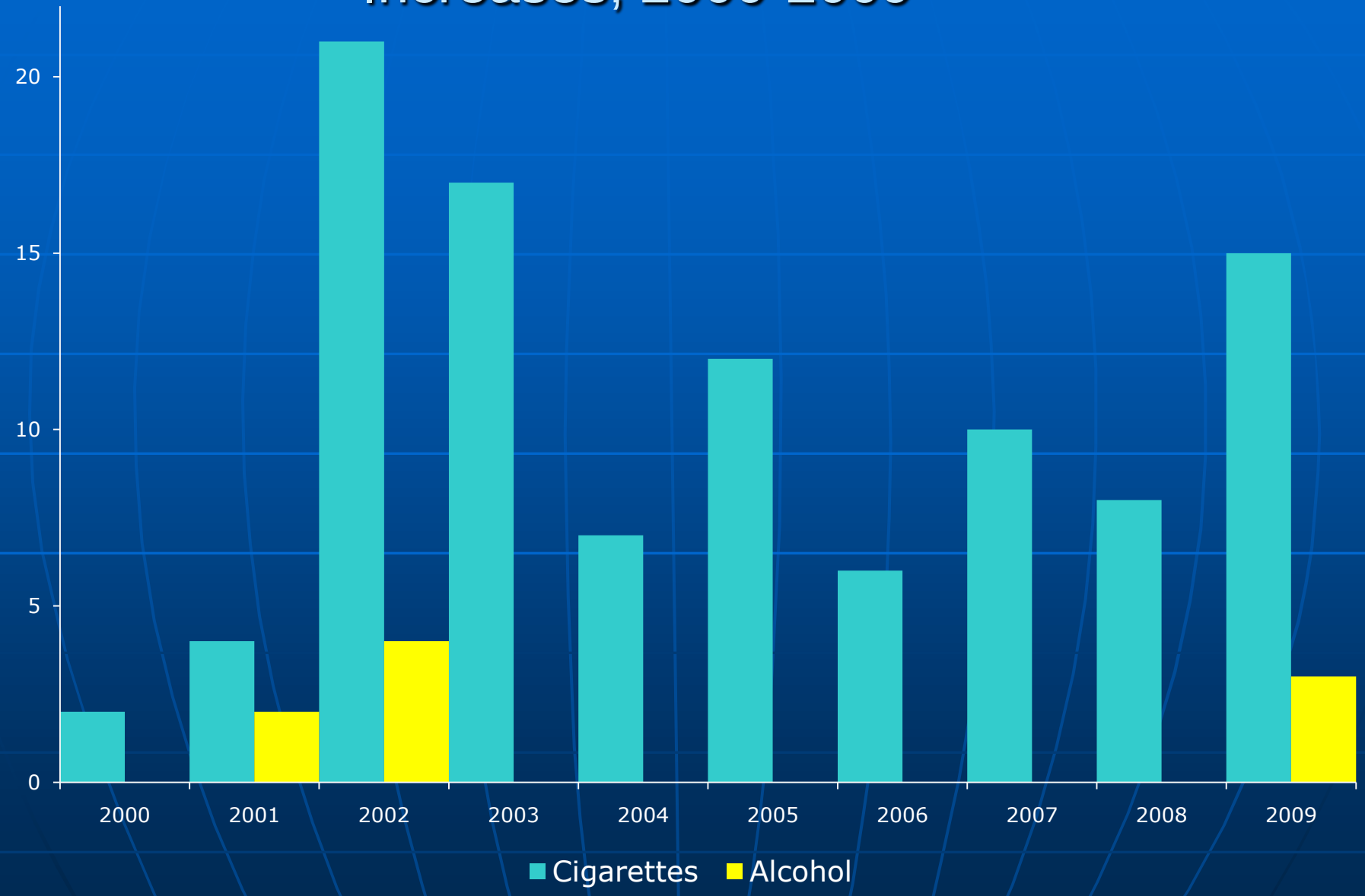
State Tobacco Taxation

- State taxes on other tobacco products
  - All but PA tax other tobacco products
  - Mostly *ad valorem* taxes, but increasing movement towards specific taxes
    - Typically applied to wholesaler/distributor price
    - Highest taxes include:
      - Wisconsin – 100%; Washington - 95%
    - Lowest taxes include:
      - South Carolina – 5%; Tennessee 6.6%
    - Average about 35%
    - Generally below equivalent rate on cigarettes

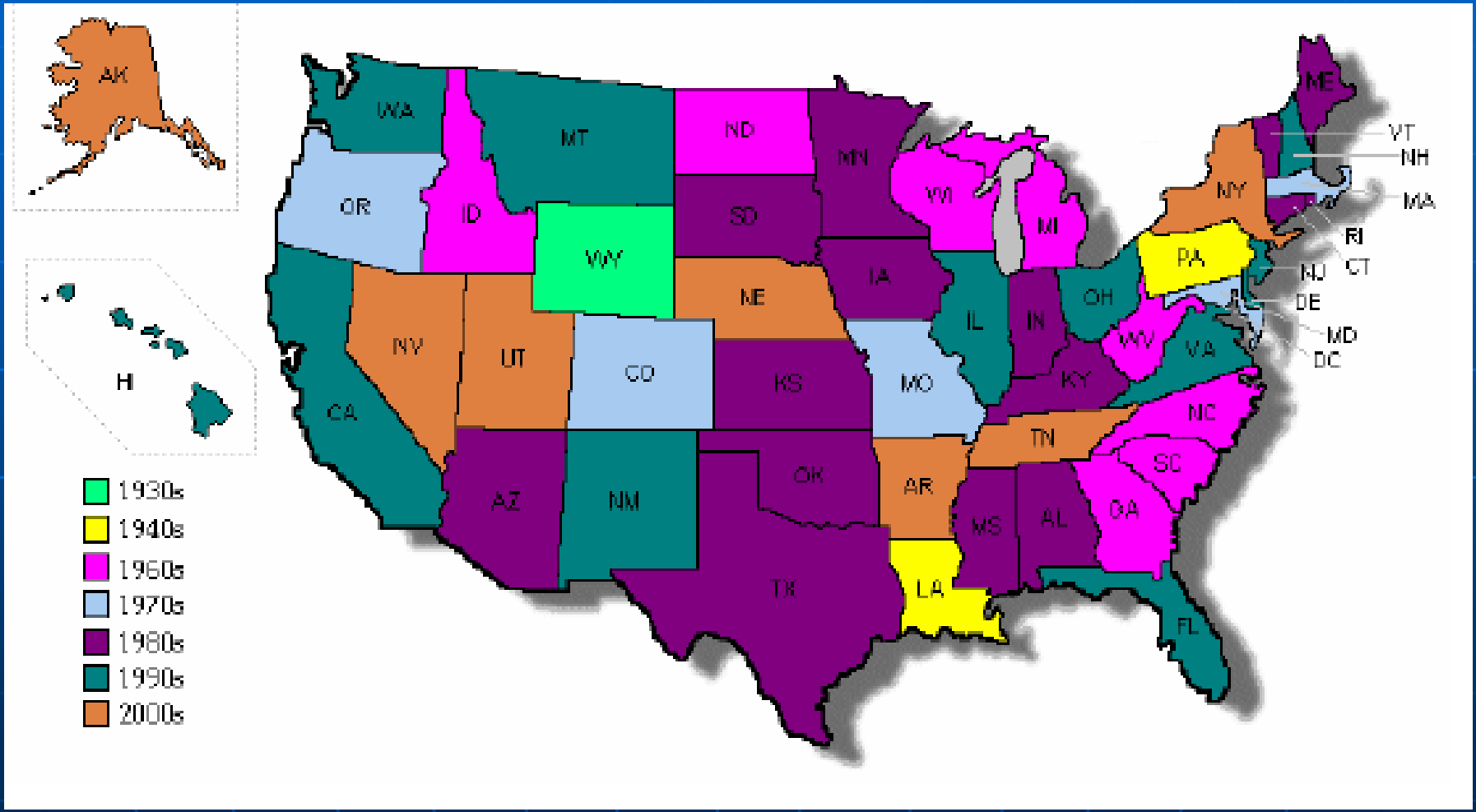
State Alcohol Taxation

- Generally adopted following repeal of Prohibition
  - Follow 3-tier system with excises on licensed products
  - Some excises in control states; mark-ups as/more important
- Mostly specific taxes, but many states include *ad valorem component*
  - Different taxes for on- and off-premise sales
- Tend to tax beer lowest, spirits highest
- Considerable variation across states
  - Beer: $0.02 (WY) - $1.07 (AK); $0.19/gallon median
  - Wine: $0.20 (CA, TX) - $2.50 (AK); $0.67/gallon median
  - Spirits: $1.50 (DC, MD) - $12.80 (AK); $3.75/gallon median

Number of State Cigarette and Beer Excise Tax Increases, 2000-2009



Decade of Last Change in Beer Excise Tax



Source: CSPI *Factbook on State Beer Taxes*

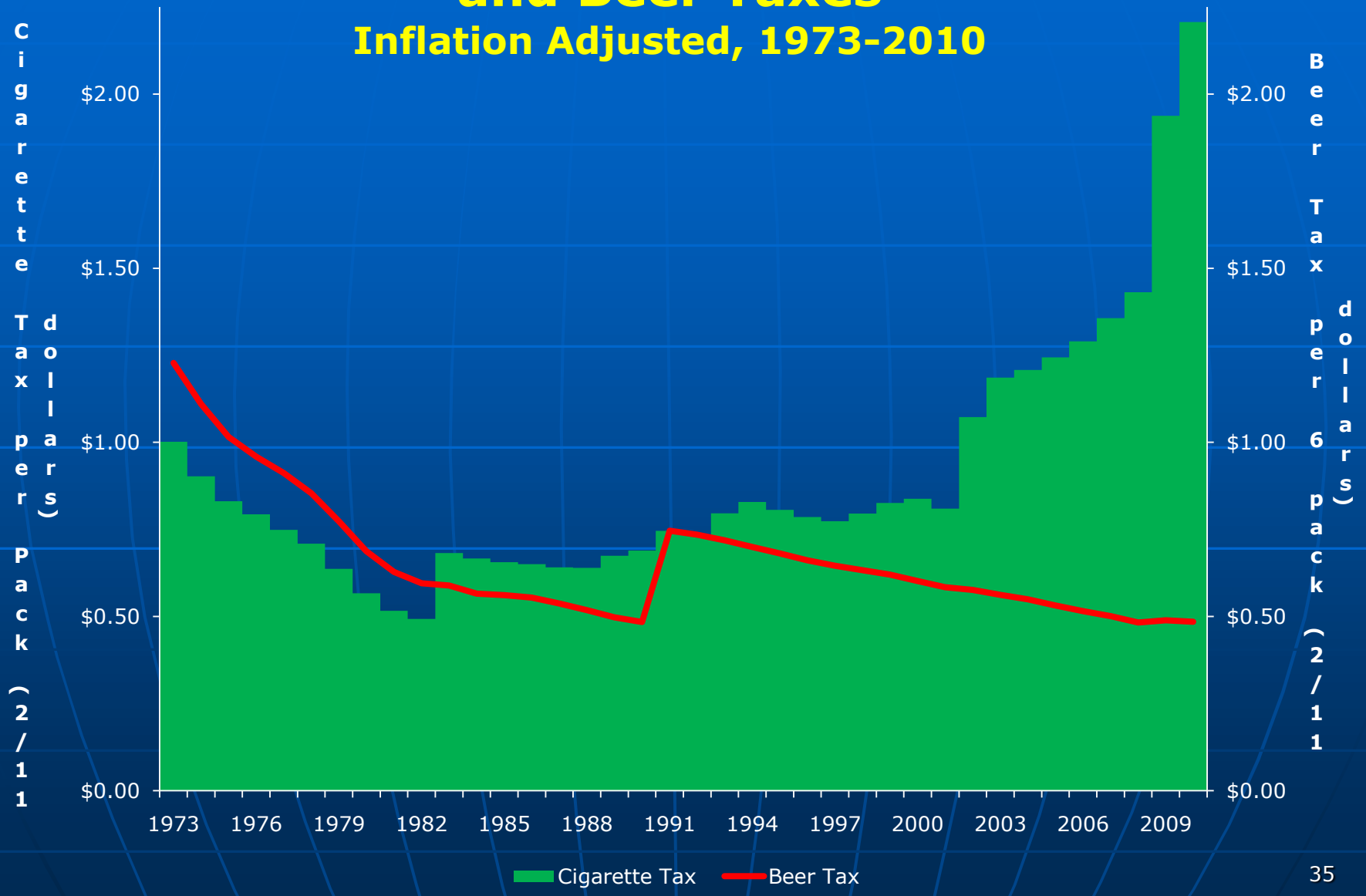
Local Taxation in the U.S.

- Many localities add additional cigarette tax
  - Typically a few cents/pack; some exceptions:
    - » $1.50 in New York City
    - » $2.68 in Chicago/Cook county
- Some local alcoholic beverage taxes
  - Generally modest

- Sales tax applied to tobacco products, alcoholic beverages in most states
  - Usually, but not always, applies to price inclusive of excise taxes

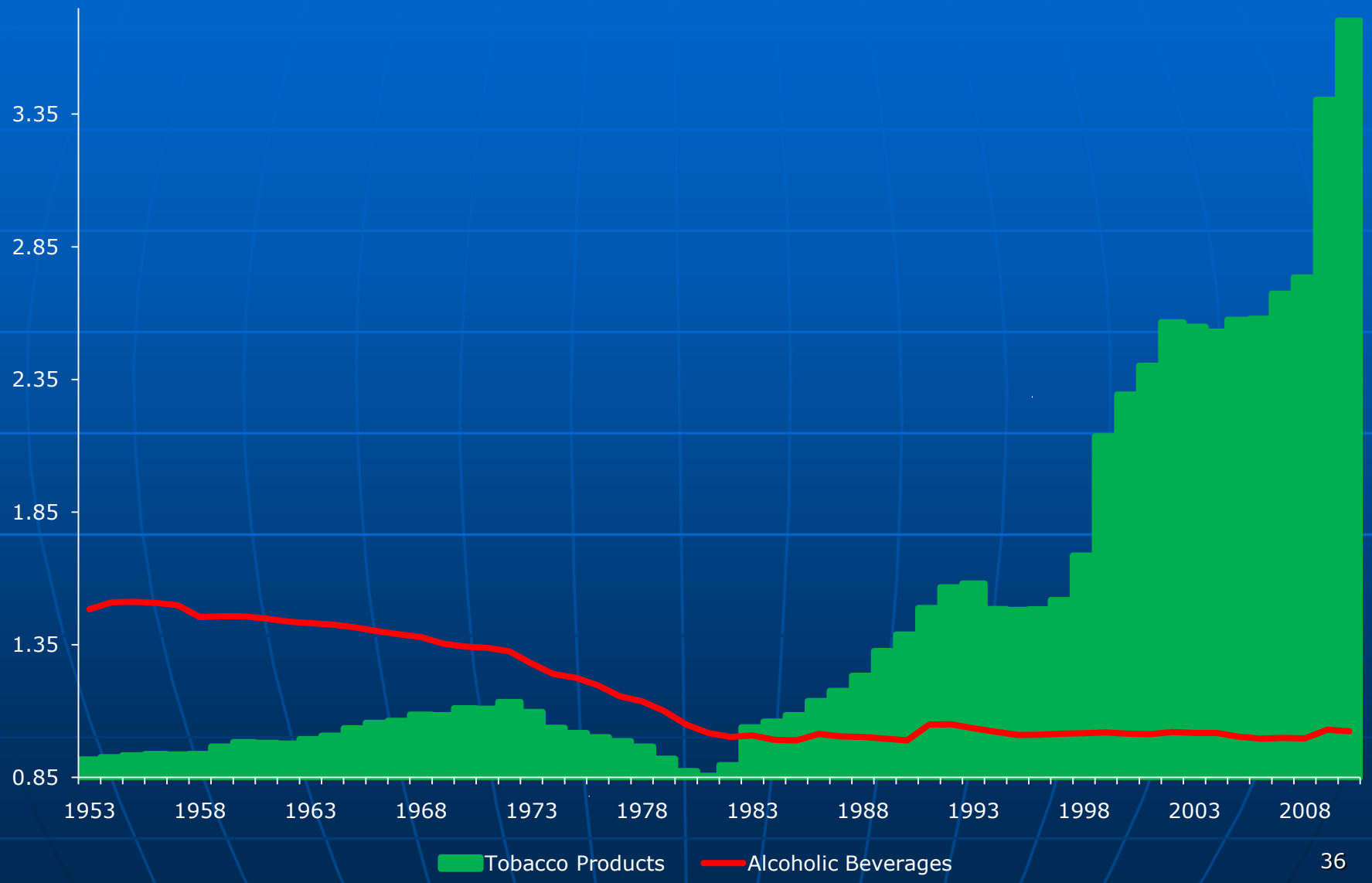
Average State and Federal Cigarette and Beer Taxes

Inflation Adjusted, 1973-2010



Source: *Tax Burden on Tobacco* (2010), *Brewers Almanac* (2010) and author's calculations

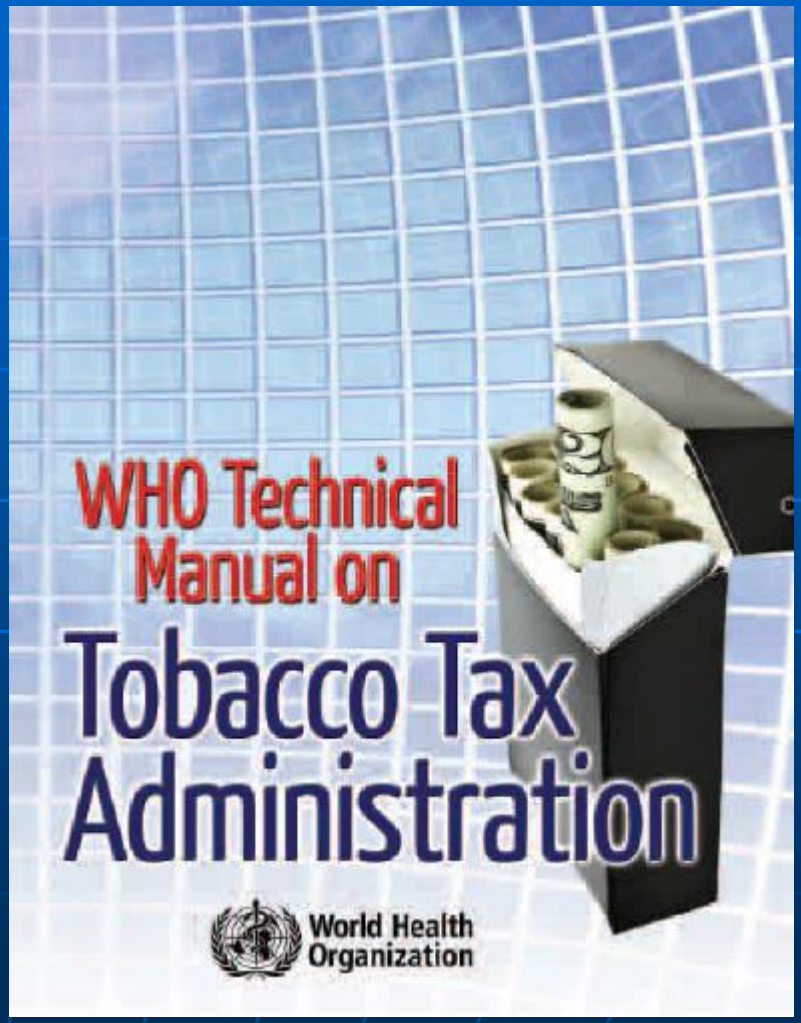
Alcoholic Beverage & Tobacco Product Prices
Relative to CPI, 1953-2010



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

Best Practices in Tobacco Taxation

- Simpler is better
- Favor specific taxes over *ad valorem* taxes
- Adjust specific taxes to outpace inflation, income growth
- Excise taxes account for ≥ 70% of retail prices
- Much more……
- Same applies to alcohol



Tobacco Taxes

- Federal excise taxes
  - *Specific excise taxes on nearly all tobacco products*
    - Cigarettes: $1.0066 per pack of 20 cigarettes
  - *Roughly equivalent across products*
- State excise taxes
  - *Specific excise taxes on cigarettes in all states*
  - *All but PA tax other tobacco products*
    - *Often lower than cigarette tax rate*
    - Most use *ad valorem* excise tax (based on value)
    - Small but growing number use specific taxes

- *Increased frequently and by enough in most states to outpace inflation and income growth in recent years*

Alcohol Taxes

- Federal excise taxes
  - *Specific excise taxes on all beverages*
  - *Different taxes on ethanol and by alcohol content*
- State excise taxes
  - *Mix of specific and ad valorem excise taxes*
  - *Different taxes on ethanol content*
    - Generally highest for spirits, lowest for beer
    - Differ within beverage type as well, based on alcohol content
  - *Different taxes based on where purchased*
    - Higher for on-premise vs. consumption than for off-premise
  - *Exceptions galore*
    - e.g. based on volume produced
  - *Implicit taxation through state monopoly control & price setting*
- *Stagnant over time; significantly eroded by inflation*

Impact of Tax and Price on Tobacco Use

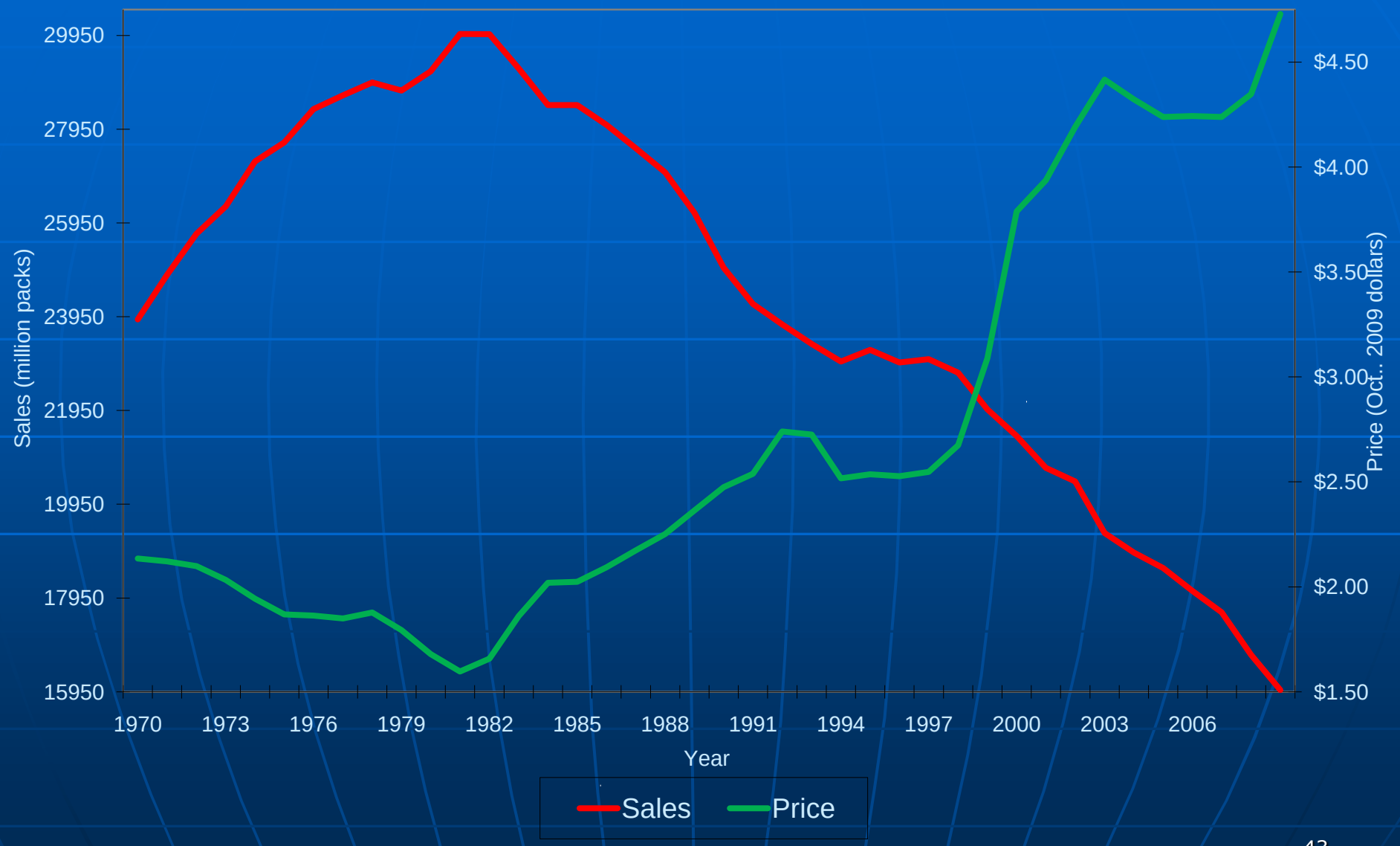
Prices and Tobacco Use

- **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

Prices and Tobacco Use

- **Increases in tobacco product prices**:
  - 10% price increase reduces consumption by 4%

Cigarette Prices and Cigarette Sales, United States, 1970-2009

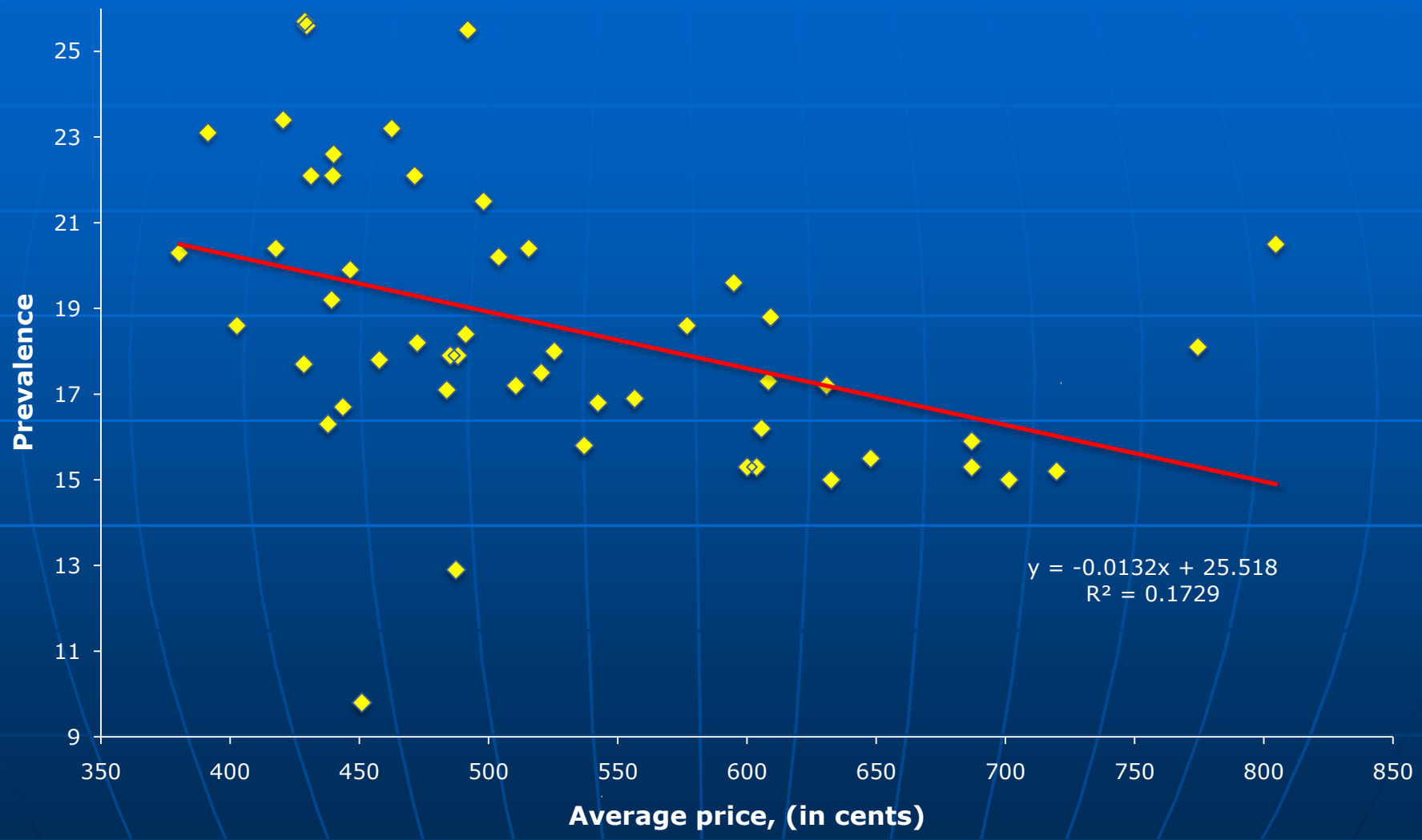


Source: *Tax Burden on Tobacco,* 2009, and author's calculations

Prices and Tobacco Use

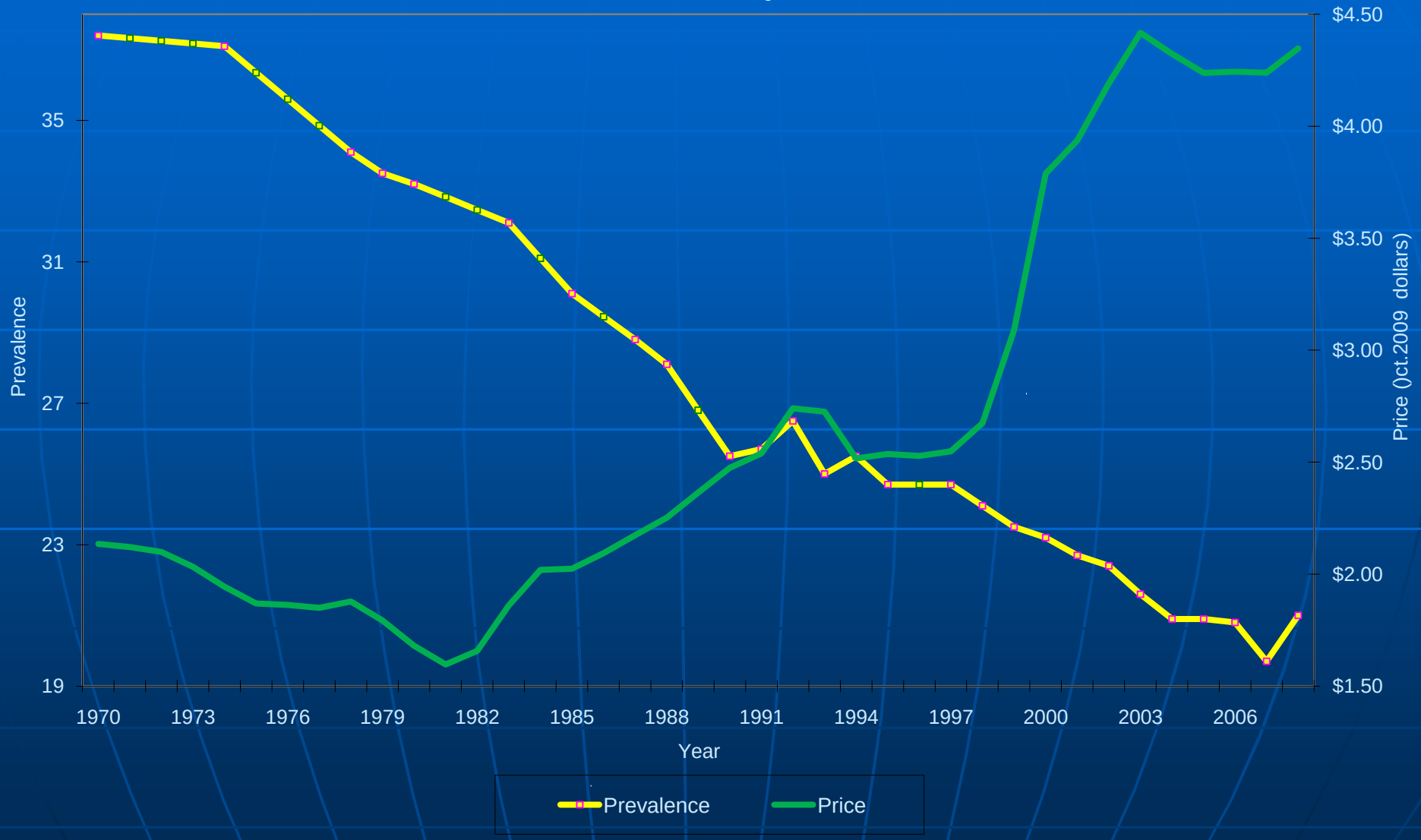
- **Increases in tobacco product prices**:
  - About half of impact on smoking prevalence
    - 10% price increase reduces prevalence by 2%

Cigarette and Adult Smoking Prevalence
US States & DC, 2009



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

Cigarette Prices and Adult Smoking Prevalence, United States, 1970-2008



Source: NHIS, *Tax Burden on Tobacco,* 2009, and author's calculations
Note: green data points for prevalence are interpolated assuming linear trend

Prices and Tobacco Use

- **Increases in tobacco product prices**:
  - Prevalence reductions result of adult users quitting
    - 10% price increase leads about 10% of smokers to try to quit
    - About 1 in 5 successfully quit

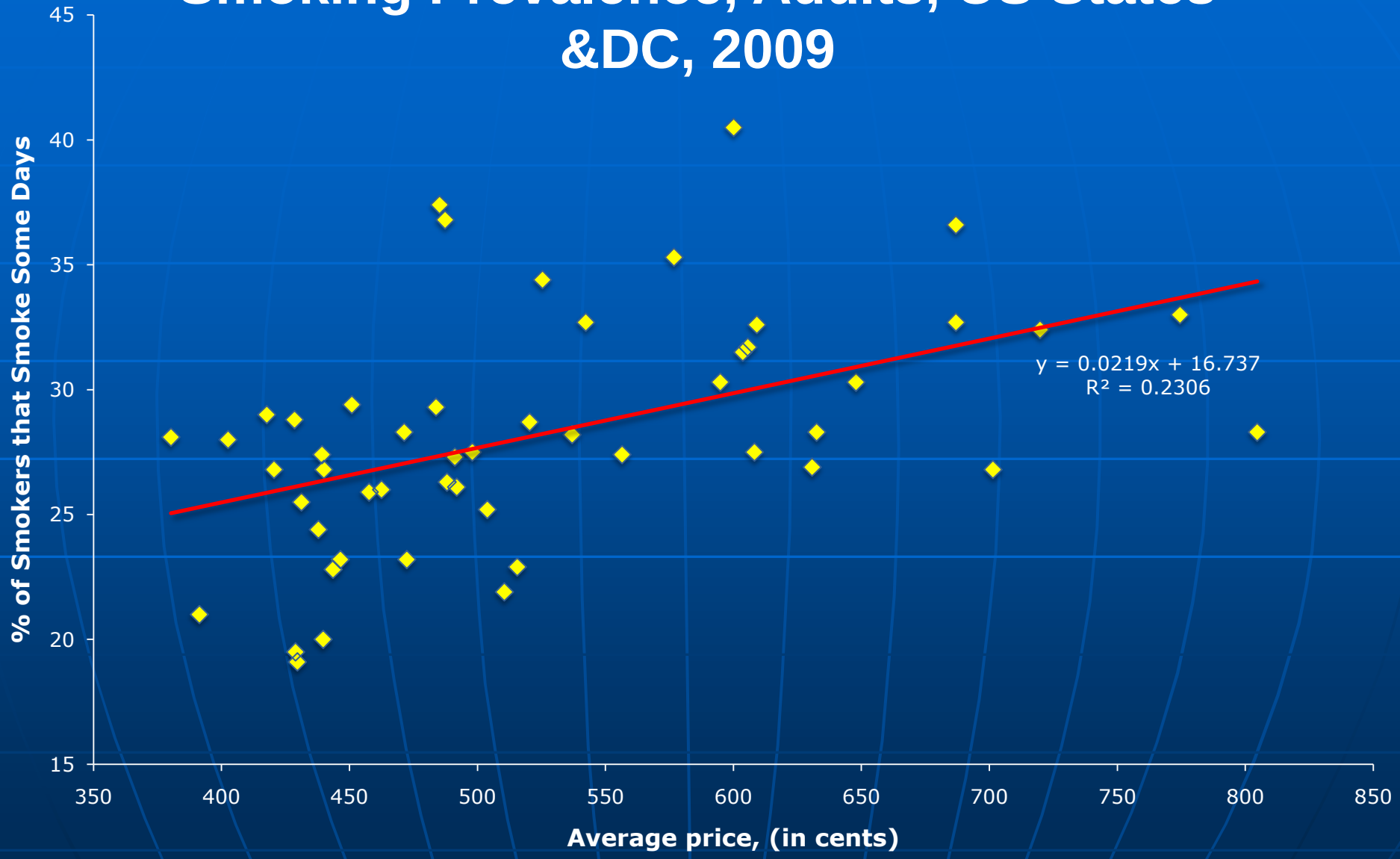
Cigarette Prices and Cessation
US States & DC, 2009

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

Prices and Tobacco Use

- **Increases in tobacco product prices**:
  - Reductions in smoking intensity among those who continue to smoke
    - Smoke fewer days
    - Smoke fewer cigarettes on smoking days

Cigarette Price and Less than Daily Smoking Prevalence, Adults, US States &DC, 2009

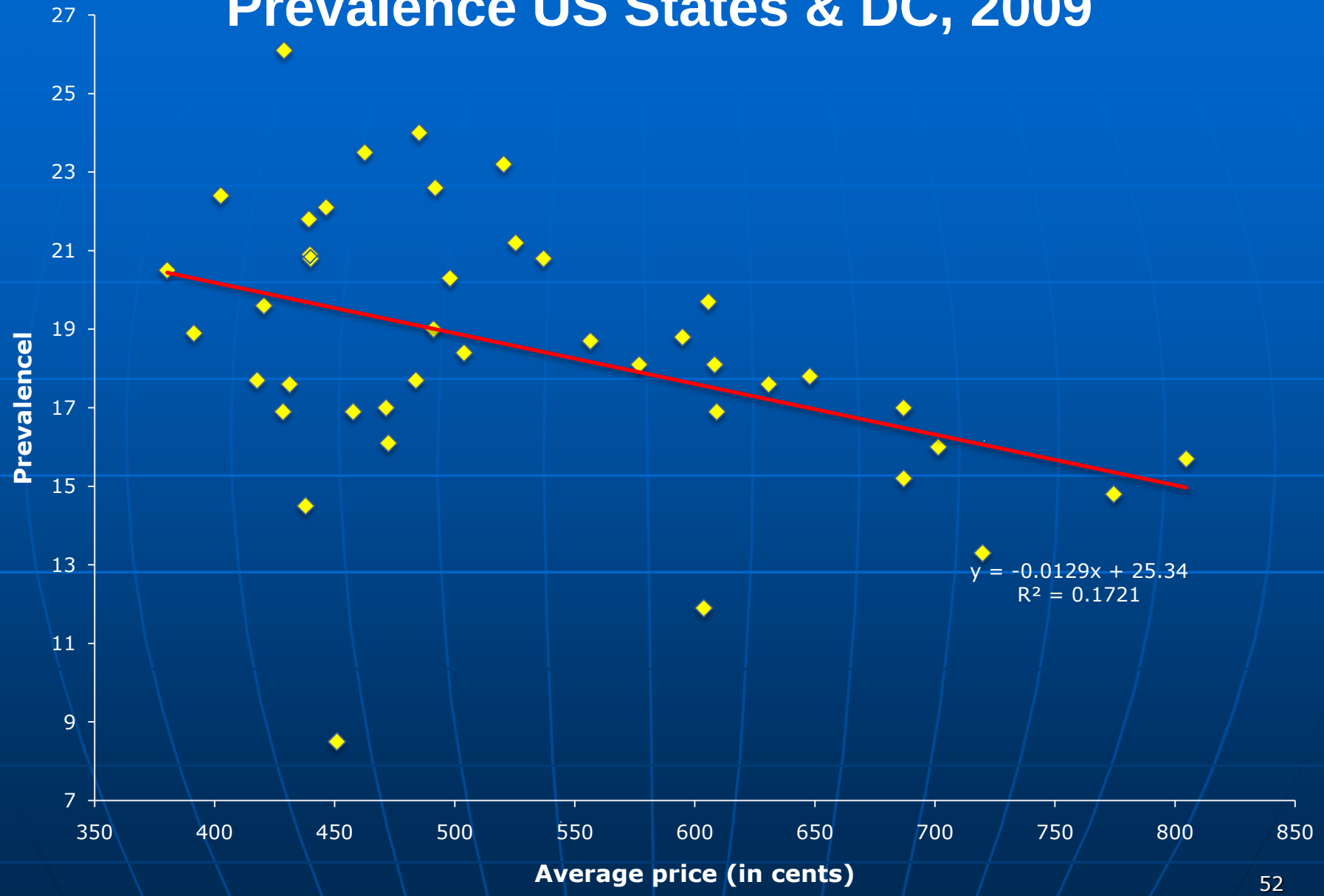


Source: BRFSS, *Tax Burden on Tobacco,* 2010, and author's calculations

Prices and Tobacco Use

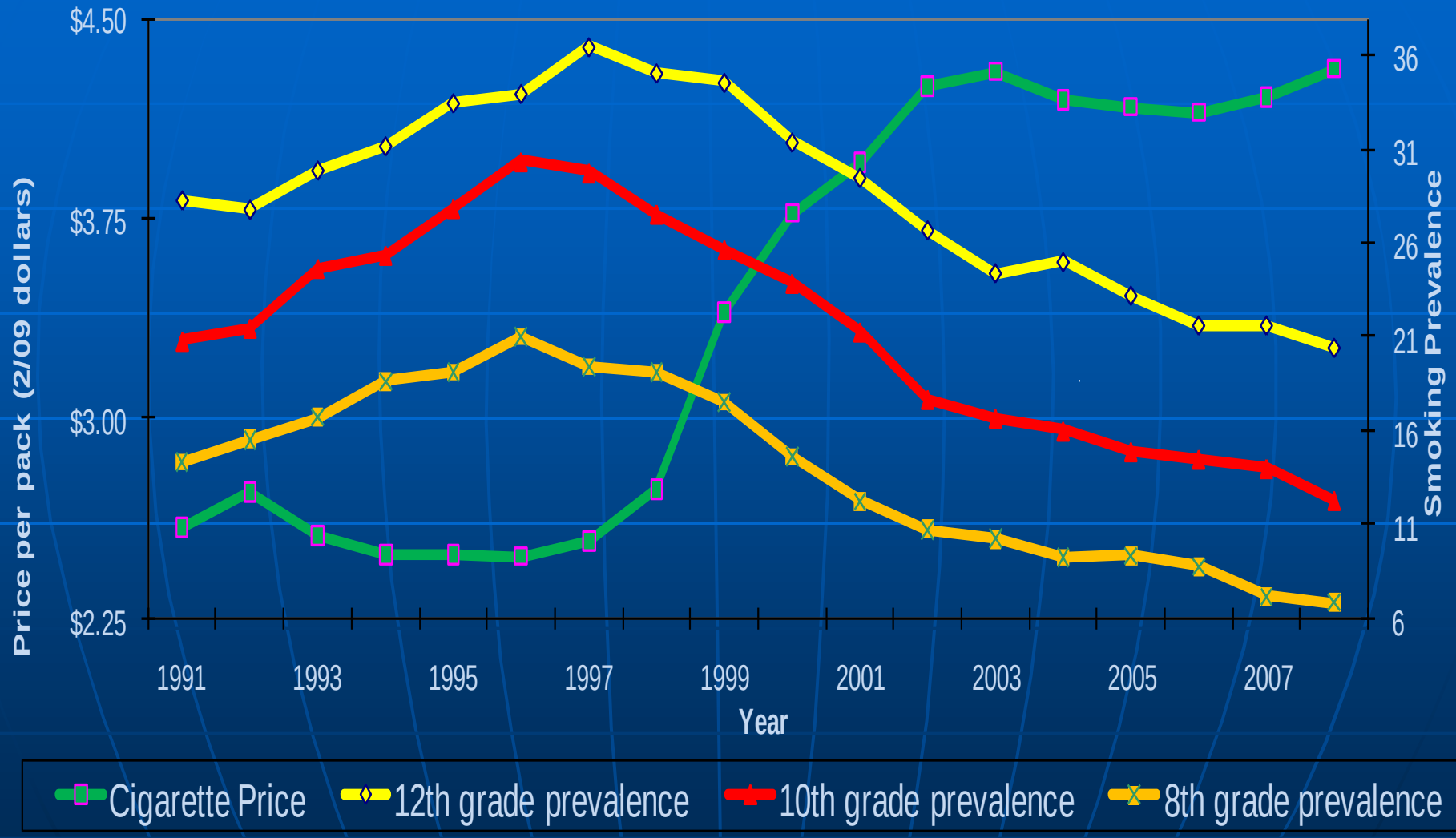
- **Increases in tobacco product prices**:
  - Prevent youth from taking up tobacco use
    - Youth 2-3 times more responsive to price than adults
      - Lower incomes, peer influences, shorter smoking histories, greater emphasis on present costs
    - Greatest impact in preventing youth from moving beyond experimentation into more regular smoking

Cigarette Prices and Youth Smoking Prevalence US States & DC, 2009



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

Cigarette Price and Youth Smoking Prevalence, United States, 1991-2008

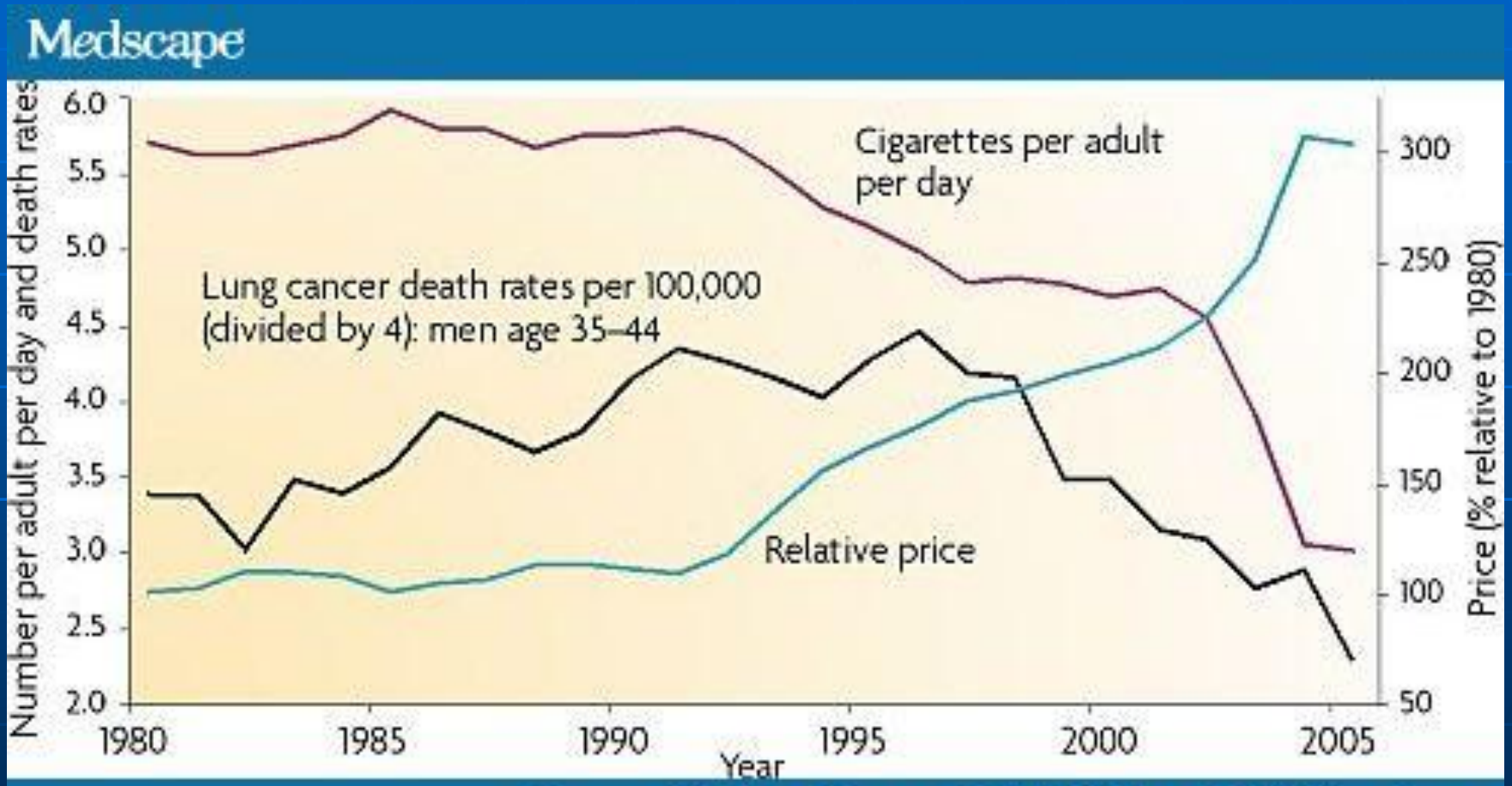


Source: MTF, *Tax Burden on Tobacco,* 2009, and author's calculations

Prices and Tobacco Use

- **Increases in tobacco product prices:**
  - Reduce death and disease caused by tobacco use

Taxes, Prices and Health: US, 1980-2005



Source: Nat Rev Cancer © 2009 Nature Publishing Group

Impact of Tax and Price on Alcohol Use

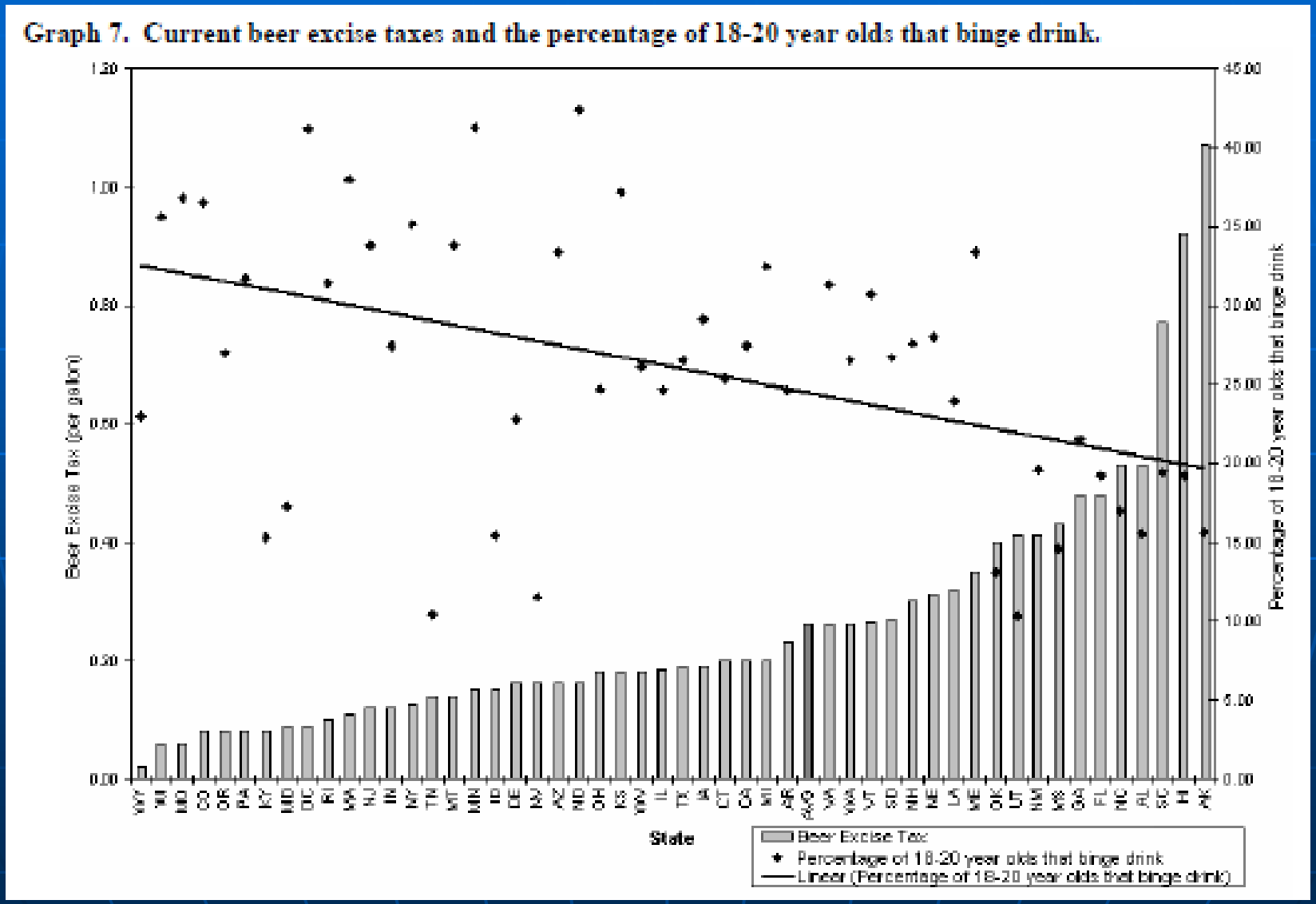
Alcohol Prices and Drinking

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

Source: Wagenaar et al., 2009; Xu & Chaloupka, in press

Beer Taxes and Binge Drinking



Source: CSPI *Factbook on State Beer Taxes*

Alcohol Prices and 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
- 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 suicides
- Other consequences of drinking, including work-place accidents, teenage pregnancy, and incidence of sexually transmitted diseases

Earmarking Tobacco Tax Revenues for Tobacco Control

Comprehensive Programs

- General aims:
  - Prevent initiation of tobacco use among young
    - Increased prices, reduced access
    - Increased antitobacco messages, reduced protobacco
  - Promote cessation among young adults, adults
    - Better access to cessation services
    - Increased prices and strong smoke-free policies
    - Increased antitobacco messages, reduced protobacco
  - Eliminate exposure to secondhand smoke
    - Strong smoke-free policies
    - Strengthened anti-smoking norms
  - Identify and eliminate disparities
    - Intertwined with others; need for targeted approaches

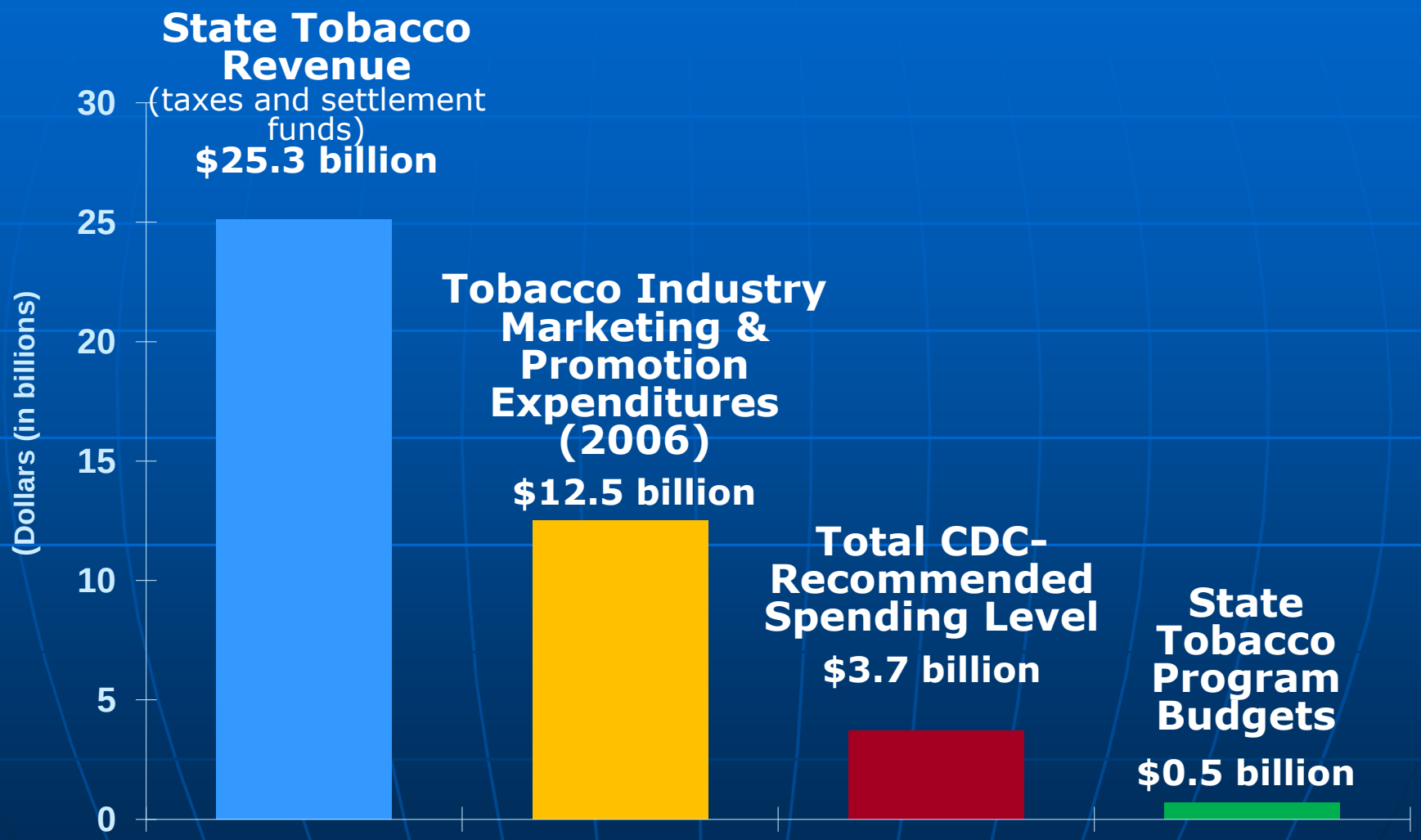
Source: USDHHS, 2000; CDC 2007

Comprehensive Programs

- Components of a comprehensive program:
  - State and community interventions
    - Support for policy development and implementation
    - Efforts to strengthen norms against tobacco
    - Targeted efforts to reduce youth tobacco use, disparities
  - Health communication interventions
    - Mass-media countermarketing campaigns
    - Efforts to replace tobacco industry sponsorship/promotion
    - Targeted messaging/delivery
  - Cessation interventions
    - Array of policy, health system, and population-based measures
  - Surveillance and Evaluation
  - Administration and Management

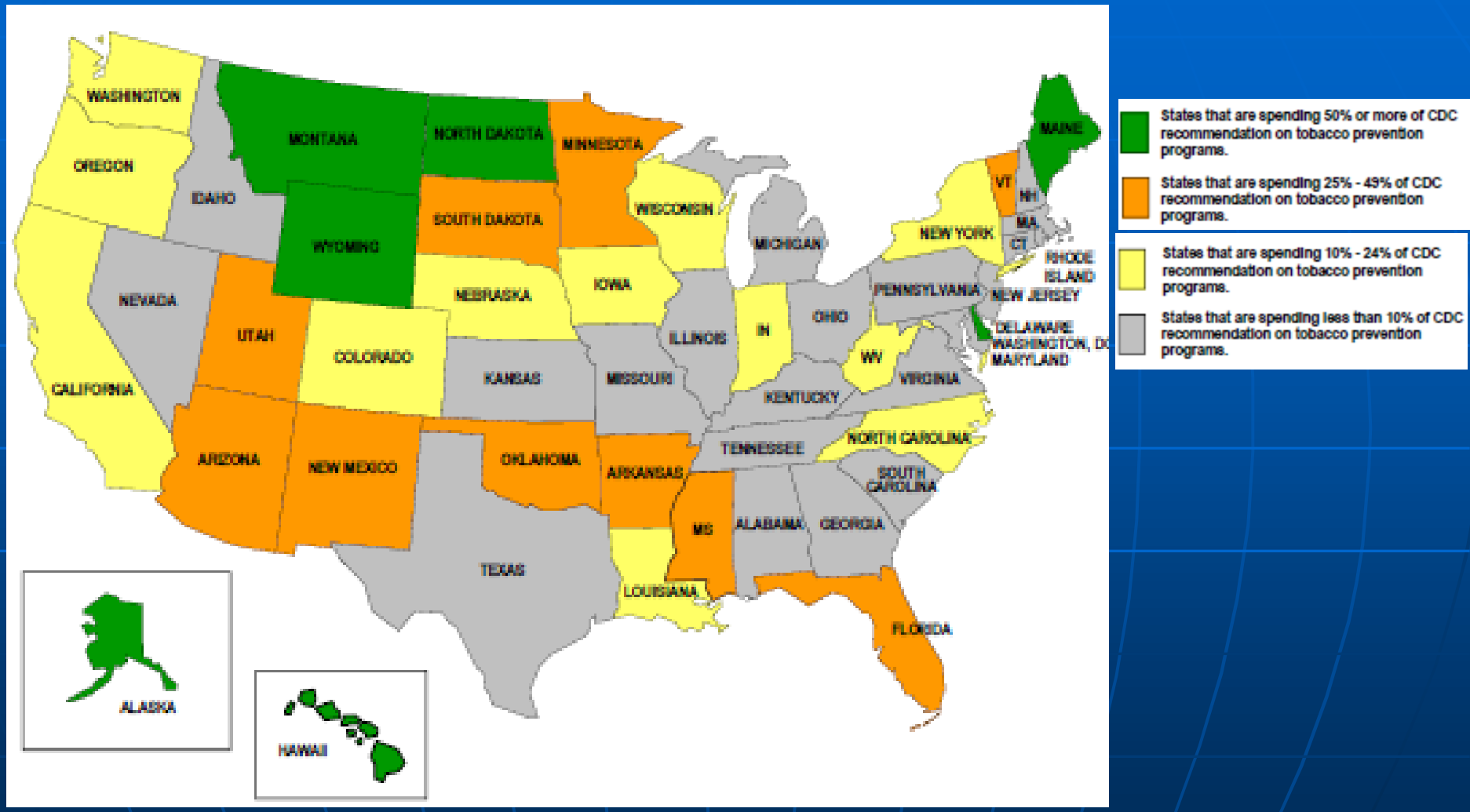
Source: USDHHS, 2000; CDC 2007

Tobacco Industry is Outspending Prevention Efforts 24:1 —FY2011



Campaign for Tobacco Free Kids, Federal Trade Commission, American Heart Association, American Cancer Society, American Lung Association, SmokeLess States National Tobacco Policy Initiative

Program Funding

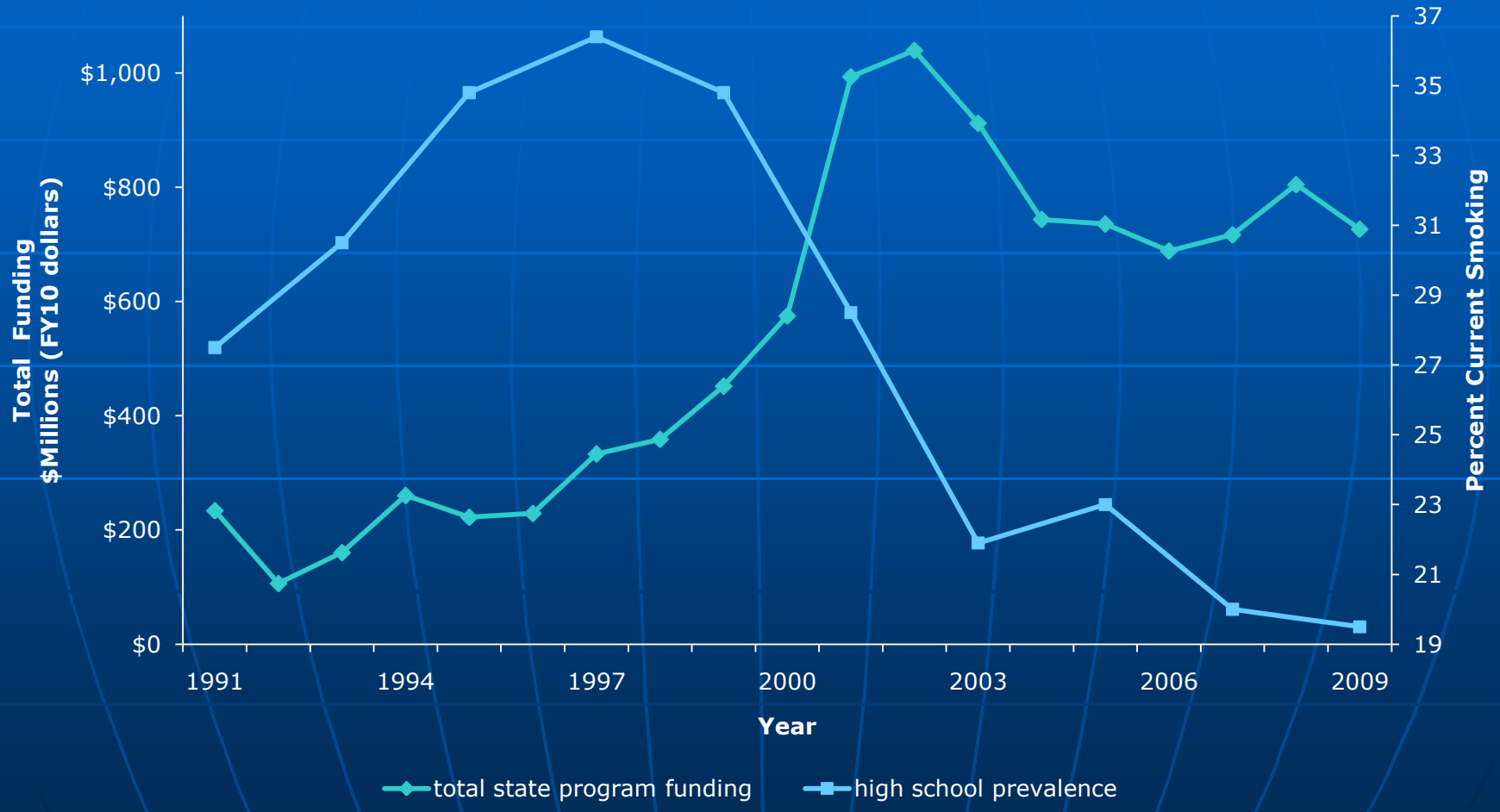


Source: Tobacco Free Kids, 2010

Comprehensive Programs

- Impact of state program funding
  - Increased funding associated with:
    - Reductions in overall cigarette sales
    - Lower youth smoking prevalence
    - Lower adult smoking prevalence
    - Increased interest in quitting, successful quitting
  - Much of impact results from large scale mass-media anti-smoking campaigns

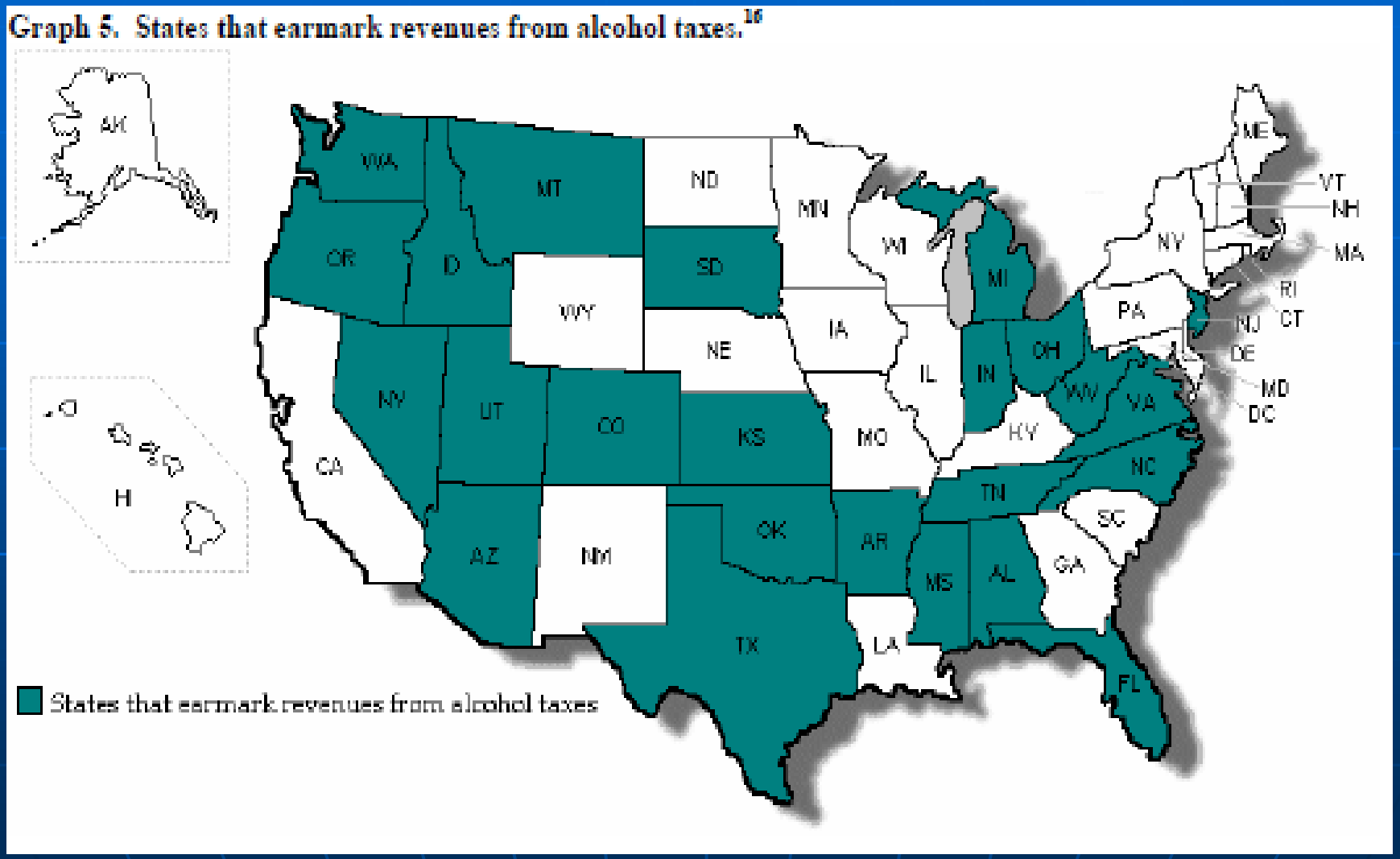
State Tobacco Control Program Funding and Youth Smoking Prevalence



Source: ImpacTeen Project, UIC; YRBS

Earmarking Alcohol Tax Revenues for Alcohol Control

Earmarked Alcohol Taxes



Source: CSPI *Factbook on State Beer Taxes*

Earmarked Alcohol Taxes

- Small share of tax revenues earmarked
- Fund variety of alcohol prevention, treatment and enforcement efforts

State	Program
Arizona	Drug and Alcohol Treatment Fund
Idaho	Alcoholism Treatment Account
Kansas	Community Alcoholism and Intoxication Programs Fund
Mississippi	Alcoholism Treatment and Rehabilitation Fund
Montana	Treatment, rehabilitation, and prevention of alcoholism and chemical dependency
New Jersey	Alcohol Education, Rehabilitation and Enforcement Fund
Nevada	Increase services for prevention and treatment of alcoholism and alcohol abuse.
Oregon	Mental Health Alcoholism and Drug Services Account
Tennessee	To assist municipalities and counties in carrying out the provisions of the state's 1973 Comprehensive Alcohol and Drug Treatment Act
Utah	Programs or projects related to prevention, treatment, detection, and prosecution

- No research linking funding to reduced alcohol use, problems
  - research demonstrates cost-effectiveness of interventions that could be funded by earmarked taxes

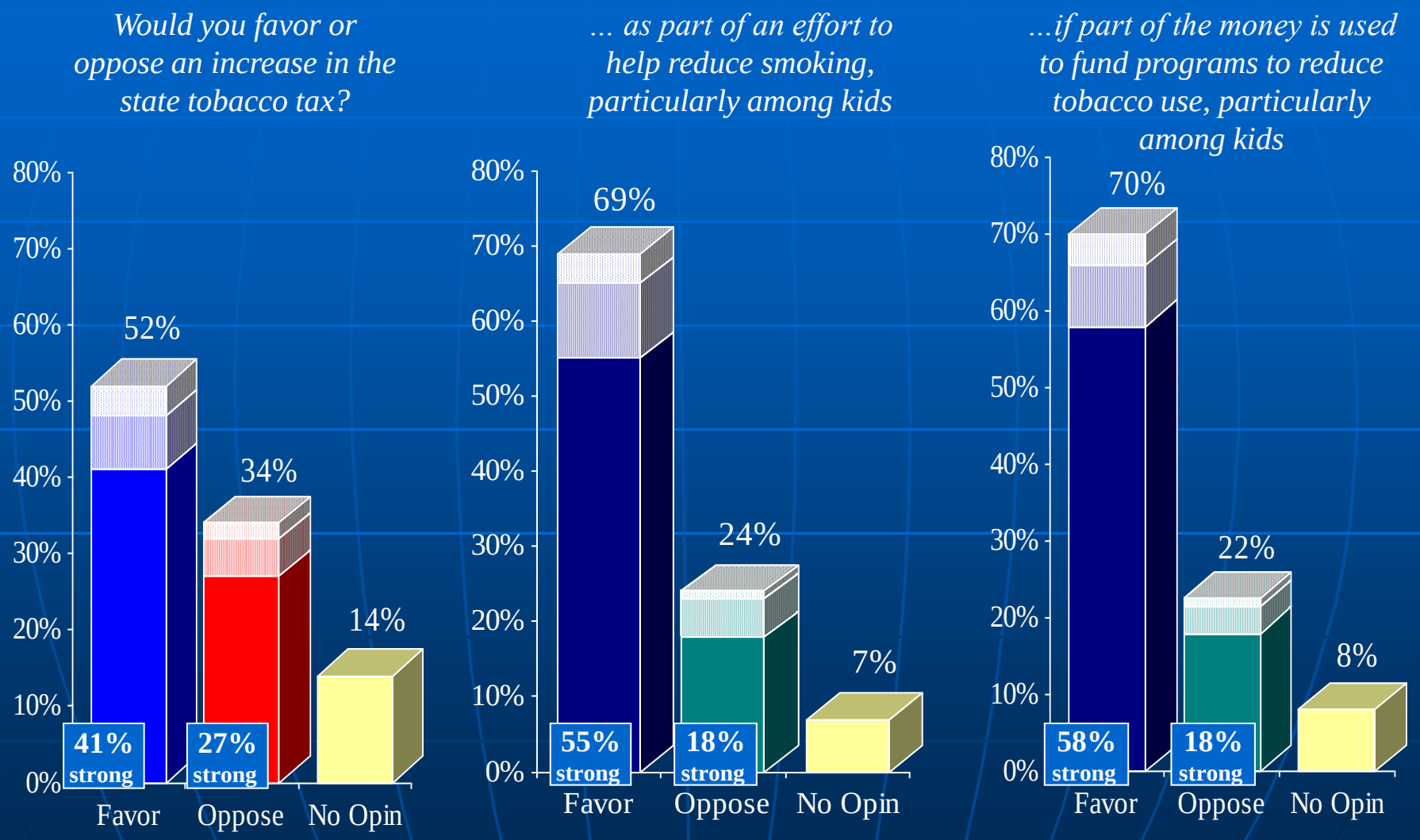
Source: CSPI *Factbook on State Beer Taxes*

Popular Support for Tobacco & Alcohol 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*

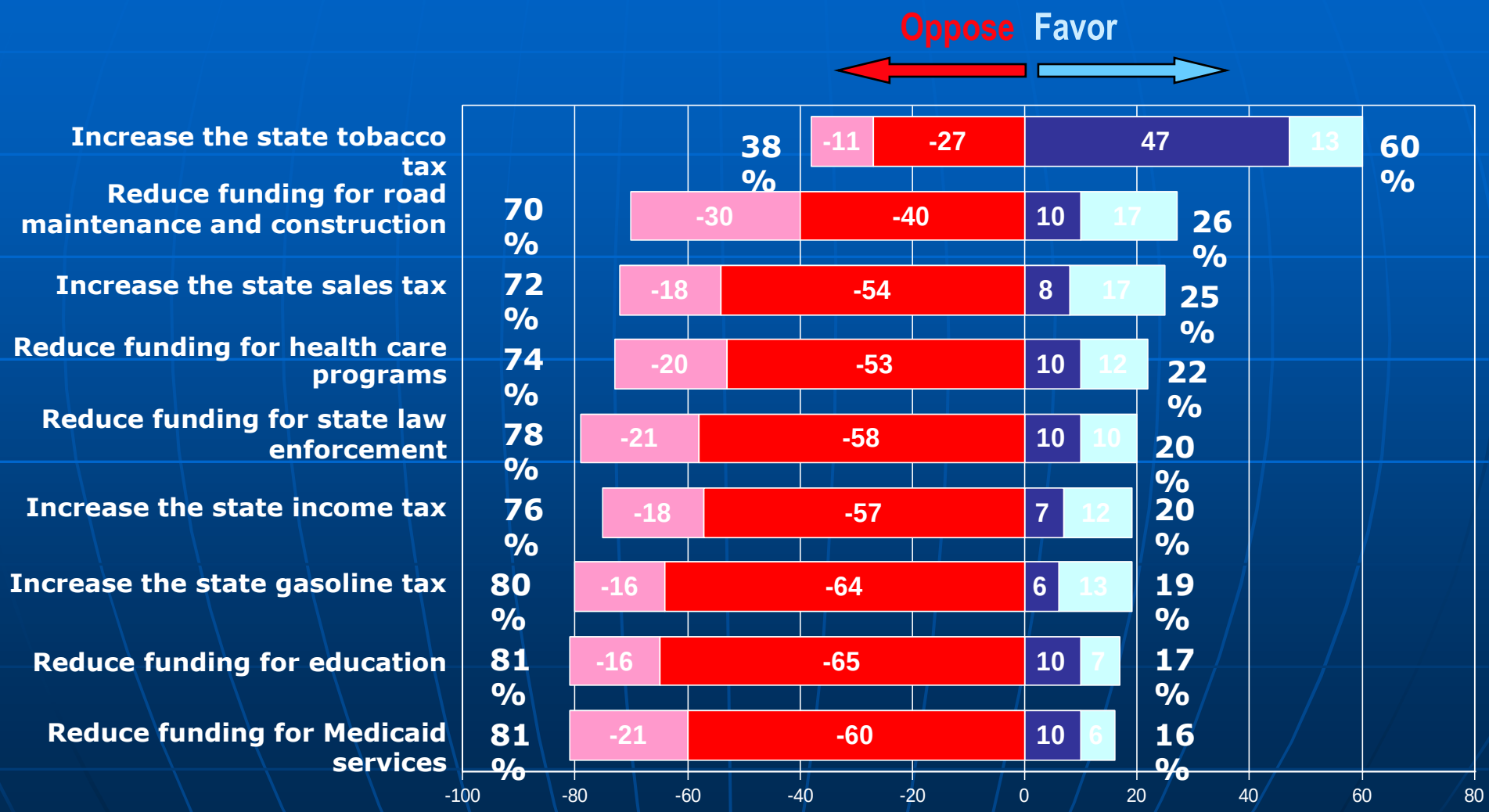
Earmarking for Youth Smoking Prevention Increases Support For Tobacco Tax Hikes



RWJF, National survey of registered Voters - June 2002
The Mellman Group/Market Strategies; from McGoldrick 2010

Increasing The Tobacco Tax Supported as Way To Address State Budget Deficits

As you may have heard, virtually all states are currently facing severe budget deficits. I am going to read you a list of proposals that have been suggested as a way to address the state budget deficit. After I read each one, please tell me if you FAVOR or OPPOSE that proposal.



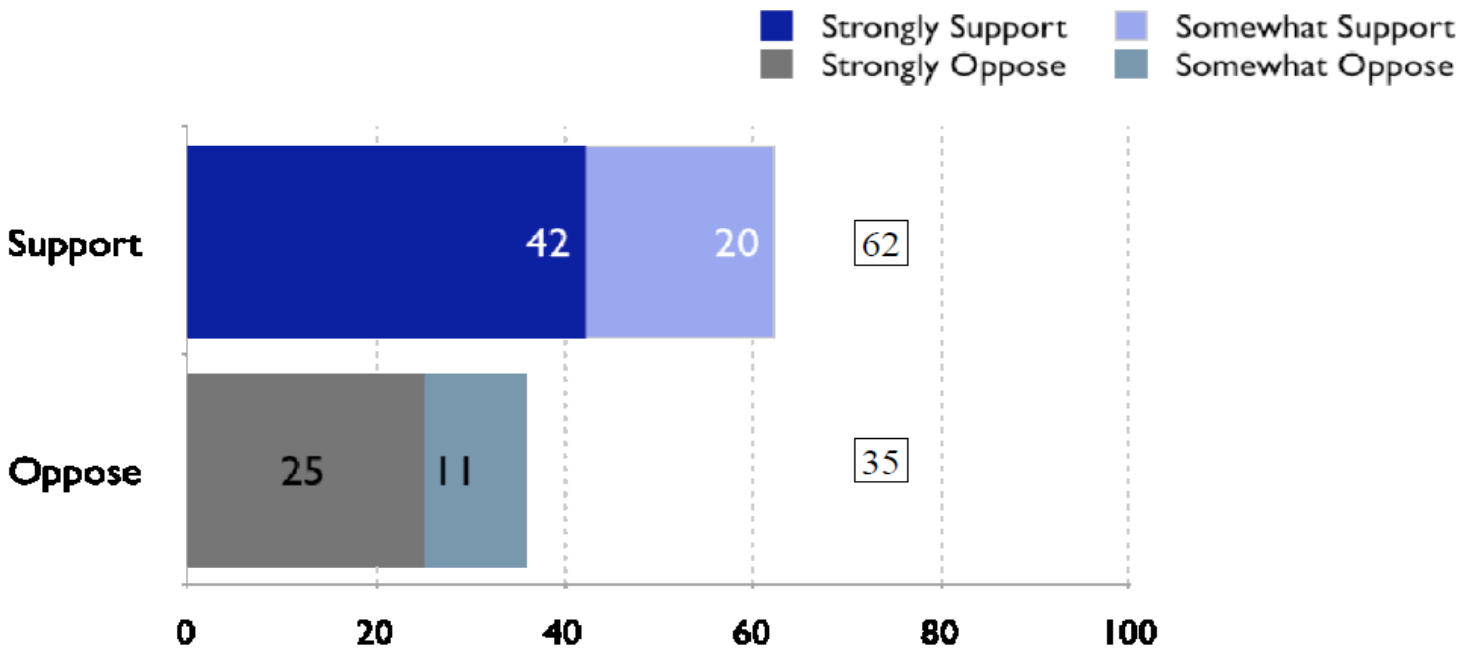
Total numbers are rounded
Darker shading indicates stronger intensity

International Communications Research Survey
January 2010; from McGoldrick 2010

Similar Support for Alcoholic Beverage Taxes

A Majority Also Supports Increasing the Tax on Alcohol, and 4 in 10 Voters Strongly Favor the Increase

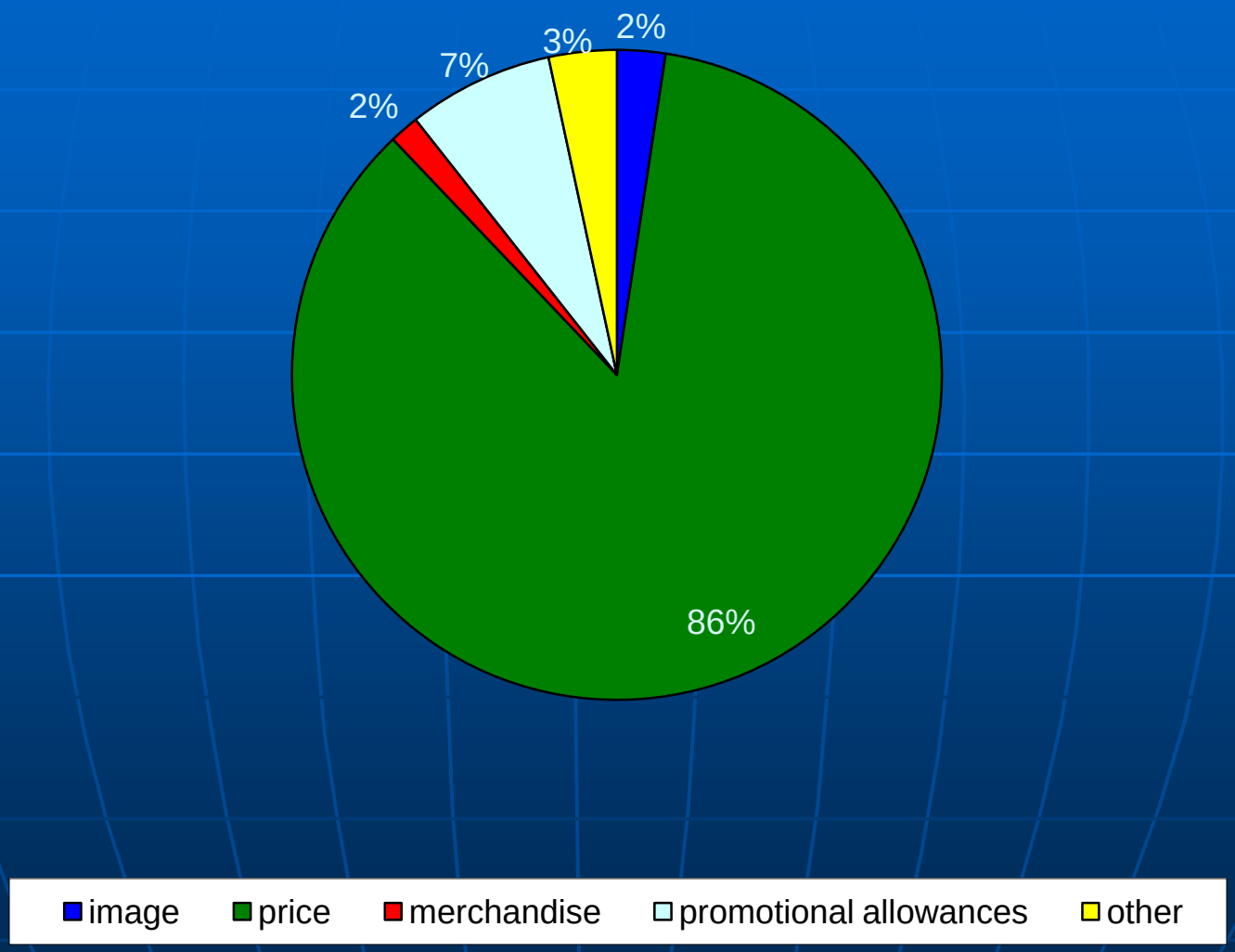
Initial



Some leaders in New York State are considering increasing the tax to 10 cents per drink on ***alcoholic beverages****, including beer, wine and liquor, and using a portion of the money to prevent youth alcohol use and provide for the treatment of alcohol abuse. Based on what you know, would you support or oppose this new tax?*

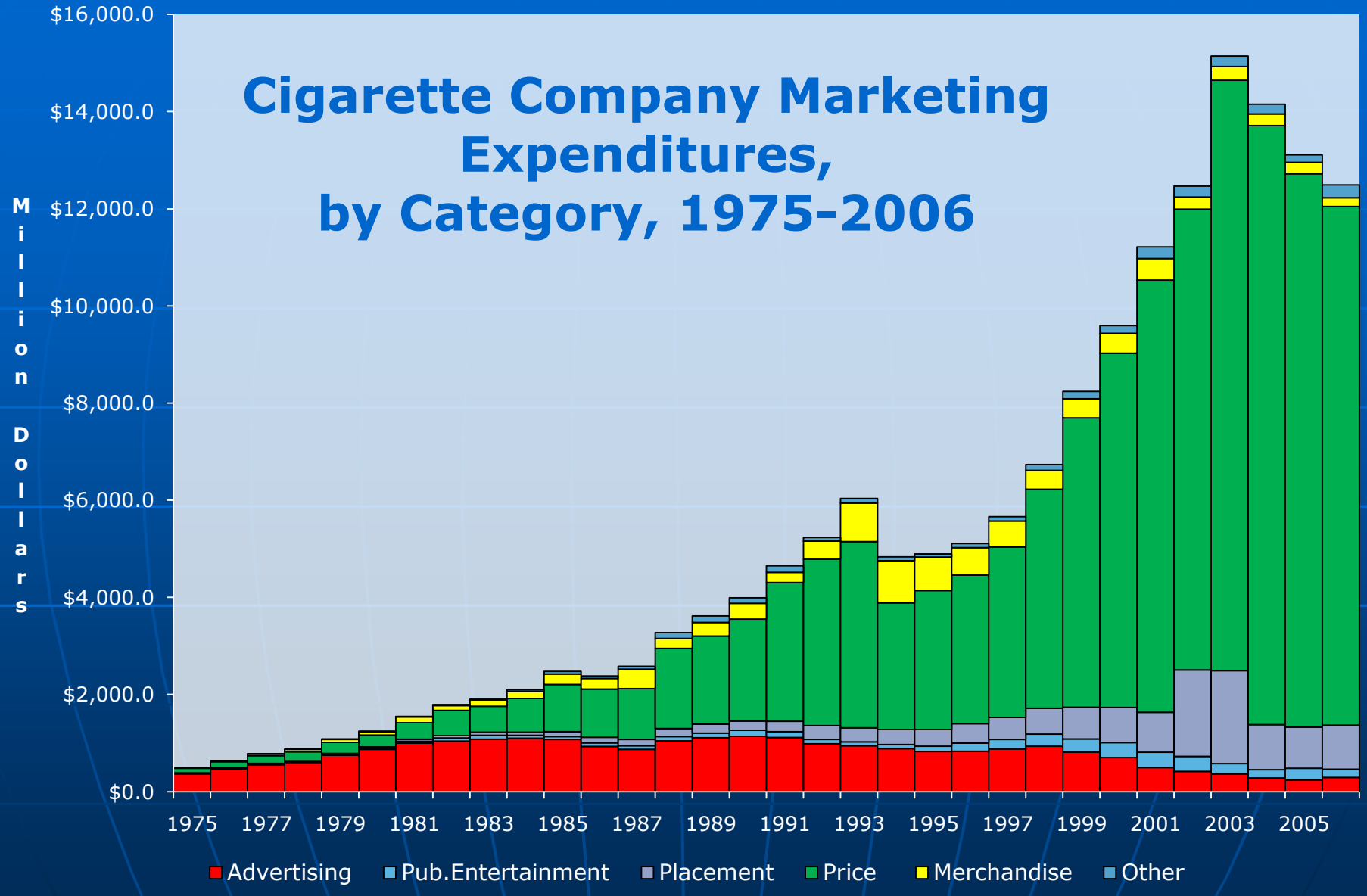
Industry Price Marketing

2006 Cigarette Marketing Expenditures by Category, United States



Source: author's calculations from data reported in FTC (2009)

Cigarette Company Marketing Expenditures, by Category, 1975-2006



Source: author's calculations from data reported in FTC (2009)

Get a RIDE
Marlboro
12
9
3
6
ULTRA LIGHTS
SKOAL
SPECIAL VALUE
$1.94
$2.40
$22.89
$2.35
CAMEL
Marlboro
Auto Trader
Great Bargains!
Truck Trader
More Values, More Choices
NO CHECKS ACCEPTED

Price-Related Marketing: Price Discounts

Price-Related Marketing: Retail Value Added - product

Price-Related Marketing: Coupons

SAVE $1.00 ON WINSTON $1.00
MANUFACTURER COUPON 04/28/90
GOOD ON 1 CARTON OF WINSTON
ANY STYLE, ANY LENGTH
02314 479335147
REDEEM BY APRIL 28, 1990
LIMIT ONE COUPON PER CARTON USE FIRST

SAVE $1.00 ON WINSTON $1.00
MANUFACTURER COUPON 05/05/90
GOOD ON 1 CARTON OF WINSTON
ANY STYLE, ANY LENGTH
02315 479335147
REDEEM BY MAY 5, 1990
LIMIT ONE COUPON PER CARTON USE SECOND

SAVE $1.00 ON WINSTON $1.00
MANUFACTURER COUPON 05/12/90
GOOD ON 1 CARTON OF WINSTON
ANY STYLE, ANY LENGTH
02316 479335147
REDEEM BY MAY 12, 1990
LIMIT ONE COUPON PER CARTON USE THIRD

$6.00 savings for the exclusive use of:
Elizabeth A Sayles

SAVE $1.00 ON WINSTON $1.00
MANUFACTURER COUPON 05/19/90
GOOD ON 1 CARTON OF WINSTON
ANY STYLE, ANY LENGTH
02317 479335147
REDEEM BY MAY 19
LIMIT ONE COUPON PER CARTON

Price-Related Marketing: Other Value Added

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

Price-Related Cigarette Marketing and Tobacco Control

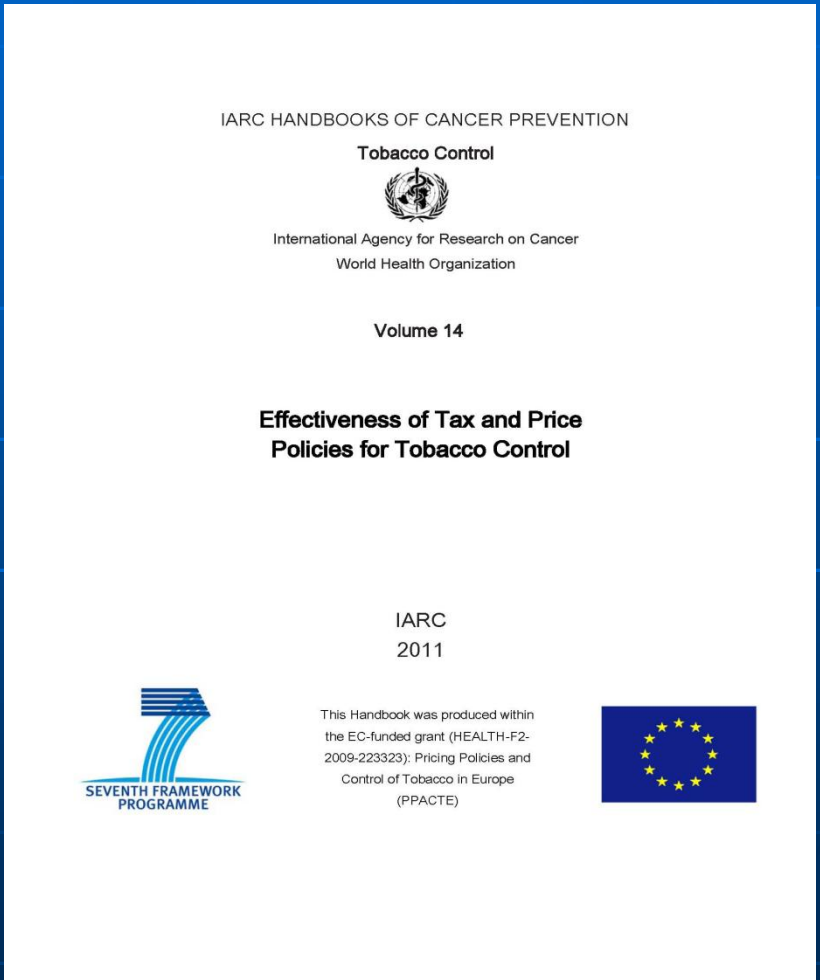
- Greater price-related marketing since the Master Settlement Agreement and related price increases (Ruel, et al., 2004; Loomis et al., 2006; FTC, 2007)

- More price-related marketing in states with greater spending on comprehensive tobacco control programs (Loomis, et al., 2006; Slater et al., 2001)

- Growing use of point-of-sale ads to highlight sales promotions (e.g. special price, special offer, cents off, reduced price, multi-pack special) (Feighery et al., 2008)

Sufficient Evidence that:

Tobacco industry price discounting strategies, price-reducing marketing activities, and lobbying efforts mitigate the impact of tobacco excise tax increases.



IARC HANDBOOKS OF CANCER PREVENTION

Tobacco Control

International Agency for Research on Cancer
World Health Organization

Volume 14

Effectiveness of Tax and Price Policies for Tobacco Control

IARC
2011

SEVENTH FRAMEWORK PROGRAMME

This Handbook was produced within the EC-funded grant (HEALTH-F2-2009-223323): Pricing Policies and Control of Tobacco in Europe (PPACTE)

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

Sources: CDC, 2010; Feighery, et al., 2005

Common Oppositional Arguments

Myths & Facts

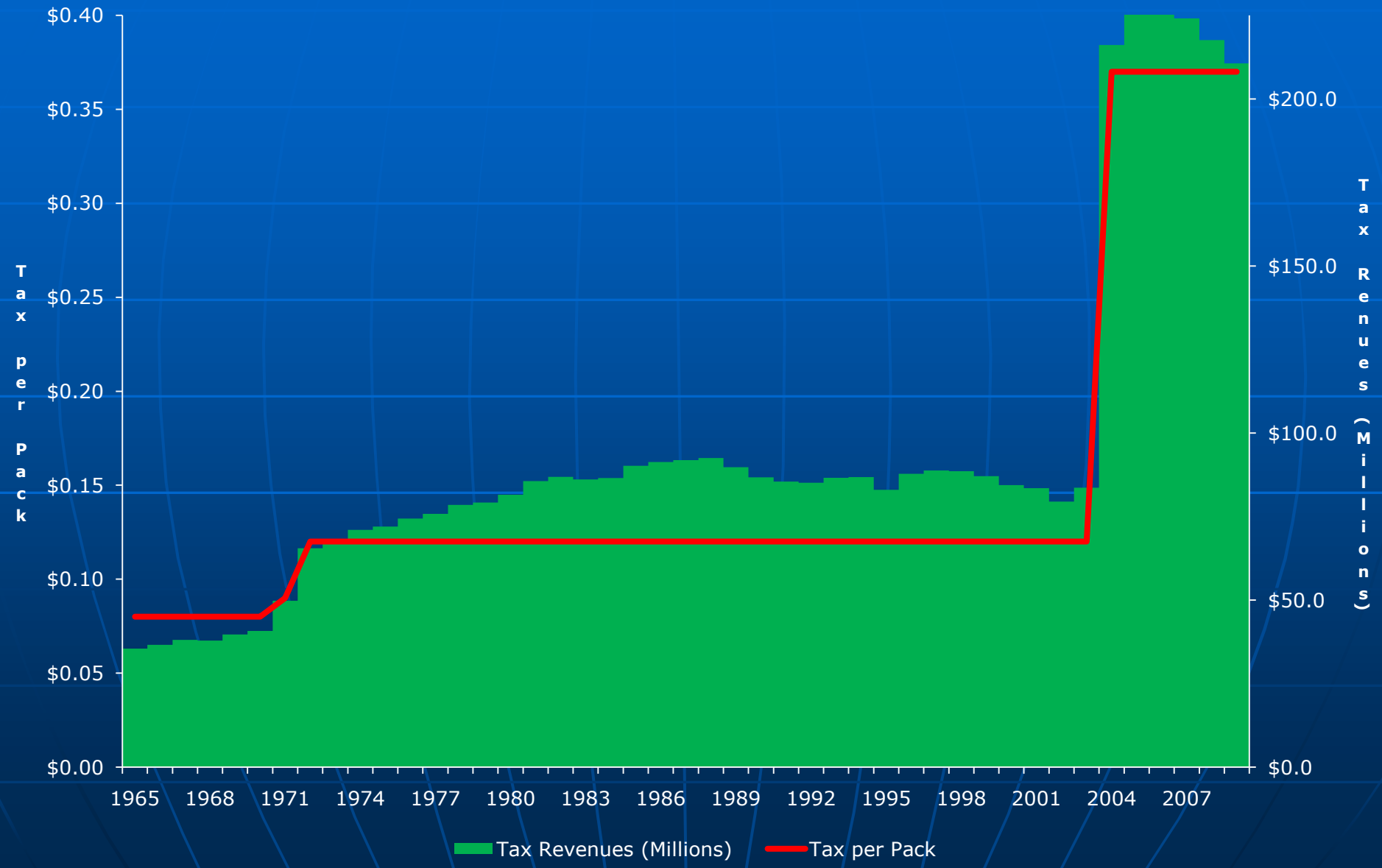
Impact on Revenues

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

- 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 10%
  - new sales 450 million packs
  - *90% of original sales at double the tax increases revenues by 80%*
  - new revenues = $900 million

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

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

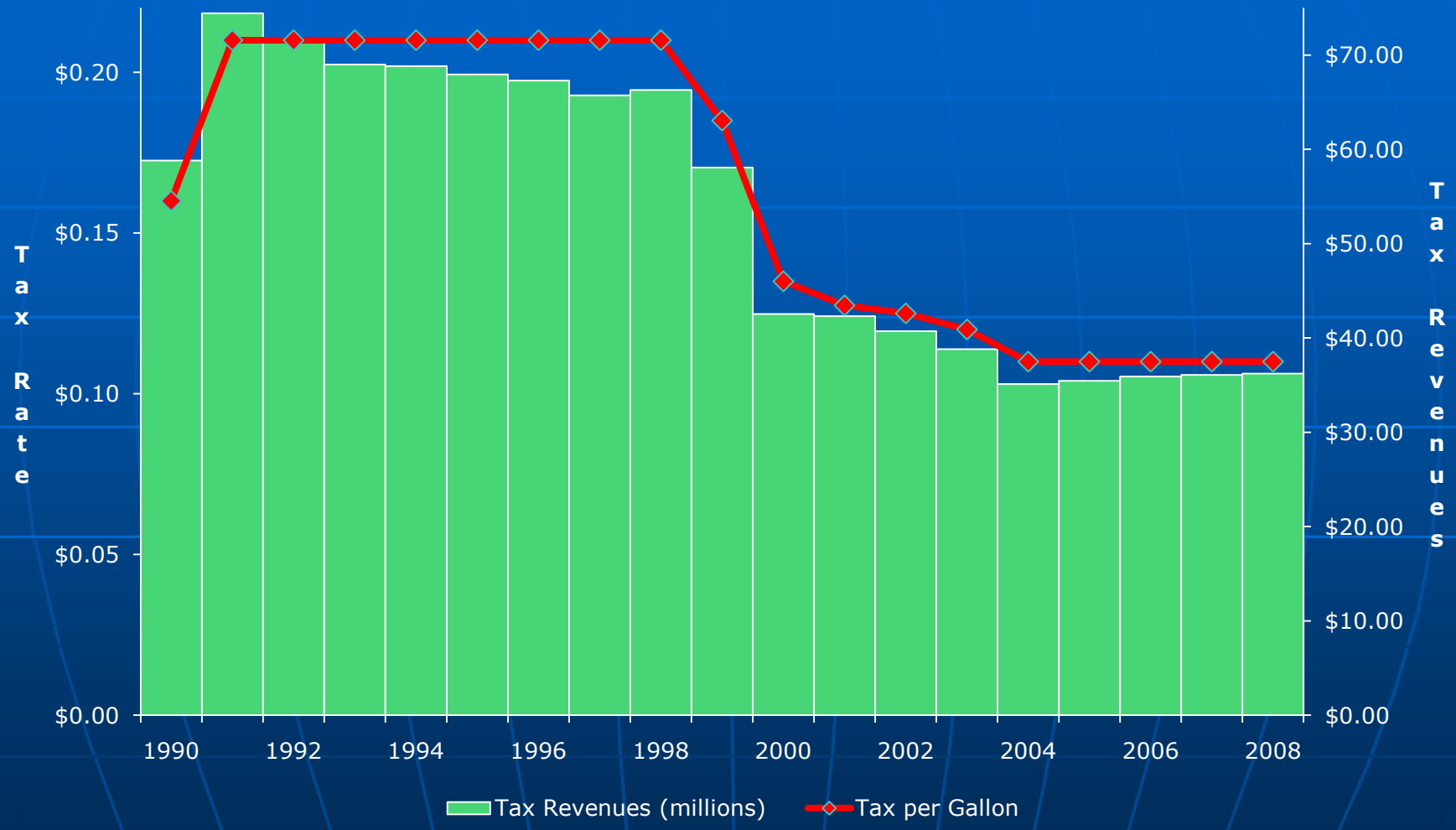
Sustainability of Cigarette Tax Revenues

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

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

Impact on Businesses

- More recent argument that higher taxes will harm convenience stores
- New analysis
  - Number of convenience stores (convenience only, gas stations, both), by state, 1997-2009
  - State cigarette tax rates and smoke-free air policies
  - Economic conditions (income, unemployment, gas prices)
  - Multivariate, fixed effects econometric models

Impact on Businesses

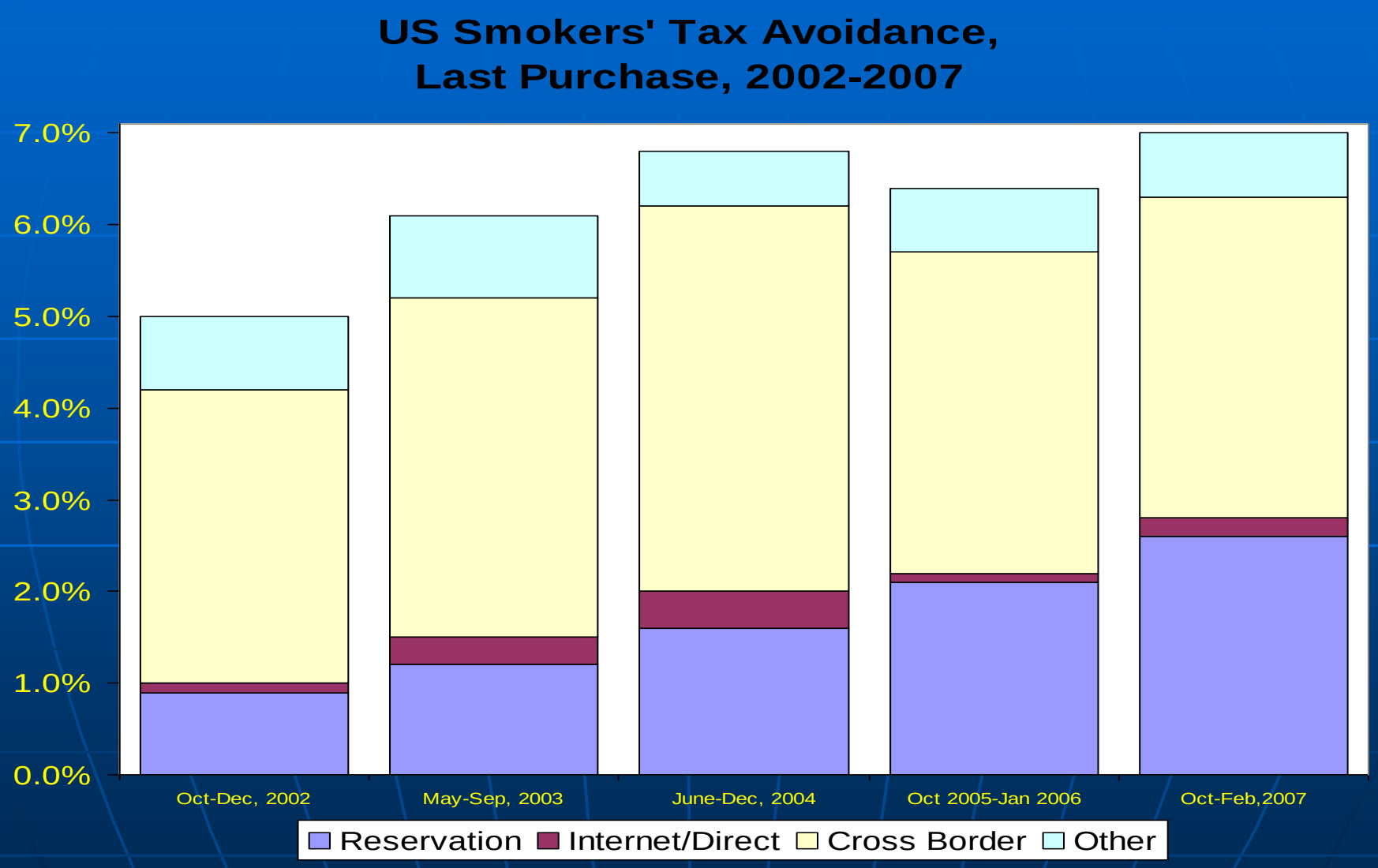
- Results:
  - Positive association between state cigarette tax and number of convenience stores
    - "overshifting" of cigarette tax in retail price
    - Substitution of spending on cigarettes to spending on other products
    - $1.00 tax increase associated with increase of 11 stores per million population
  - No impact of smoke-free policies
  - Robust to alternative specifications and empirical methods

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.

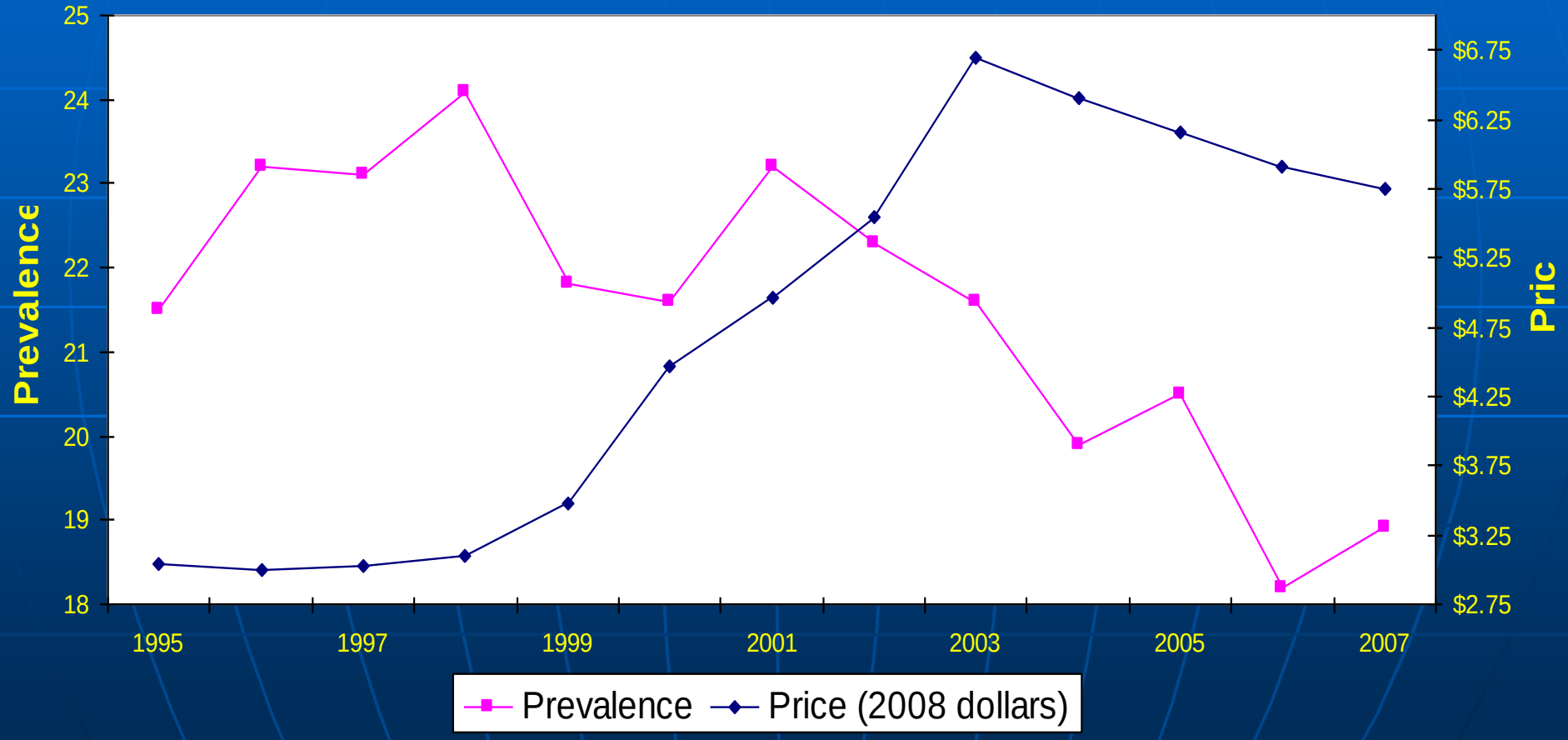
Tax Avoidance



Source, ITC project, US survey, Waves 1-5

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

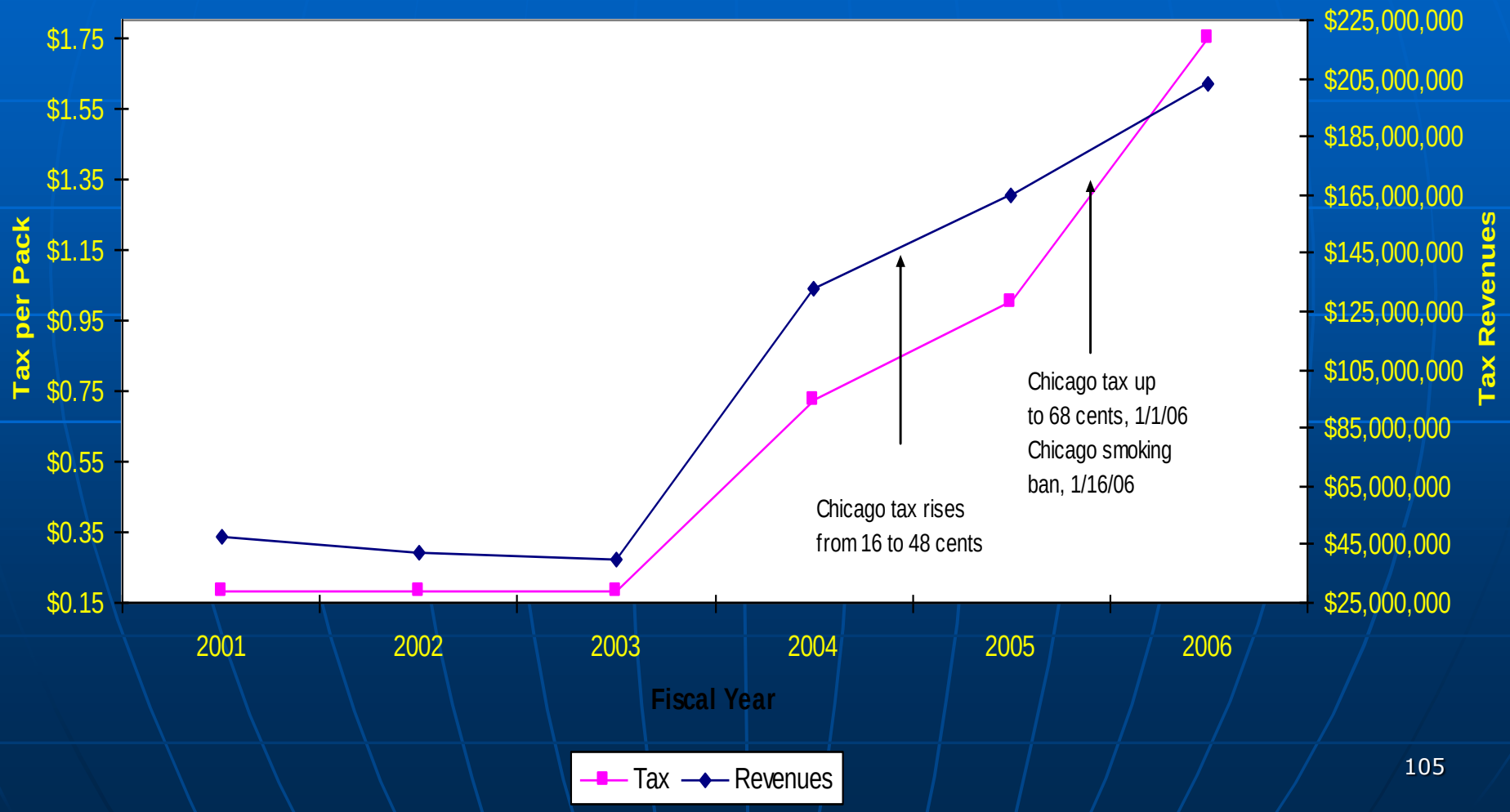
Cigarette Prices and Adult Prevalence, New York, 1995-2007



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

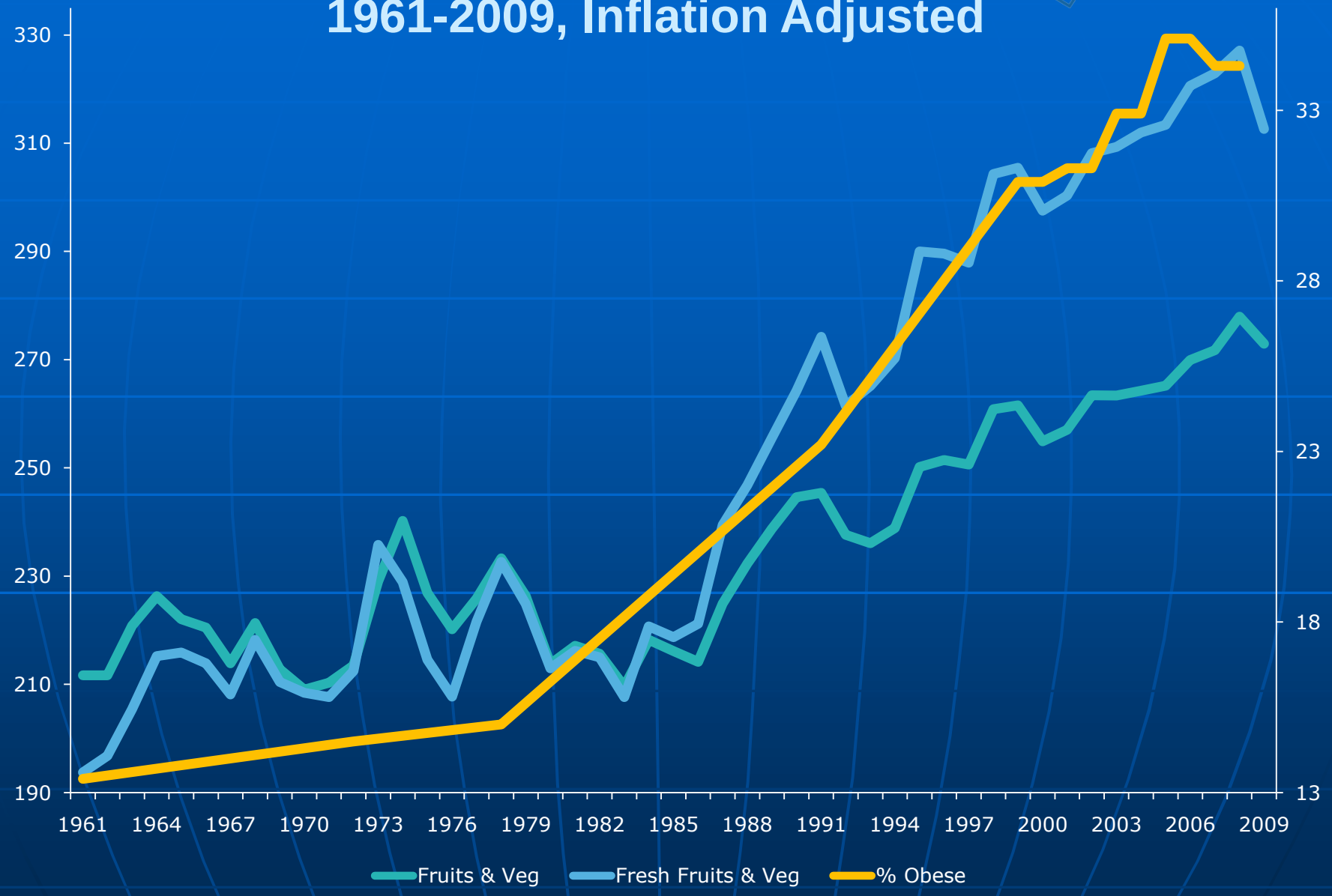
Impact on the Poor

- 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

Taxation and Obesity?

Selected Food Price & Adult Weight Trends

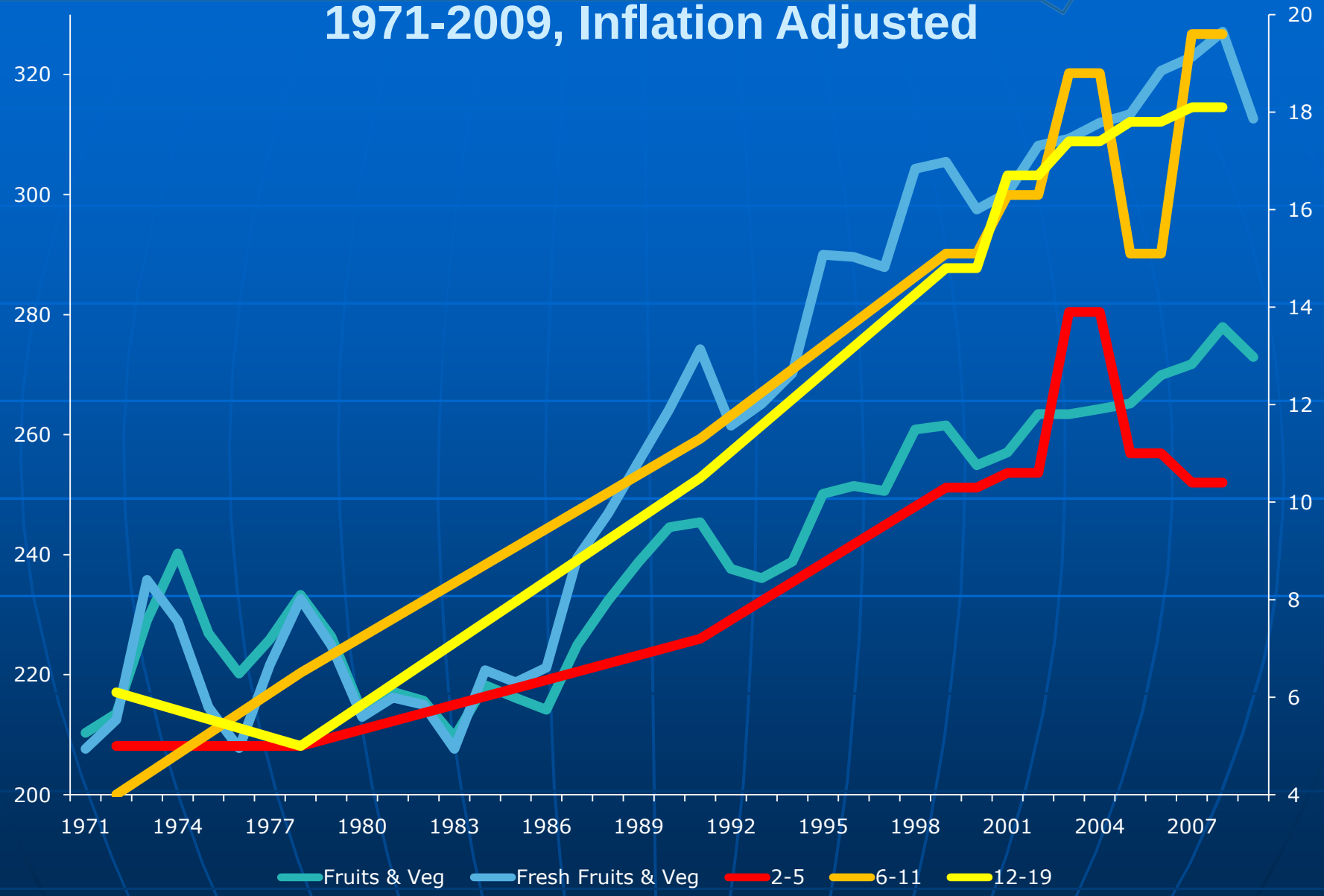
1961-2009, Inflation Adjusted



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

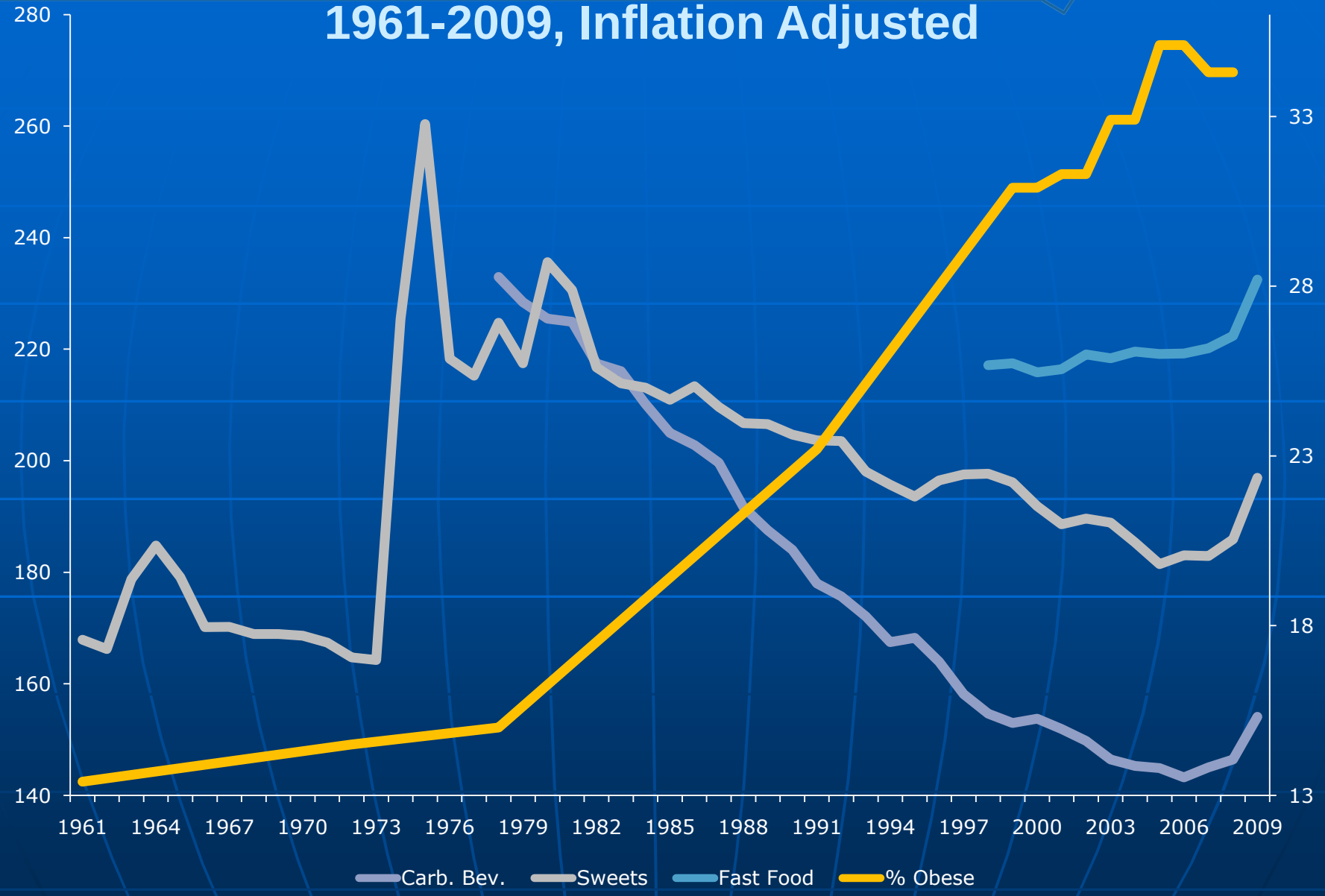
1971-2009, Inflation Adjusted



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

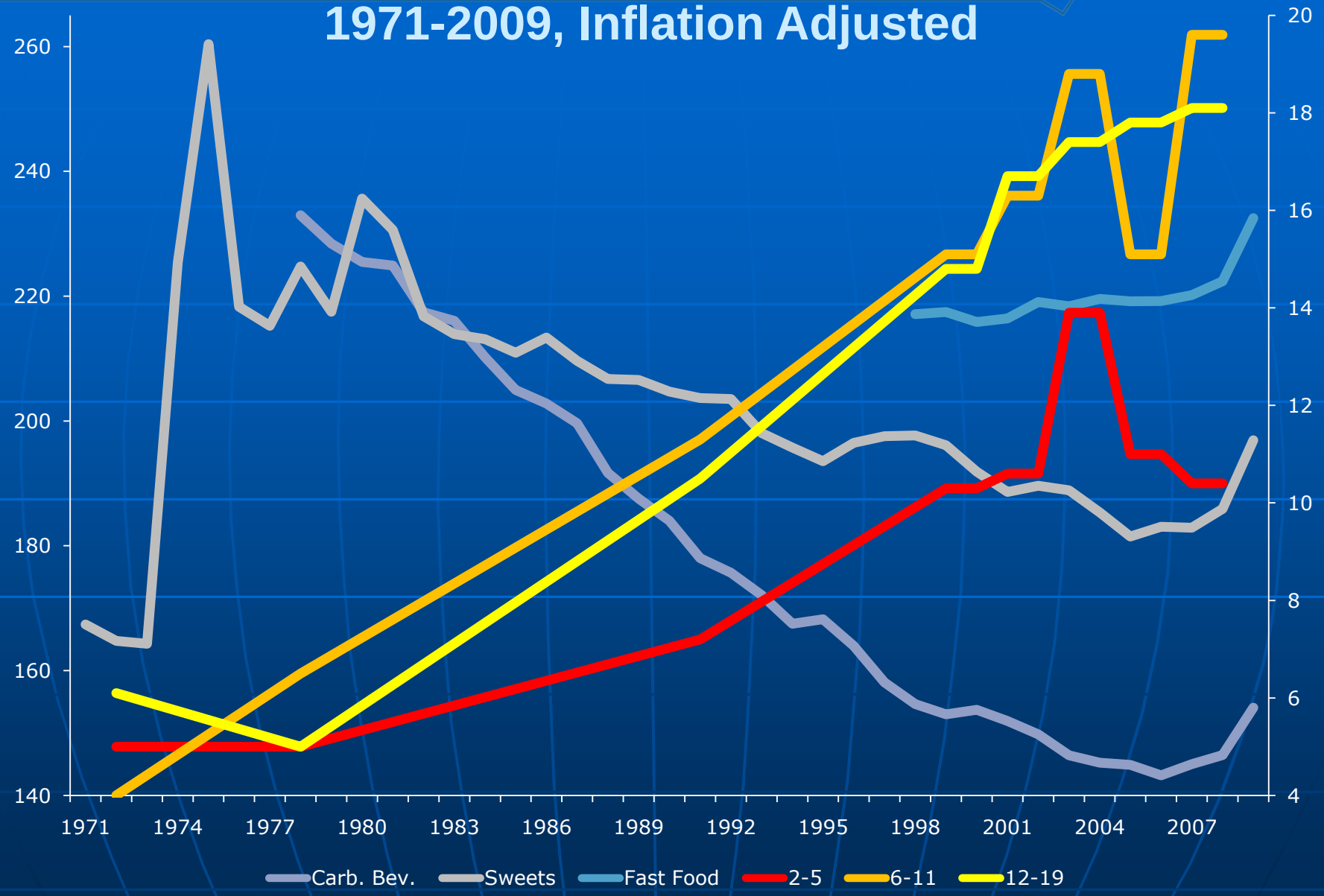
1961-2009, Inflation Adjusted



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

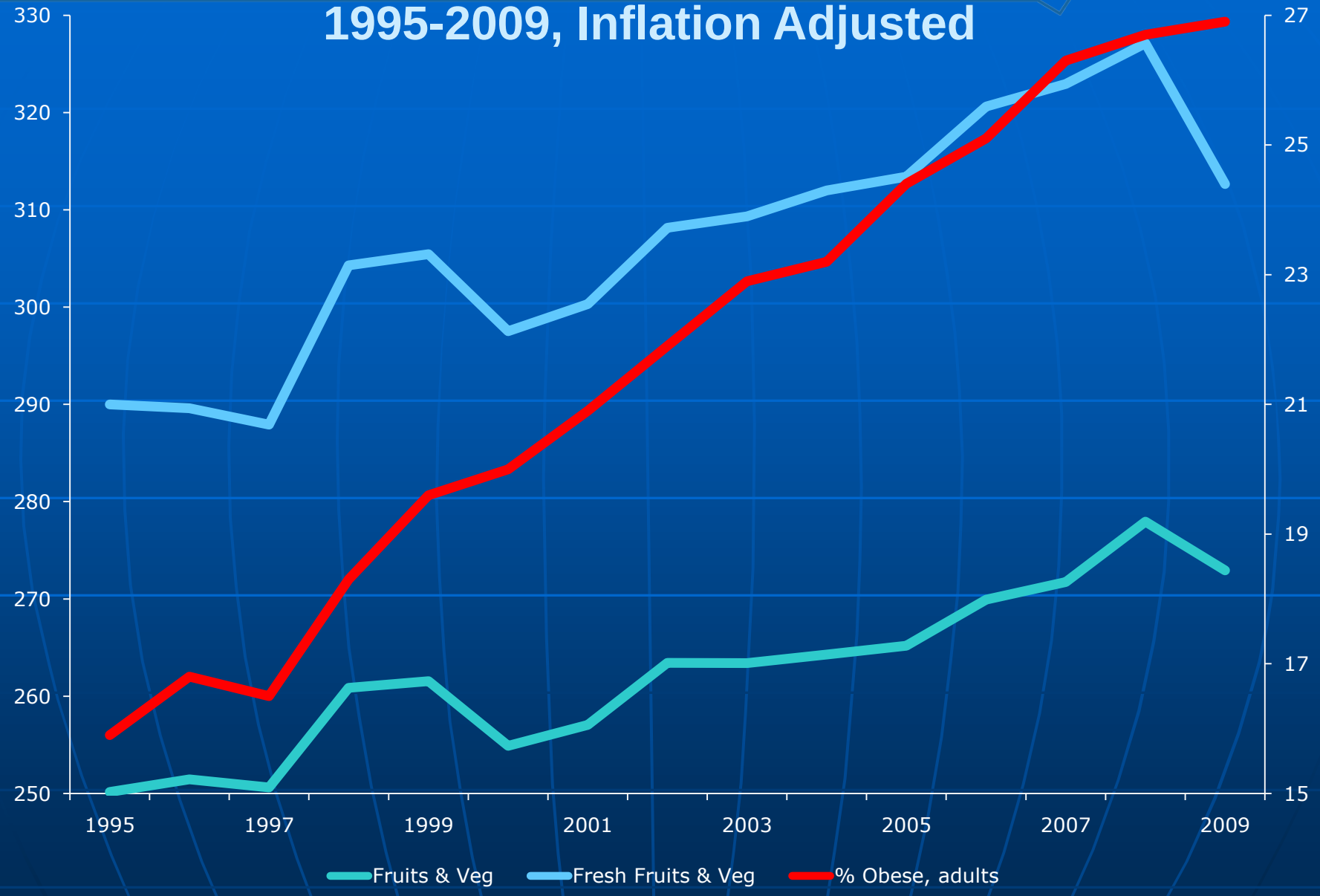
1971-2009, Inflation Adjusted



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

Selected Food Price & Adult Weight Trends

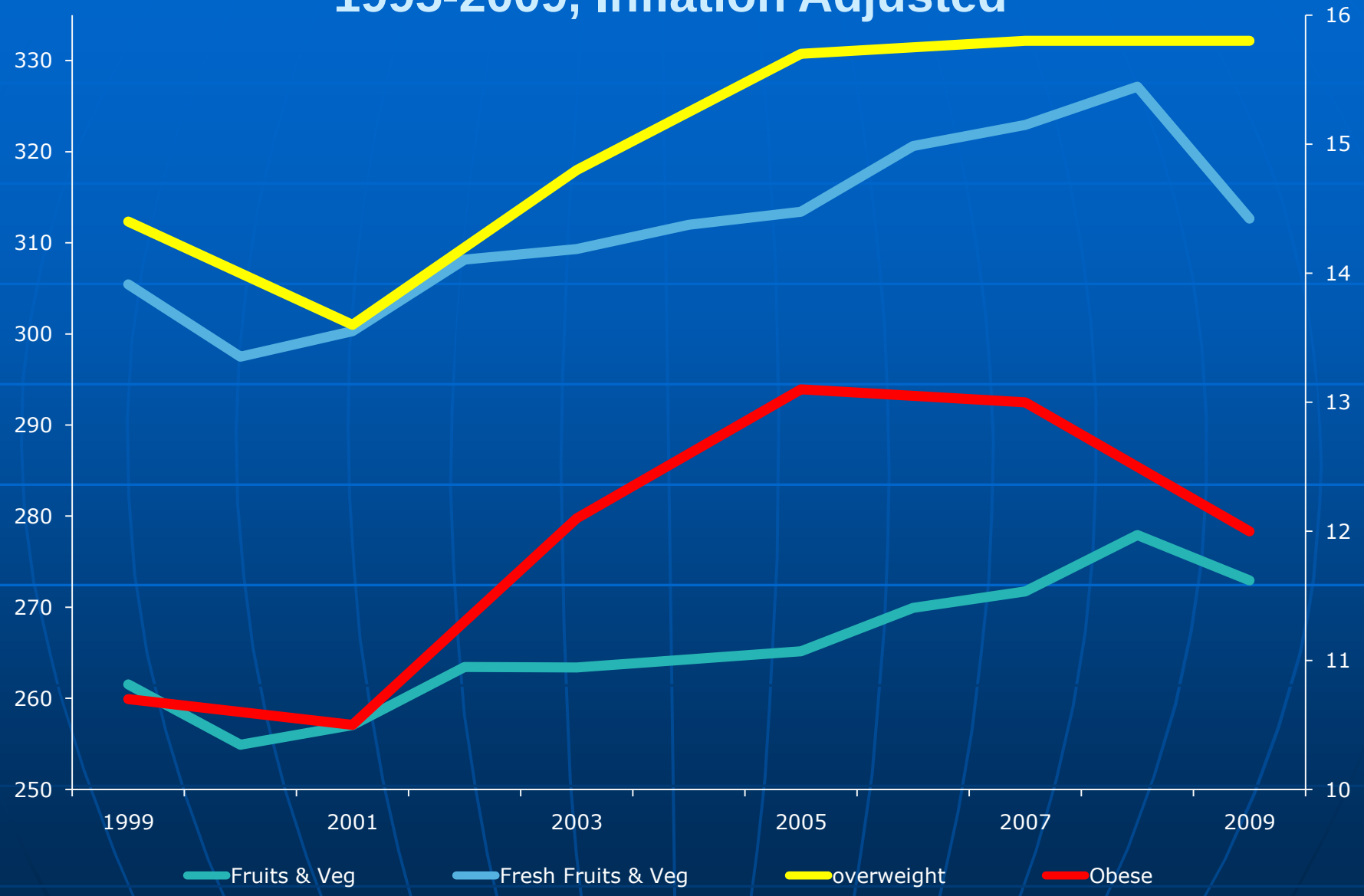
1995-2009, Inflation Adjusted



Source: BLS; BRFSS

Selected Food Price & Youth Weight Trends

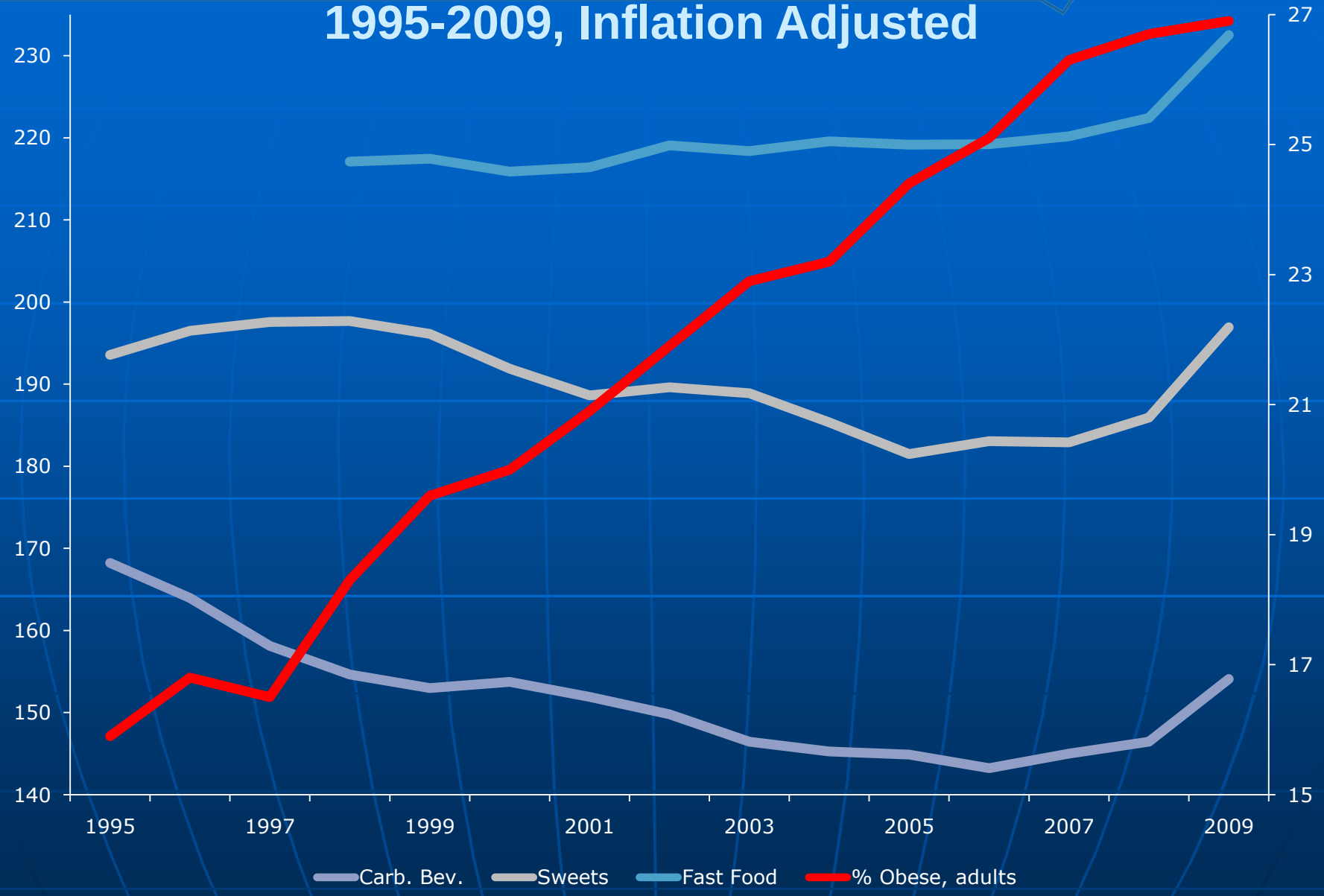
1995-2009, Inflation Adjusted



Source: BLS; YRBS

Selected Food Price & Adult Weight Trends

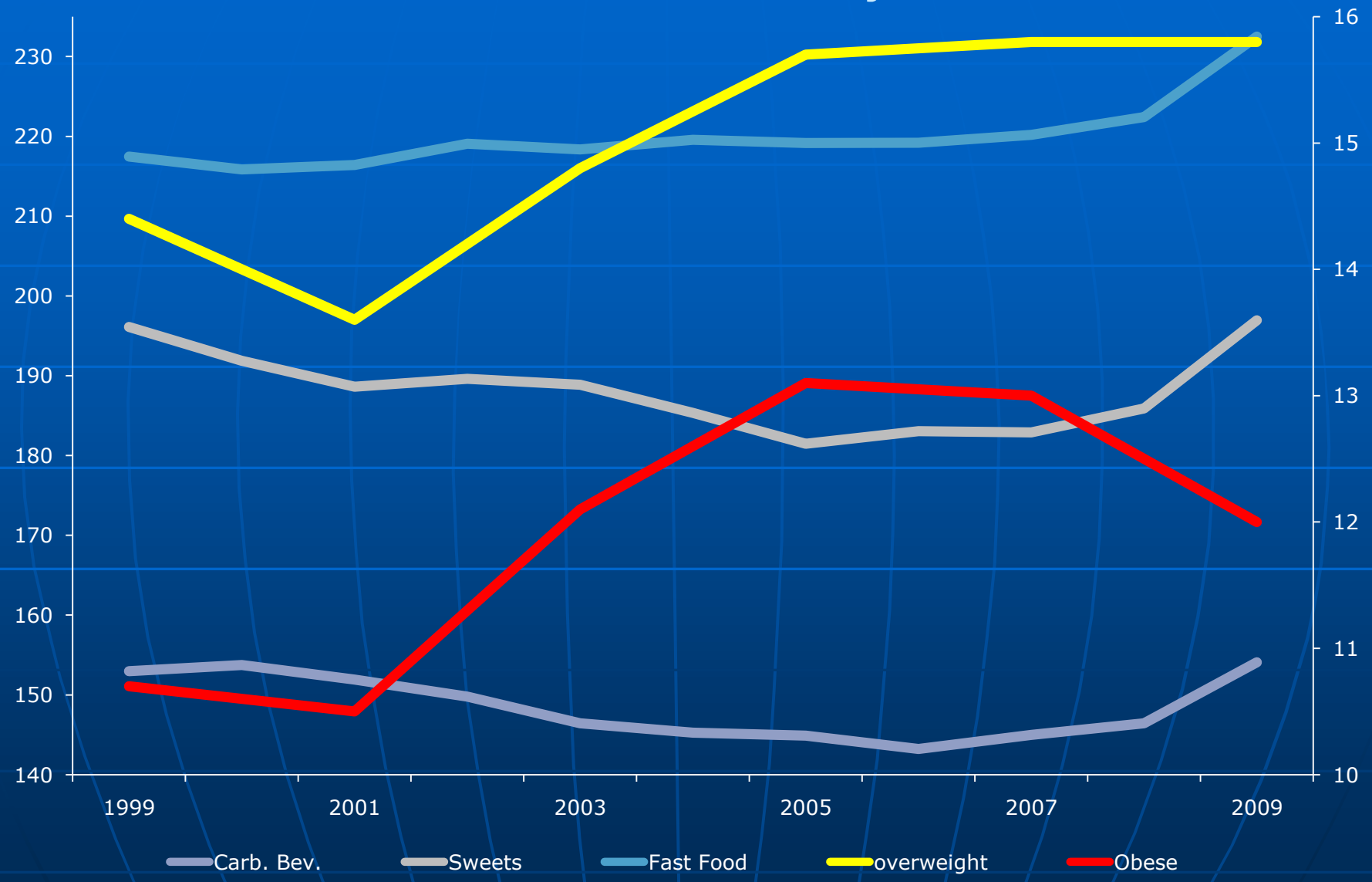
1995-2009, Inflation Adjusted



Source: BLS; BRFSS

Selected Food Price & Youth Weight Trends

1995-2009, Inflation Adjusted



Source: BLS; YRBS

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%

Source: Andreyeva, et al., 2010

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.

Source: Powell and Chaloupka, 2009; Chaloupka et al., 2009

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

Source: Powell and Chaloupka, 2009; Chaloupka et al., 2009

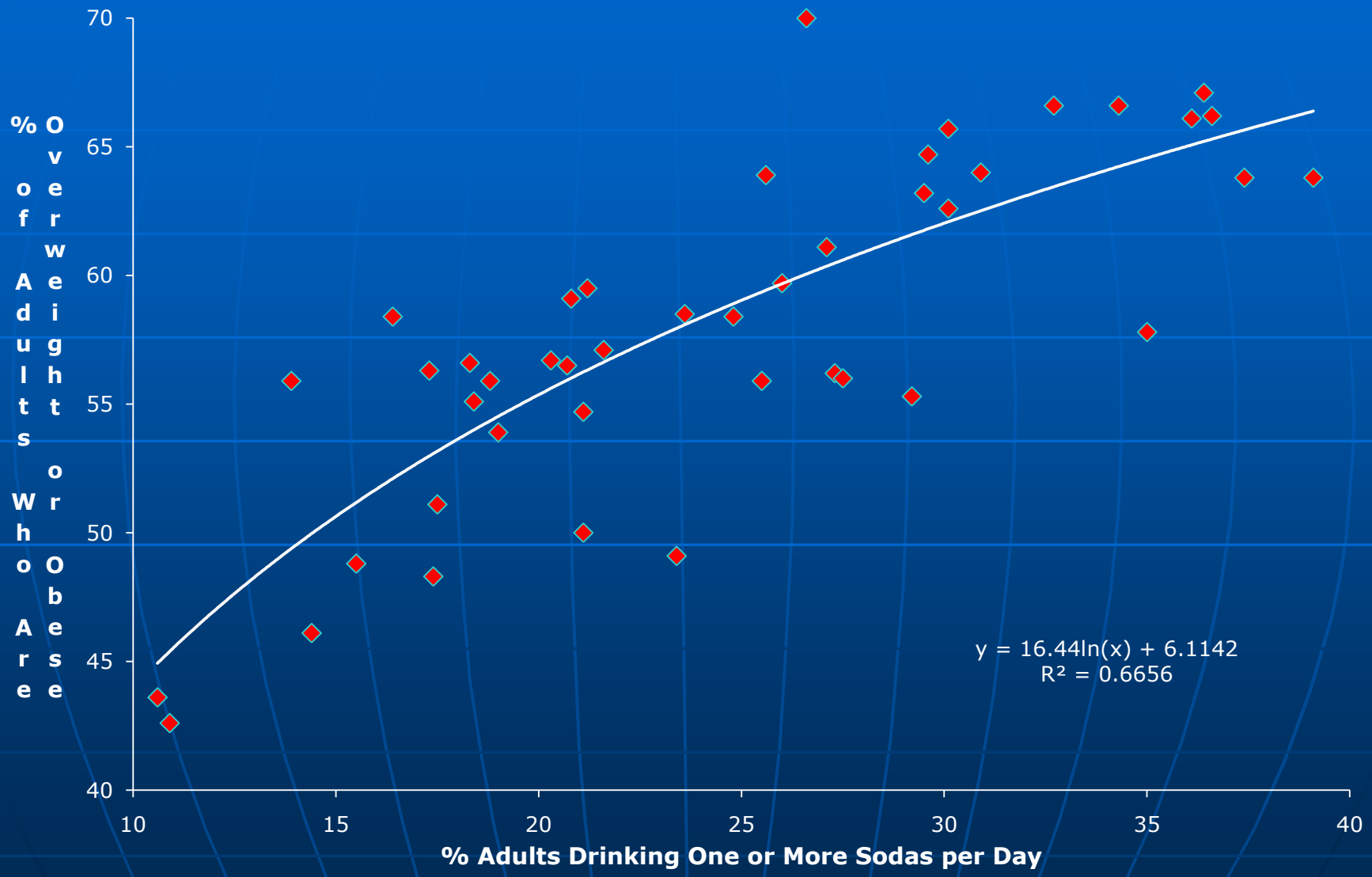
Sugar Sweetened Beverage Taxes

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.

Economic Rationale for SSB Taxes

In addition to public health rationale, government intervention warranted when 'market failures' exist

- 'Negative Externalities'
  - *Situation where consumer or producer does not bear the full cost of their consumption or production*
  - With SSBs, clearest negative externality is the significant health care costs paid for by public health insurance programs
    - Estimated at $147 billion in 2006 (Finkelstein, et al., 2009)
    - 9.1% of overall health care spending in US
    - About half paid for through Medicaid and Medicare
    - Rising rapidly
  - Additional costs borne by employers

Economic Rationale for SSB Taxes

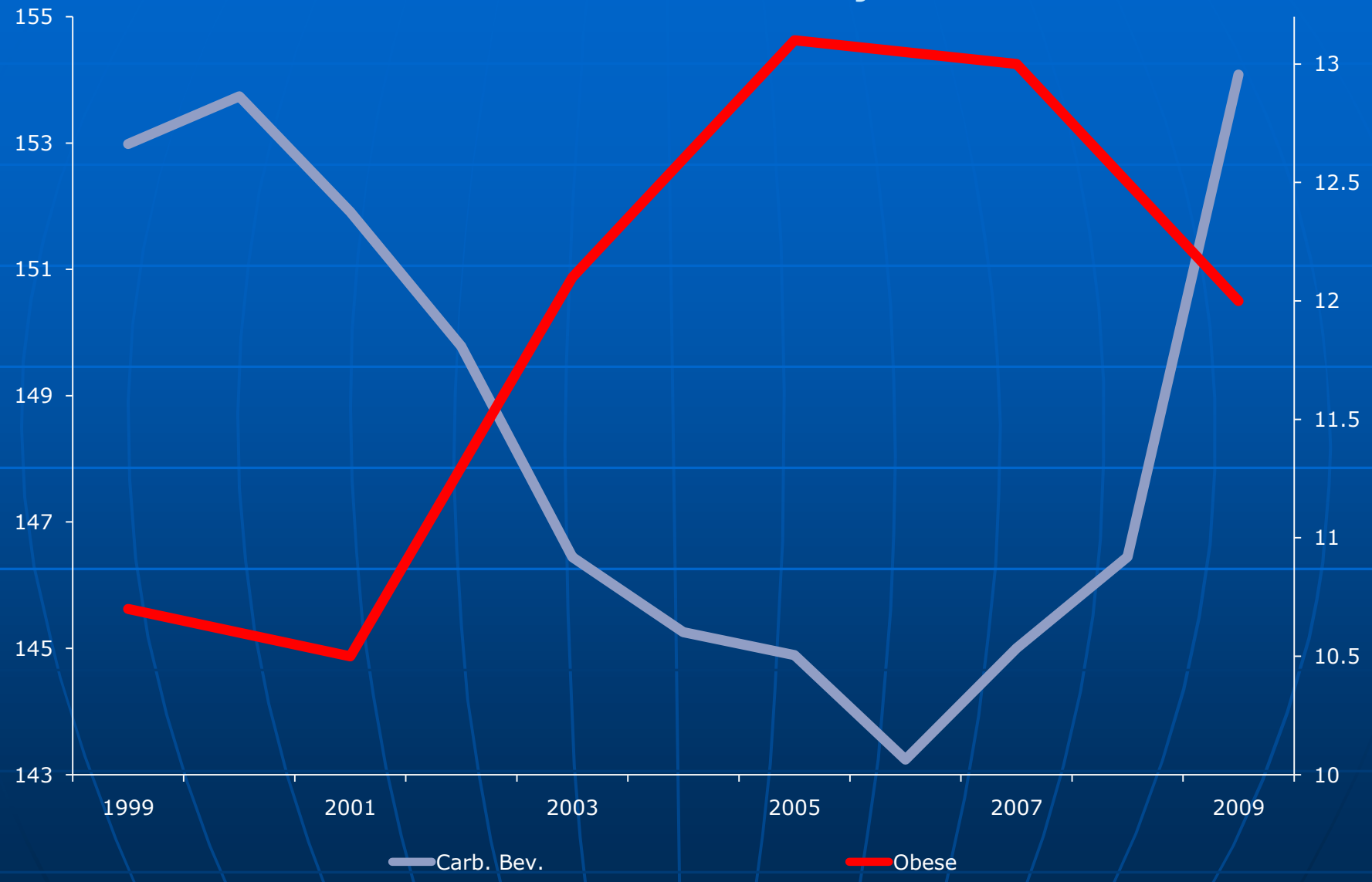
- ‘Imperfect Information’
  - *Consumers do not fully understand the costs and benefits of their consumption decisions*
    - Less than complete information about the caloric content of beverages consumed
    - Imperfect understanding about impact of consumption on weight, health
    - Distorted by pervasive marketing
    - Compounded by early age at which consumption begins and habit formation
- ‘Time Inconsistent Preferences’
  - *Tradeoffs between immediate gratification and long-term impact*
    - Leads many to later regret consumption choices
    - Particularly true for younger, less educated populations who tend to have greater preference for the present

Economic Rationale for SSB Taxes

- ‘First-Best’ Interventions
  - *Those that deal directly with the market failure at issue*
    - Menu-labeling to provide information on caloric content
    - School-based and mass-media education efforts to inform about the role of SSB consumption in weight outcomes, health consequences
    - Often costly and at times ineffective in reaching most at-risk populations
- ‘Second-Best’ Interventions
  - *Blunter instruments that address market failure but have broader impact*
    - Taxes/subsidies that alter the relative prices of healthier, less healthy options can target financial externalities
    - Influence prices for all consumers, not just those who generate the external costs

Carbonated Beverage Prices & Youth Obesity

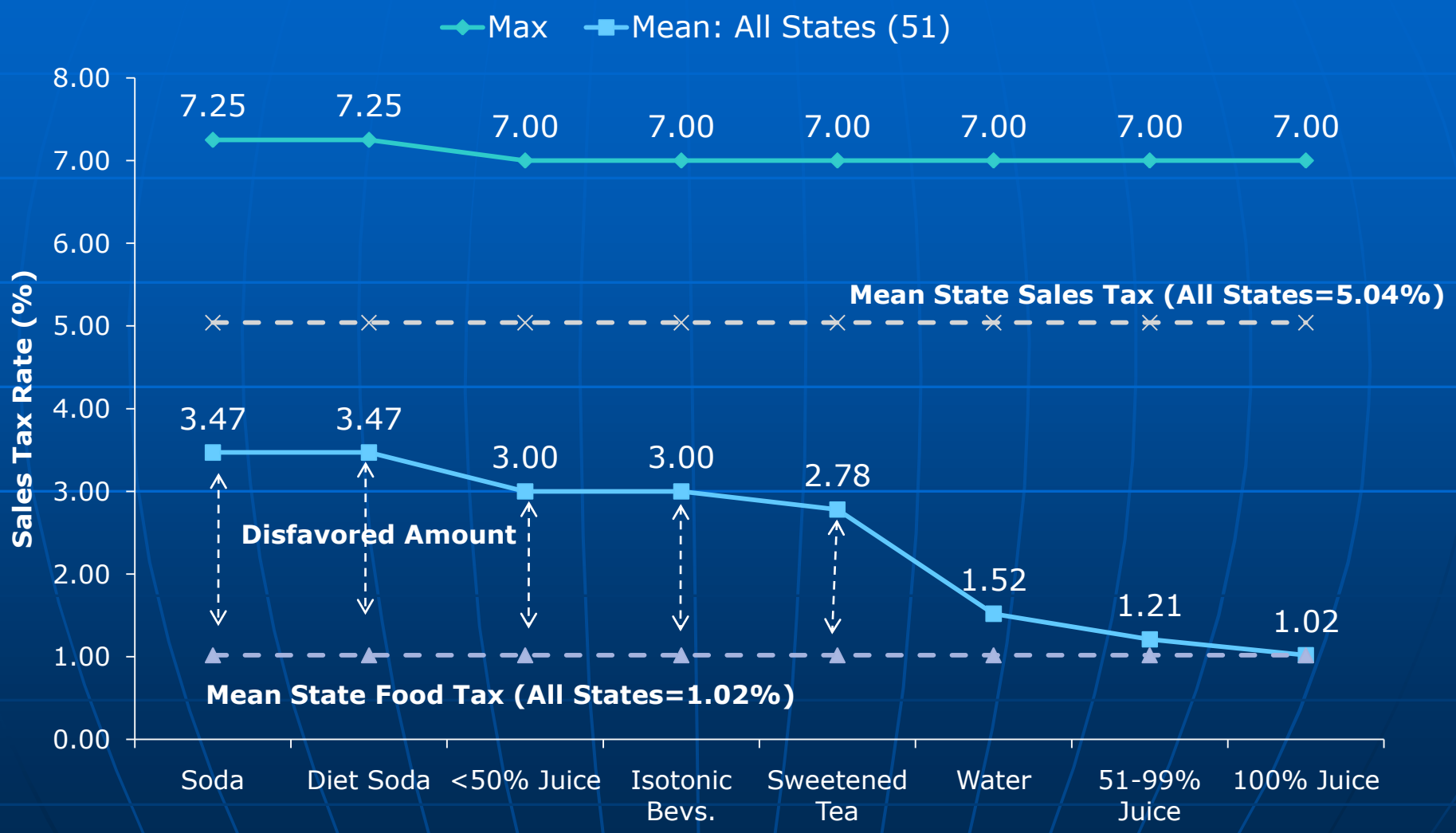
1995-2009, Inflation Adjusted



Source: BLS; YRBS

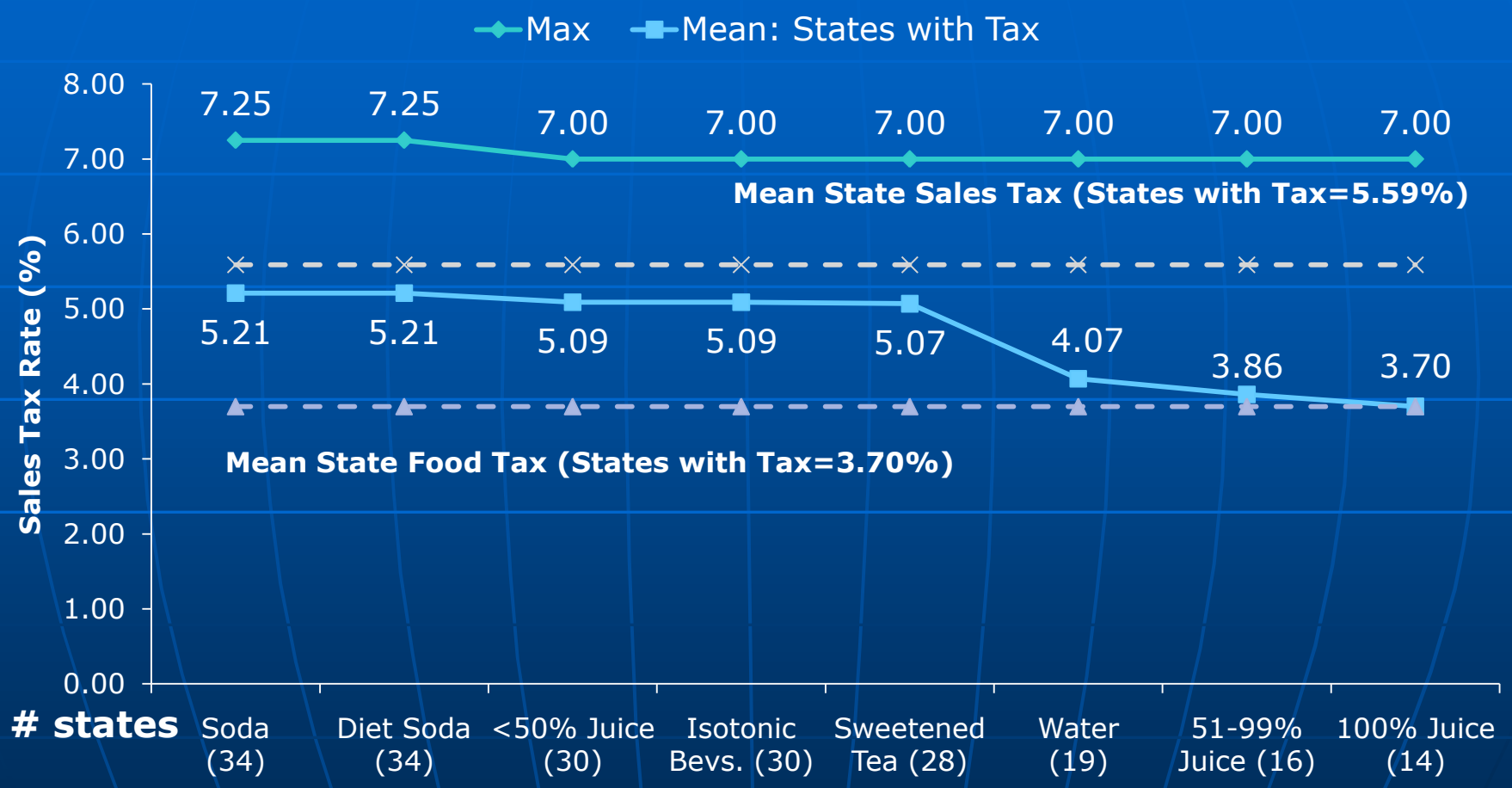
Current SSB Taxation

Sales Taxes on Selected Beverages, All States, July 1, 2010



Note: Three states also impose a mandatory statewide local tax that is not reflected in the above data: CA (1%), UT (1.25%), VA (1%).

Sales Taxes on Selected Beverages, Taxing States, July 1, 2010



Note: Three states also impose a mandatory statewide local tax that is not reflected in the above data: CA (1%), UT (1.25%), VA (1%).

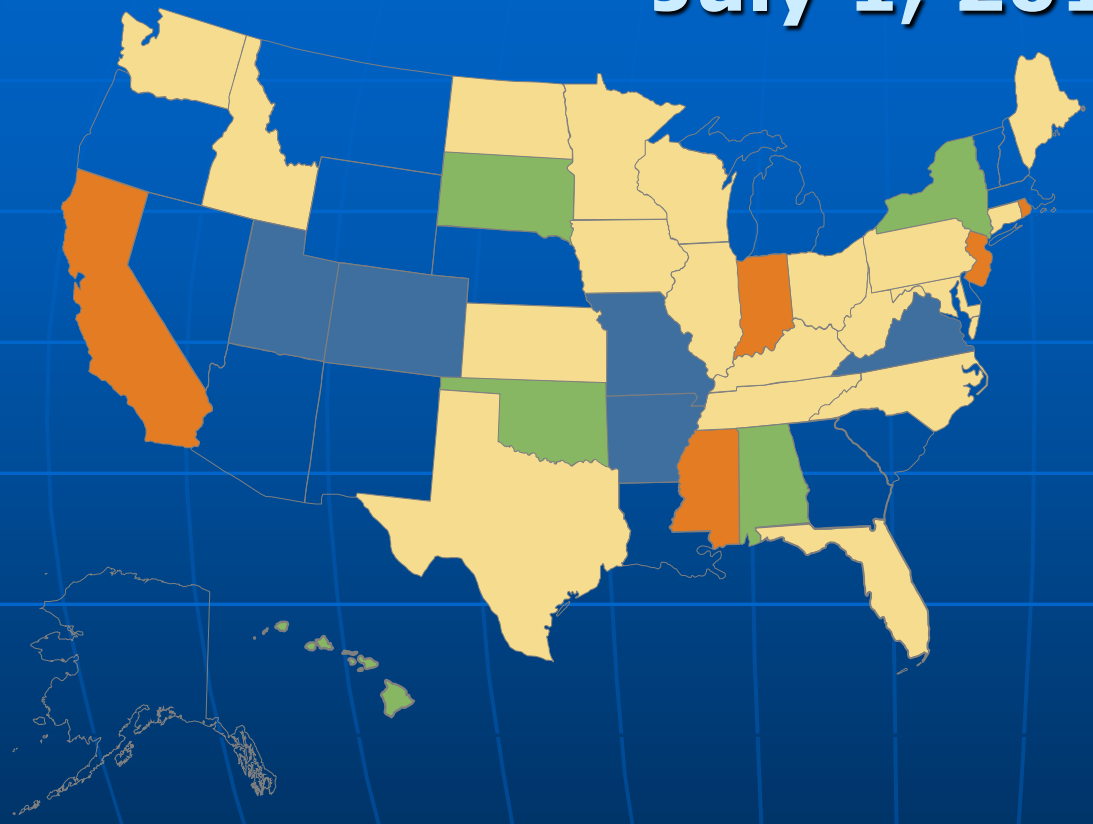
Sales taxes applied to vending machines sales

Selected Beverages, July 1, 2010)

	Mean all states (%)	Max (%)	N	Mean taxing states (%)
Soda	4.14	8.00	40	5.28
Diet Soda	4.14	8.00	40	5.28
≤ 50% fruit juice	4.02	8.00	39	5.26
Isotonic beverages	4.02	8.00	39	5.26
Sweetened teas (bottle/can)	3.90	8.00	38	5.24
Bottled water	3.38	8.00	34	5.07
>51% fruit juice, but < 100% fruit juice	3.30	8.00	33	5.10
100% fruit juice	3.30	8.00	33	5.10

State Sales Taxes on Regular and Diet Soda

July 1, 2010



MAP LEGEND

- ≥ 7% (n=5 states)
- ≥5% to < 7% (n=19 states)
- ≥ 3% to < 5% (n=5 states)
- ≥1% to < 3% (n=5 states)
- 0% (n=16 states plus DC)

Note: Three states also impose a mandatory statewide local tax that is not reflected in the above data: CA (1%), UT (1.25%), VA (1%).

SSB Taxes & Prices

Consumption and Weight

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)

AC Nielsen HomeScan

- **Objective**
- To examine the association of soda taxes with household soda purchases

- **Data Description**
- Cross-section of household purchase information based on scanner data from a variety of stores, 2nd Q 2007
- Household demographic data
- Final sample includes 66,211 non-military households
- Outcome variable: soda volume in ounces of carbonated beverages purchased per household over the sample period (m=566 ounces ~ 2 cases of 12 oz cans)
- Control variables: household income, size, race, educational attainment, presence of children/age, female head of household employment status, and census regions

Preliminary Results

OLS Regression Results: Soda Volume

	All Households	Households with Children	Households without Children
Disfavored Soda Tax Amount	-9.352**	-10.983**	-8.417**

Source: Loudermilk, Powell, Chriqui, and Chaloupka, *in progress*, 2011

Policy Simulations

- Results imply small tax elasticities for purchases of -0.06.
- If all states increased sales taxes to the maximum tax rate of 7% (an increase of 60.6% from the current sample mean of 4.36%), household purchases of regular soda are estimated to be 3.6% lower.
- Consider the imposition of a **new 20% tax** → assuming constant elasticity, household regular soda purchases are estimated to be **33% lower**.
  - The extent to which this applies to all regular soda consumption depends on constant elasticity noted above, and whether regular soda consumed away-from-home is similarly price/tax responsive.

ECLS-K

- **Objective**
- To examine association between soda taxes, consumption and weight of children

- **Data Description**
- Nationally representative panel of elementary school students.
- Food consumption 5th grade; measured height and weight
- Final sample:7,414 children who reported their food consumption and 7,300 children for which height and weight information exists
- Outcome variables: soda consumption in last week (m=6), soda purchases at school (m=0.4), and weight change 3rd to 5th grade (m=1.9)
- Control variables: age in months, race/ethnicity, family income, mother's education level, physical activity, TV watching, parent-child interactions.

Associations by Sub-populations

Outcome Variable	Total Consumption		School Consumption		BMI Change	
	Higher Soda Tax Amount	Higher Soda Tax Indicator	Higher Soda Tax Amount	Higher Soda Tax Indicator	Higher Soda Tax Amount	Higher Soda Tax Indicator
Full Sample	-0.004	-0.006	-0.010	-0.064*	-0.013*	-0.085**
At Risk of Overweight	-0.026	-0.078	-0.011	-0.067	-0.033**	-0.222**
Low-Income	-0.142*	-0.811	-0.039**	-0.239**	-0.000	-0.005
African American	-0.125	-0.767	-0.103**	-0.585**	0.029	0.086
9+ Hrs TV	-0.073	-0.376	-0.029**	-0.178**	-0.014	-0.091

Source: Sturm, Powell, Chriqui, and Chaloupka, *Health Affairs*, 2010

Associations by Sub-populations

Outcome Variable	Total Consumption		School Consumption		BMI Change	
	Higher Soda Tax Amount	Higher Soda Tax Indicator	Higher Soda Tax Amount	Higher Soda Tax Indicator	Higher Soda Tax Amount	Higher Soda Tax Indicator
Full Sample	-0.004	-0.006	-0.010	-0.064*	-0.013*	-0.085**
At Risk of Overweight	-0.026	-0.078	-0.011	-0.067	-0.033**	-0.222**
Low-Income	-0.142*	-0.811	-0.039**	-0.239**	-0.000	-0.005
African American	-0.125	-0.767	-0.103**	-0.585**	0.029	0.086
9+ Hrs TV	-0.073	-0.376	-0.029**	-0.178**	-0.014	-0.091

Source: Sturm, Powell, Chriqui, and Chaloupka, *Health Affairs*, 2010

Policy Simulations

- Assuming a constant elasticity, an 18% differential soda tax would correspond to a -0.23 BMI units in the change in BMI between 3rd and 5th grade, or a 20% reduction in the excess BMI gain.

NLSY-97

- **Objective**
- To examine association of soda taxes with youths' BMI using cross-sectional *and* longitudinal models

- **Data Description**
- Nationally representative longitudinal data on youth aged 12 to 17 in 1997; 4 waves of including 1997, 1998, 1999 and 2000
- Estimation sample includes 11,900 person-year observations living at home
- Information on parental characteristics available from parental questionnaire and annual household roster data
- Outcome variable: weight status: BMI and overweight prevalence
- Control variables: age, gender, race, ethnicity, income, mother's education, mother's employment status
- Neighborhood controls: median household income

Preliminary Regressions Results- Cross Sectional Analysis

	Female		Male	
	BMI	Overweight	BMI	Overweight
Full Sample				
0<tax≤4%	0.0552	0.0019	-0.0337	-0.0055
4%<tax≤5%	0.1339	0.0017	-0.1457	-0.0160
5%<tax≤6%	-0.0797	-0.0105	0.2203	0.1010
tax>6%	-0.0548	-0.0053	0.5410*	0.0257
Low Income				
0<tax≤4%	-0.5963	-0.0371*	-0.5030	-0.0556**
4%<tax≤5%	0.2401	-0.0094	-0.2245	-0.0073
5%<tax≤6%	-0.3359	-0.0436**	-0.1683	-0.0470**
tax>6%	-0.4483	-0.0369*	-0.4099	-0.0435**

Source: Powell, et al., in progress

Preliminary Regressions Results- Longitudinal Analysis (FE)

	Female		Male	
	BMI	Overweight	BMI	Overweight
Full Sample				
0<tax≤4%	-0.7805**	-0.0078	-0.4054***	-0.0503
4%<tax≤5%	-0.7938**	-0.0153	-0.0942	-0.0369
5%<tax≤6%	-0.2033	0.0308*	-0.2297	-0.0591
tax>6%	-0.5647	0.0667*	0.4693	-0.0212
Low Income				
0<tax≤4%	-2.1950***	-0.0628***	-1.0196***	-0.0922***
4%<tax≤5%	-2.3600***	-0.0737**	-0.5907*	-0.0732***
5%<tax≤6%	-1.1818	-0.0162	-1.5229***	-0.0879***
tax>6%	-0.2139	0.0847	0.5069	-0.0969**

Source: Powell et al., *in progress*, 2010

Policy Implications of Empirical Results

- 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.
- *Substantial* increases in soda tax rates may have some measureable effects on outcomes and even greater effects at the population level.

SSB Tax Structure

Alternative SSB Tax Structures

Approach	Specific Tax/ Fee on Quantity of Sugar or Bev. Volume	Ad Valorem (% of price)	Upon Whom Tax Imposed	Where Tax Presented to Consumer
Non-Sales (Excise) Taxes				
Tax all SSBs	X	X	Manufacturer Distributor Wholesaler Retailer	Shelf-price
Tax all Beverages (or selected including non-SSBs)	X	X	Manufacturer Distributor Wholesaler Retailer	Shelf-price
Sales Taxes				
Tax all SSBs		X	Consumer	Point of purchase
Tax all/selected Beverages		X	Consumer	Point of purchase

SSB Tax Structure

Examples: 20 oz. soda at $1/bottle

Type of Tax	Taxable Beverage(s)	Tax Approach	Where Tax Presented to Consumer	Tax Amount	Total Price
Excise	**All SSB** bottles/ syrups/powders	Excise tax -- $0.01 per gram* sugar	Shelf price	$0.55	$1.55
Excise	**All SSB and ASB** bottles/ syrups/ powders	Ad valorem – 20% of Retail price	Shelf price	$0.20	$1.20
Sales tax	All **SSBs and ASBs**	Ad valorem – 6% of price	Check out	$0.06	$1.06

*According to the USDA National Nutrient database, there are 55.08 grams of sugar per 20 oz. bottle of sugar-sweetened soda

Alternative SSB Tax Structures

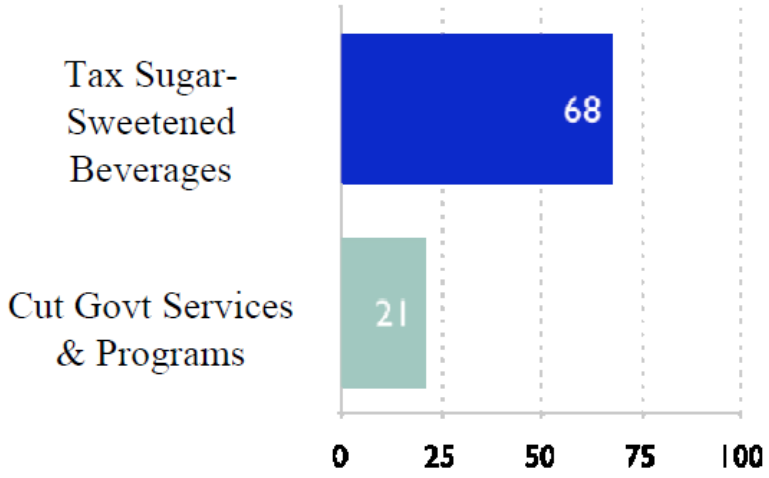
- From a public health perspective, specific excise tax preferable to sales tax or ad valorem excise tax for several reasons:
  - More apparent to consumer
  - Easier administratively
  - Reduces incentives for switching to cheaper brands, larger quantities
  - Revenues more stable, not subject to industry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

SSB Taxation & Revenues

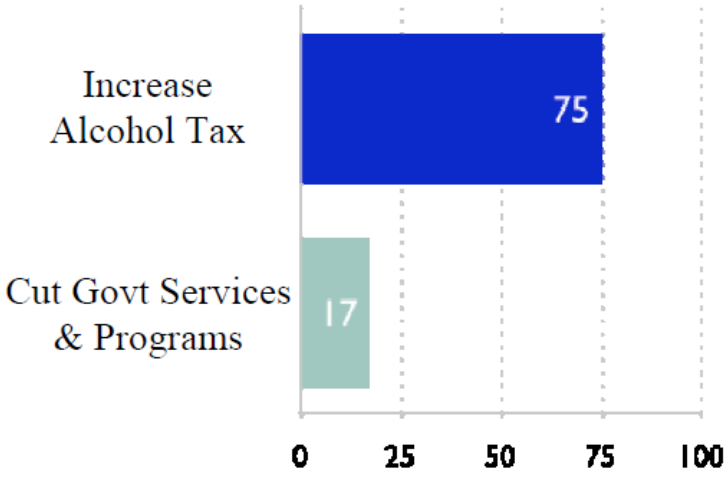
- Revenue generating potential of tax is considerable
  - SSB Tax calculator at:
  - http://www.yaleruddcenter.org/sodatax.aspx
  - Tax of one cent per ounce could generate:
    - $14.9 billion nationally if on SSBs only
    - $24.0 billion if diet included
  - Tax of two cents per ounce:
    - $21.0 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.

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

For more information:
http://www.bridgingthegapresearch.org/research/sodasnack_taxes/

Soda/Snack Taxes - Windows Internet Explorer

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

bridging the gap

Research Informing Policies and Practices for Healthy Youth

HOME | ABOUT US | RESEARCH | RELATED SITES | CONTACT US

District Wellness Policies | Elementary School Survey | Soda/Snack Taxes

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 >

Summary

Summary

- Tobacco tax increases have significantly reduced tobacco use in the US
- Similar evidence for effectiveness of higher alcoholic beverage taxes to reduce alcohol use and its consequences
  - Few governments have done so
- 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
- Adverse economic impact false or overstated

For more information:

www.bridgingthegapresearch.org

www.impacteen.org

fjc@uic.edu