



Tobacco Control Policy Research

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Overview

Overview of Bridging the Gap Tobacco Control Policies

- Cigarette Taxes
- Smoking Restrictions
- Youth Access, Possession, Purchase and Use
- Preemption and Smoker Protection Laws
- Comprehensive Tobacco Control Programs
- Marketing and Restrictions on Advertising







Bridging the Gap: Research Informing Practice for Healthy Youth Behavior

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Additional support provided by the National Cancer Institute and the Centers for Disease Control and Prevention

www.impacteen.org

Purpose of the Initiative:

- To evaluate the impact of:
 - Policies
 - Programs
 - Practices
 - Addressing various types of substances:
 - Alcohol Use
 - Illicit Drug Use
 - Tobacco Use
 - At various levels:
 - State
- School
- Community Individual

University of Michigan

Institute for Social Research

Monitoring the Future (MTF)

Youth, Education and Society (YES!)





University of Illinois at Chicago

Health Research and Policy Centers

ImpacTeen

Coordinating Center,
Community Data Collections
Polysubstance Use Research
UIC

Alcohol Policy Research Team

U of MN

Illicit Drug Policy Research Team

Andrews U and RAND

Tobacco Policy Research Team

Roswell Park

ImpacTeen Enhancements to Tobacco Research

- Three legislative tracking systems: CDC's STATE, NCI's SCLD, ALA's SLATI
- RPCI/ImpacTeen team has added or will add:
 - > Historical data will be posted on the web
 - > Information on Regulations feedback will be provided to OSH
 - > Methods work:
 - Collecting data on tobacco product prices
 - Developing systems to measure enforcement

Tobacco Policy/Legislative Data

- Tobacco Control Expenditures CDC/NCI/RTI -Since 1991
- Price Data Tax Burden on Tobacco, American Chamber of Commerce Researchers' Association, Observational Data, Scanner Data, Self-Reported Data – 1955+
- Smoke-Free Air Laws CDC, ALA, RPCI; 1991+
- Sales to Minors' Laws CDC, SLATI, MIT; 1991+
- Purchase, Possession, and Use Laws CDC, ALA,
 RPCI; 1988+

Tobacco Use Data

- Monitoring the Future Surveys 1975+
- Harvard College Alcohol Surveys–1993,1997,1999
- RWJF/A&S W Youth Surveys 1996
- Youth Risk Behavior Surveillance System 1991+
- Youth Tobacco Surveys 1998+
- National Household Survey on Drug Abuse–1999+
- State Tax-Paid Cigarette Sales 1955+

Community Data Collections

- Half-Sample of MTF Schools Cycling Out of the National Sample
 - >c. 215 Schools Per Year
 - **≻National Replicate Sample**
- Administrators in Those Schools Surveyed
- Community Data Collected From Their Catchment Areas
 - Observational Studies of Retail Outlet and Communities
 - > Key Informant Interviews in the Community
 - Local Ordinances and Regulations
 - Other Existing Archival Data
- State Level Data on Laws, Policies, and Environmental Data

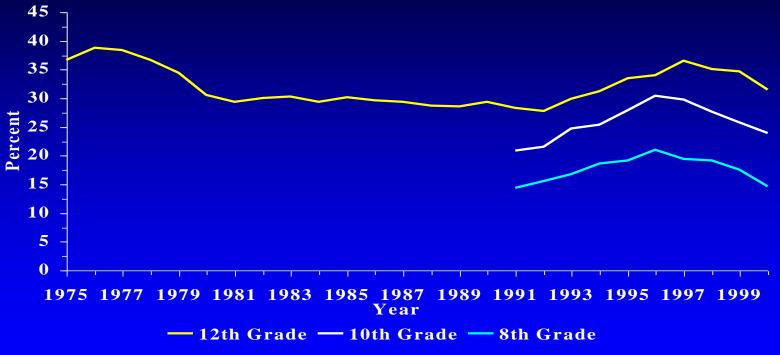
Key Informant Surveys

- ➤ Modular Approach:
 - Core Modules
 - Universal Questions
 - Demographic Module
 - Health Department
 - Police Agency
 - Police Officer
 - Coalitions

- 5 Targeted Modules
 - Youth access enforcement
 - ■Policy/media advocacy
 - Public education
- Ordinance FeedbackModules
 - Youth Tobacco Possession
 - Keg Registration
 - Curfews
 - Inhalants
 - Drug Paraphernalia
 - Medical Marijuana

Background





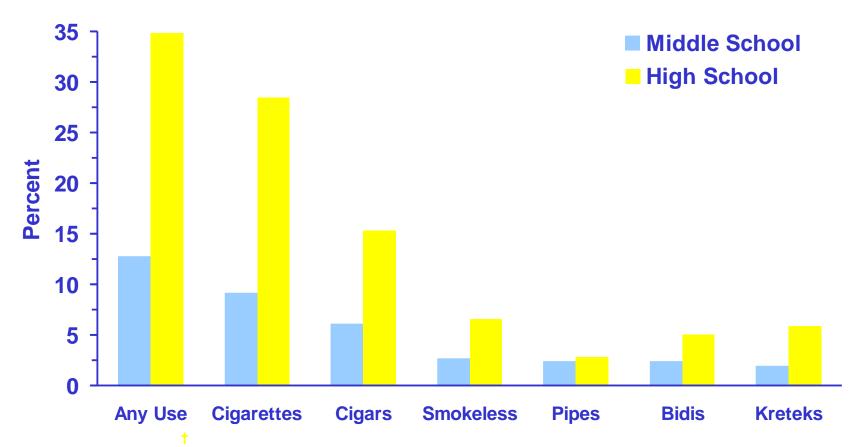
Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

*Smoking 1 or more cigarettes during the previous 30 days



Background

Current* use among middle and high school students by type of tobacco product— National Youth Tobacco Survey, 1999

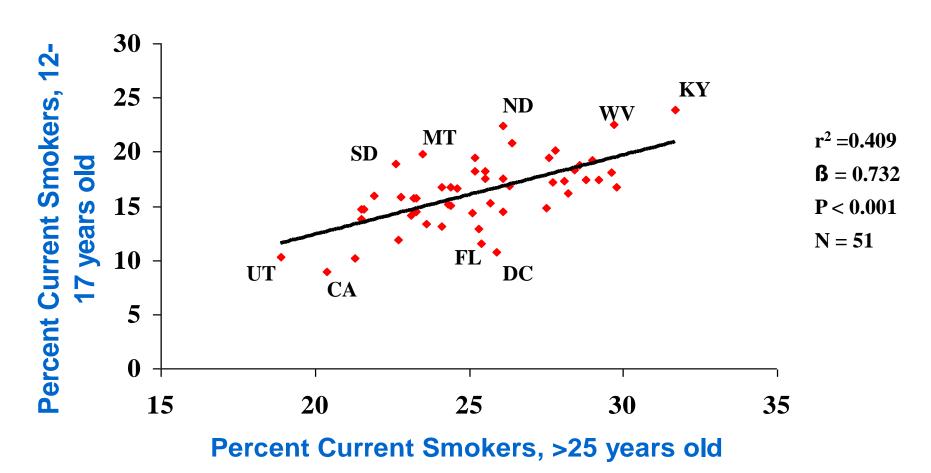


^{*} Used tobacco on 3 1 of the 30 days preceding the survey.

[†] Use of cigarettes, smokeless, cigars, pipes, Bidis, or Kreteks.

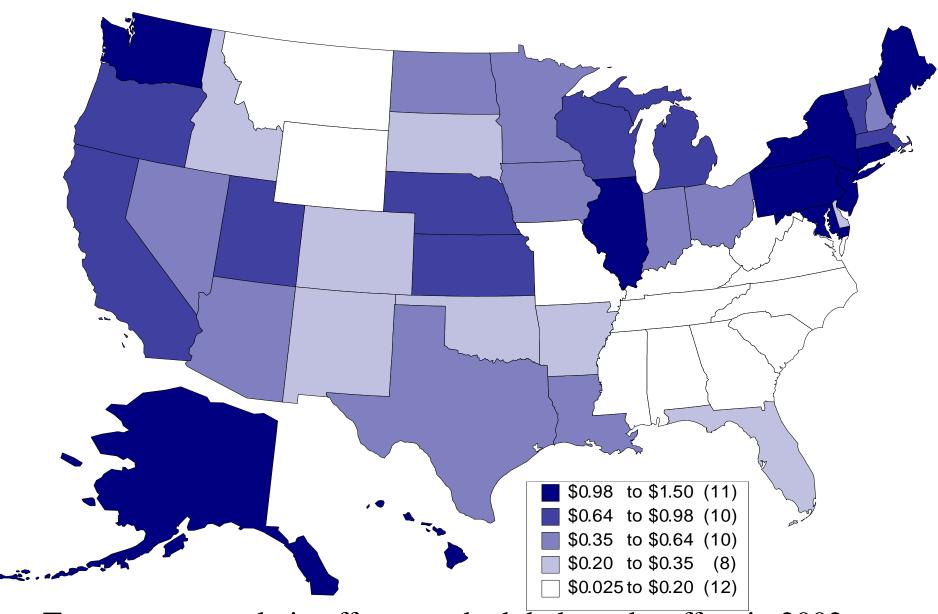


Smoking Prevalence Among Youths Aged 12-17 Years Old and Adults Aged ≥26 Years Old in All 50 States and the District of Columbia, 1999 NHSDA



Note: Current smokers were persons who smoked on \geq 1 day during the previous 30 days Source: 1999 National Household Survey on Drug Abuse

State Cigarette Excise Taxe

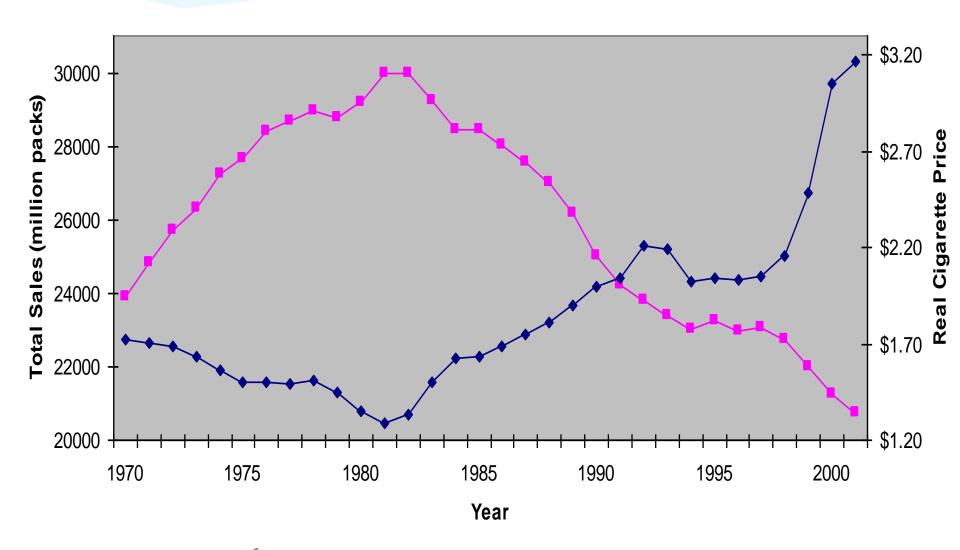


Tax rates currently in effect or scheduled to take effect in 2002 Source: Eric Lindblom, National Center for Tobacco Free Kids

Tobacco Taxes and Tobacco Use

- Higher taxes induce quitting, prevent relapse, reduce consumption and prevent starting.
 - Estimates indicate that 10% rise in price reduces overall smoking by about 4%
 - About half of impact of price increases is on smoking prevalence
 - Recent estimates for young adult smokers indicate that 10% price rise would raise probability of quitting smoking by over 3%
 - Because of addictive nature of smoking, long term effects of tax and price increases are larger

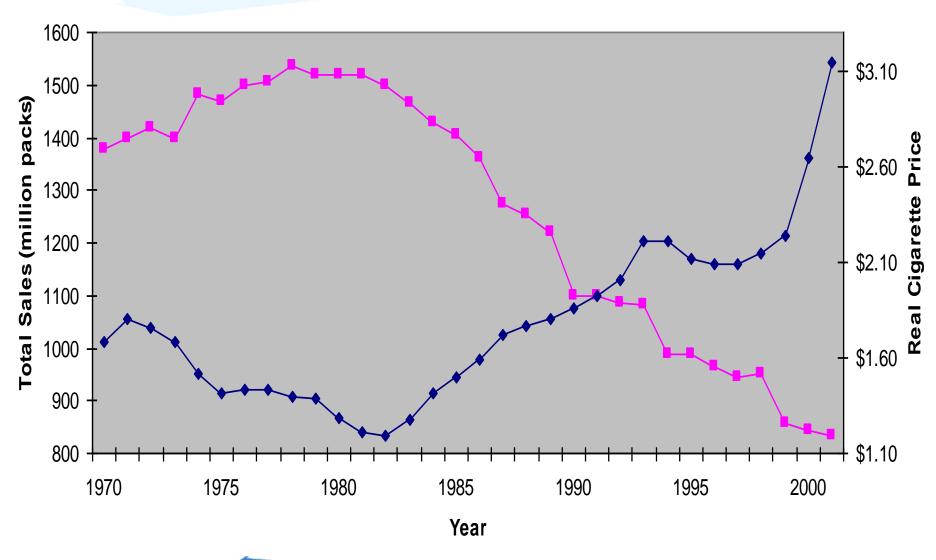
Total Cigarette Sales and Cigarette Prices, 1970-2001





- Cigarette Sales (million packs) → Real Cigarette Price

Total Cigarette Sales and Cigarette Prices, Illinois, 1970-2001





Lower SES populations are the most price responsive

- Growing international evidence shows that cigarette smoking is most price responsive in lowest income countries
 - •Evidence from U.S. and U.K. shows that cigarette price increases have greatest impact on smoking among lowest income and least educated populations
 - •In U.S., for example, estimates indicate that smoking in households below median income level about 70% more responsive to price than those above median income level

Source: Chaloupka et al., 2000

YOUNG PEOPLE MORE REPSONSIVE TO PRICE INCREASES

- Proportion of disposable income youth spends on cigarettes likely to exceed corresponding portion of adult's income
- Peer influences much more important for young smokers than for adult smokers
 - Young smokers less addicted than adult smokers
 - Young people tend to discount the future more heavily than adults

Because kids are highly sensitive to price, and given that 90 percent of smokers start when they are 18 or younger, an increase in excise taxes appears to be one of the best ways to deter them from taking up cigarettes in the first place.



CIGARETTE PRICES AND KIDS

YOUTH

A 10% Increase in Price Reduces Smoking Prevalence Among Youth by nearly 7%

A 10% Increase in Price Reduces Conditional Demand Among Youth by over 6%

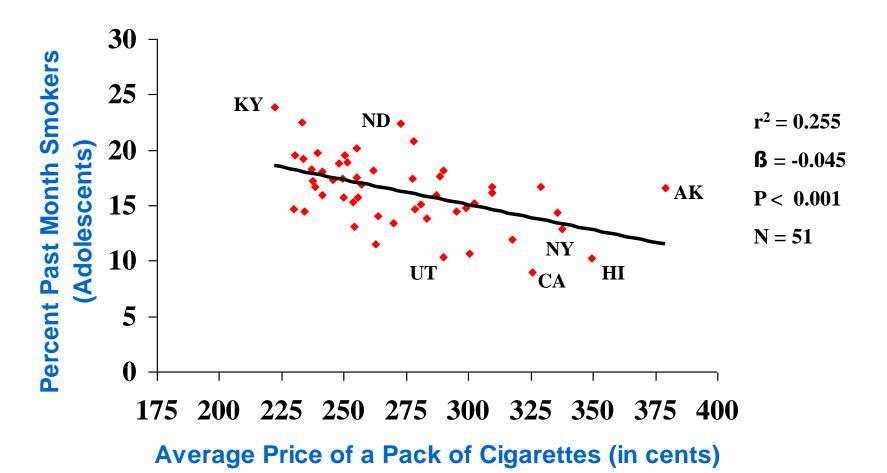
Higher cigarette prices are associated with substantially reducing adolescents' probability of becoming daily, addicted smokers, helping prevent moving from lower to higher stages of smoking.

- 10% price increase reduces probability of any initiation by about 3%, but reduces probability of daily smoking by nearly 9% and reduces probability of heavy daily smoking by over 10%
- YOUNG ADULTS (College Students)

A 10% Increase in Price Reduces Smoking Prevalence Among Young Adults by about 5%

A 10% Increase in Price Reduces Conditional Demand Among Young Adults by another 5%

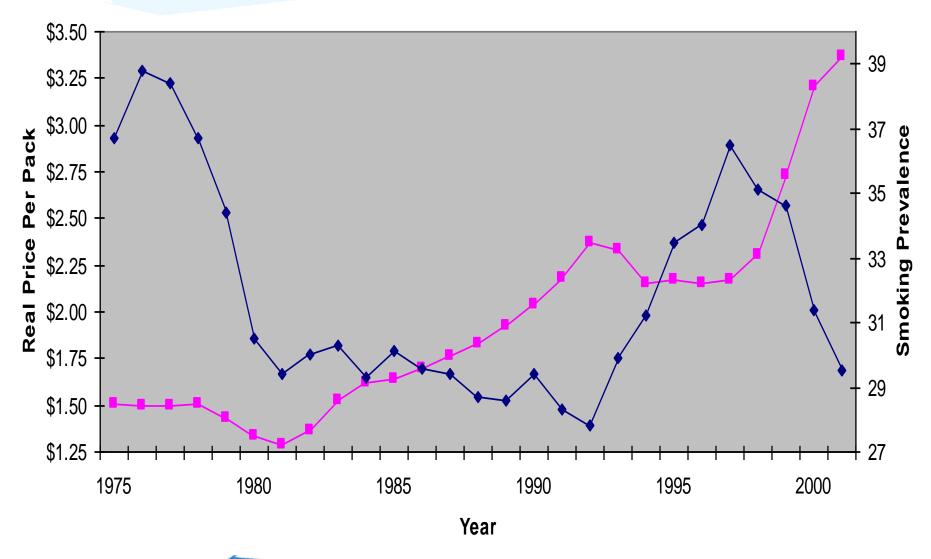
Cigarette Smoking Among Youth by the Average Price of a Pack of Cigarettes in 50 States and the District of Columbia, 1999



Sources: 1999 NHSDA (12-17 year olds); 1999 Tax Burden On Tobacco

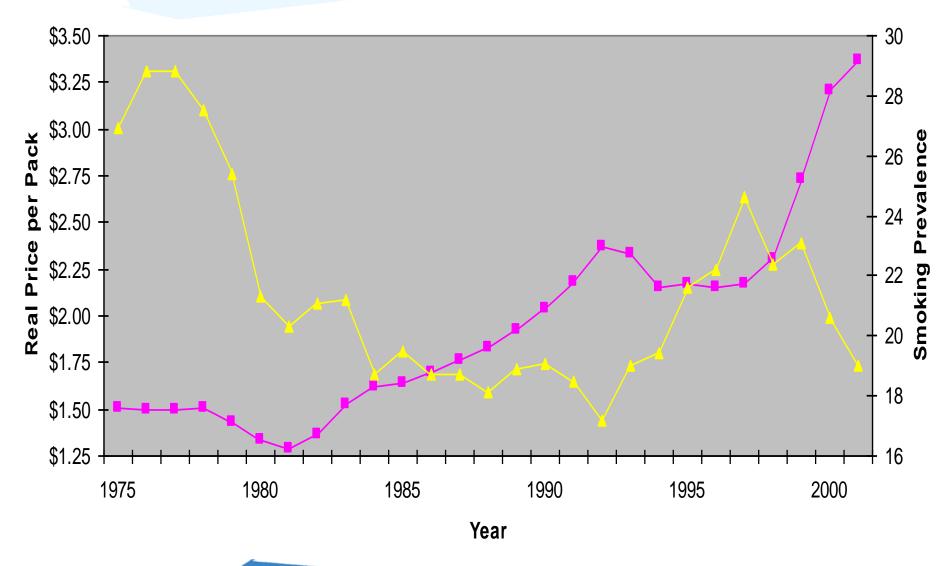
Note: Past Month Smoking = smoking on \geq 1 day during the previous 30 days

12th Grade 30 Day Smoking Prevalence and Price





12th Grade Daily Smoking Prevalence and Price





NEW YORK: \$1.11 Per Pack

Preliminary Findings on the Impact of March 2000 55-Cent Increase in Cigarette Excise Tax

Cigarette Price Increases

NY: Marlboro- \$1.00 (30.7%); Newport - \$1.00 (31.0%)

US: Marlboro - 33 cents (11.5%); Newport 31 cents (10.2%)

Cigarette Sales

Sales have dropped about 20 percent since the increase.

Smoking Prevalence

(NY matched schools, after 4/1; US all schools after 4/1)

8th Grade - NY: -17.8%; US: - 11.2%

10th Grade - NY: -18.9%; US: -1.0%



Myths About Impact of Tobacco Taxation

REVENUE LOSSES?

Revenues actually rise with taxes, particularly in lowest tax states where taxes comprise relatively low share of prices; average revenue increases from 10% tax increase would exceed 7%

JOB LOSSES?

Temporary, minimal, and gradual; most state/regions would benefit in short and long run from the reduced tobacco sales resulting from higher tobacco taxes as money once spent on cigarettes is spent on other goods and service.

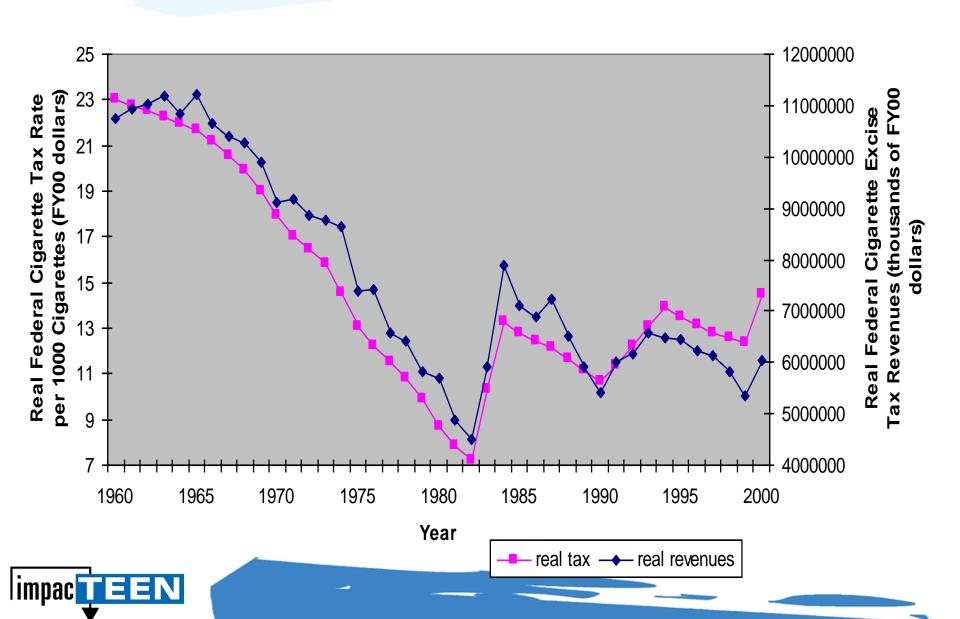
POSSIBLE SMUGGLING

Generally overstated; appropriate solution is to crack down on criminal activity, not forego the benefits of higher tobacco taxes.

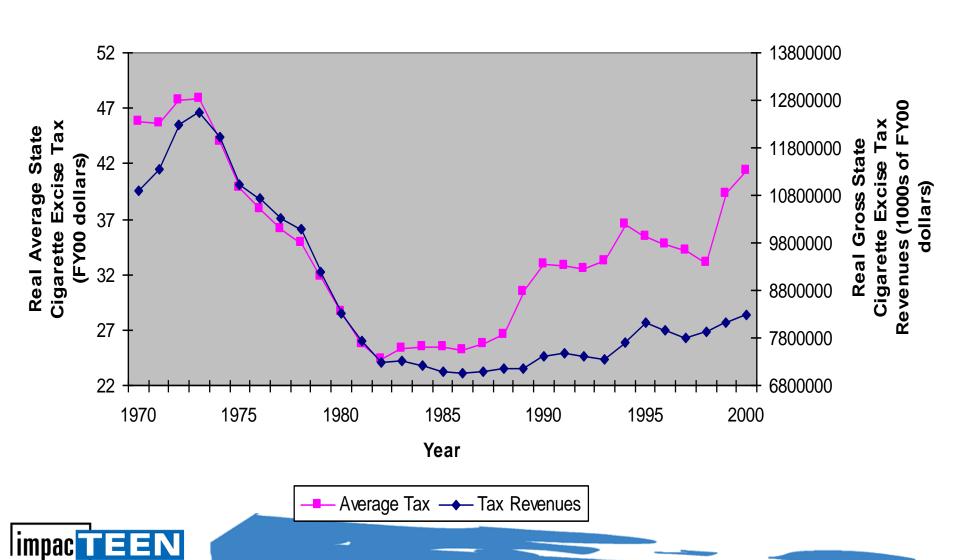
•COST TO INDIVIDUALS, ESPECIALLY THE POOR

Partially offset by lower consumption; can be offset by using additional tax revenues to finance programs targeting low-income populations

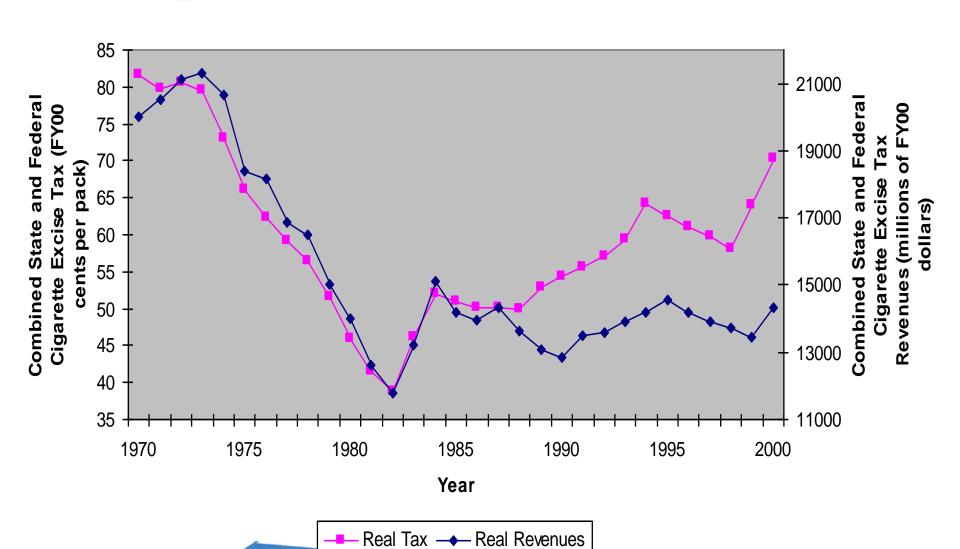
Real Federal Cigarette Tax Rate and Tax Revenues



Real Average State Cigarette Excise Tax Rate and Real State Cigarette Tax Revenues



Real Average Cigarette Excise Tax and Real Cigarette Tax Revenues



impac TEEN

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Studies on the employment effects of dramatically reduced or eliminated tobacco consumption

Type of country	Name and year	Net change as % of economy in base year given
Net Exporters	US (1993)	0%
	UK (1990)	+0.5%
	Zimbabwe (1980)	-12.4%
Balanced Tobacco Economies	South Africa (1995)	+0.4%
	Scotland (1989)	+0.3%
Net Importers	Bangladesh (1994)	+18.7%

Source:Buck and others, 1995; Irvine and Sims, 1997; McNicoll and Boyle 1992, van der Merwe and others, background paper; Warner and others 1996

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Smuggling of Cigarettes

- Industry has economic incentive to smuggle
 - Increase market share and decrease tax rates
- Best estimate: 6 to 8.5% of total consumption
- Non-price variables important
 - Perceived level of corruption more important than cigarette prices
- Tax increase will lead to revenue increase, even in the event of increased smuggling

Source: Merrriman et al. 2000; Joosens, 2000; BAT,1998

Myths About Impact of Tobacco Taxation

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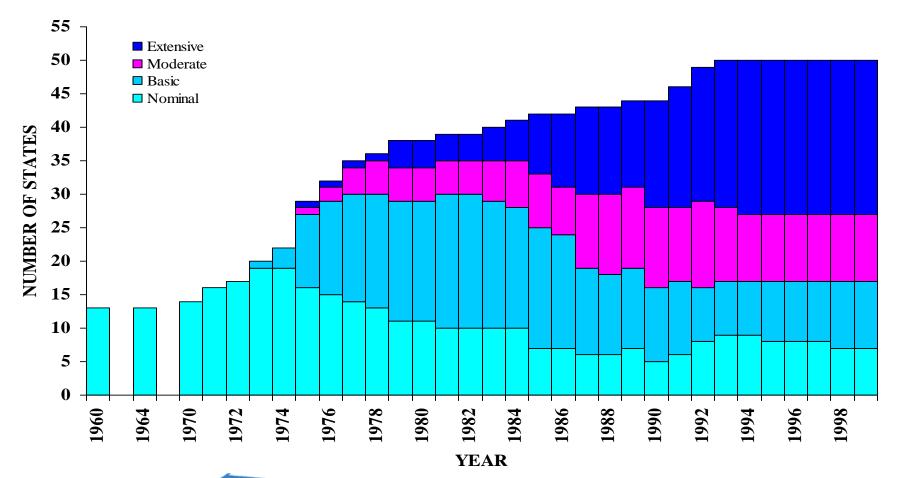
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Tobacco Policy Data

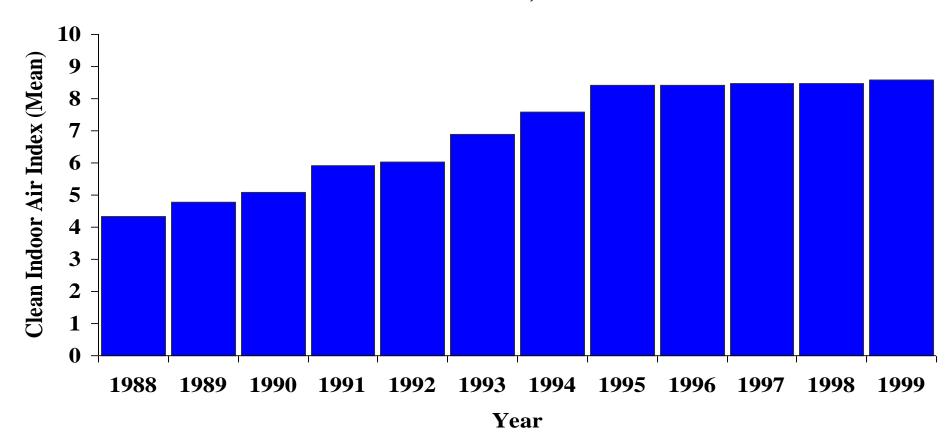
Restrictiveness Of State Laws Regulating Smoking In Public Places
– U.S., 1960-1999





Tobacco Policy Data

Mean Comprehensiveness of State Laws Regulating Smoking In Public Places – U.S., 1960-1999

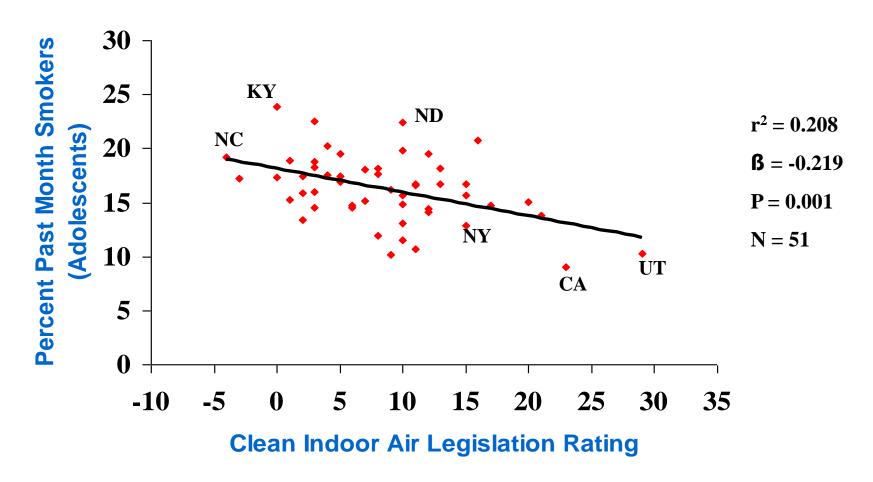




Research – Smoking Restrictions

- Stronger and more comprehensive restrictions on smoking reduce smoking prevalence, increase smoking cessation, and reduce cigarette use among continuing smokers
 - Workplace restrictions particularly important in promoting cessation among adults
 - Consistent evidence that restrictions on smoking in public places also reduce smoking among youth and young adults
 - Strong evidence that restrictions on smoking at home significantly reduce the probability of youth smoking, smoking uptake, and youth cigarette consumption

Cigarette Smoking Among Youth by the Clean Indoor Air Legislation Rating in 50 States and the District of Columbia, 1999



Sources: 1999 NHSDA (12-17 year olds); ALA's SLATI, CDC's STATE system, and the Roswell Park Cancer Institute.

Note: Past Month Smoking = smoked on \geq 1 day in the previous 30 days

Possession, Use, and Purchase Laws

- > Penalize minors, not vendors
- States want to avoid criminal record for offender (Teen Court or Peer Court)
- > Penalties include:
 - Fines -- most common
 - range as high as \$750 (some graduated)
 - majority **≤** \$100

Other penalties in lieu of or in addition to fines:

- Community Service
- Smoking Education Classes
- Smoking Cessation Classes
- Driver's License Suspension



LOCAL ENFORCEMENT

Local communities indicate that the following are typical actions taken when a minor is caught possessing tobacco:

- ✓ Citation issued
- ✓ Notification of parents
- ✓ Warning issued
- ✓ Appearance in peer or teen court

Local communities indicate that the following are typical penalties imposed when a minor is caught possessing tobacco (2001):

- √ Fines (65%)
- ✓ Community service (19%)
- ✓ Participation in Tobacco Cessation Program (15%)
- ✓ Counseling (12%)

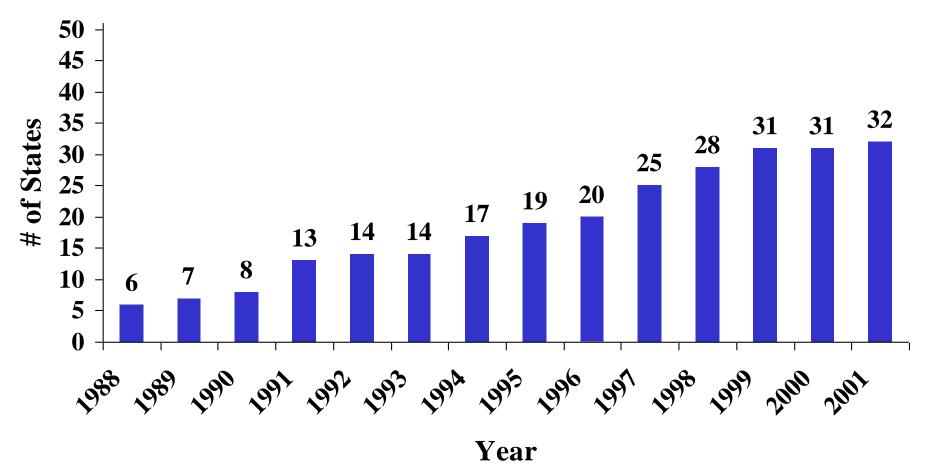
Arguments In Favor of PUP Laws

- ➤ Promote Accountability, Personal Responsibility Vendors Shouldn't be Liable
- ➤ Add a Cost to Tobacco Use
- Can be Used by Law Enforcement Officers to Inspect Suspicious Youths - May Reduce Crime Rate
- > Send a Message That Adults Mean What They Say
- ➤ Alcohol Experience minimum age increase (to 21 years old) has reduced drinking and saved lives

Arguments Against PUP Laws

- > Youths are Enticed to Smoke by Marketing, Only to Be Punished for Wanting the Promoted Product
- ➤ Enforcement Costs; May Reduce STM Enforcement
- > Profiling
- ➤ Youth Focus Diverts Attention/Resources From Effective Tobacco Control Efforts
- Kids Rebel
- > Age-aspiration Means Adult Status is Attractive
- Efficacy of Sales to Minors Laws in Doubt

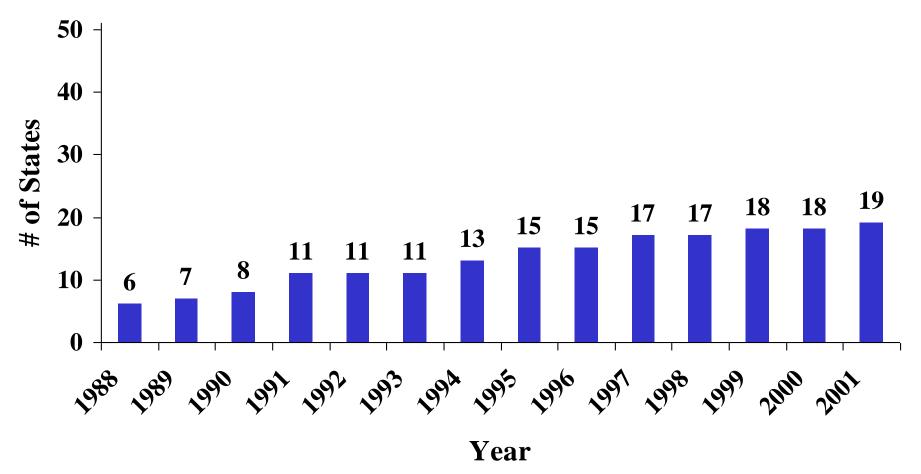
Number of U.S. States including D.C.*, with Legislation Restricting Possession of Cigarettes to Persons aged >18 years, 1988-2001



*District of Columbia

Source: "State Legislated Actions On Tobacco Issues", 1988-2001, CDC's STATE system, Roswell Park Cancer Institute.

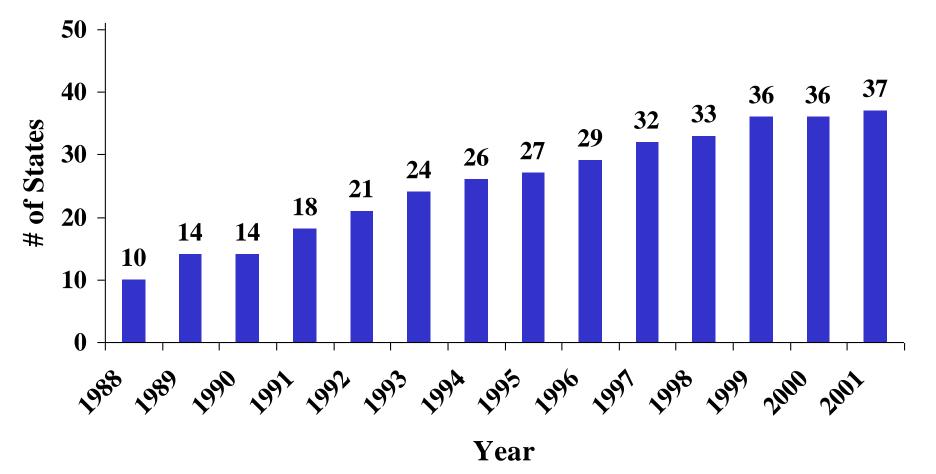
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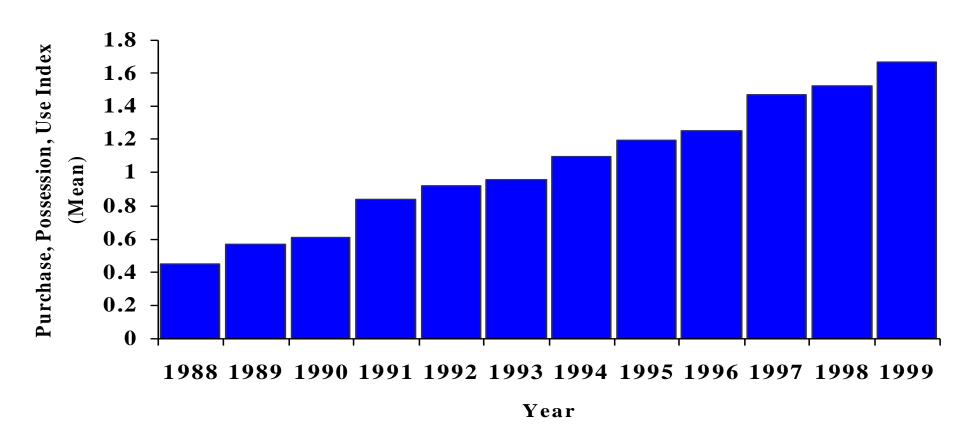


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Tobacco Policy Data

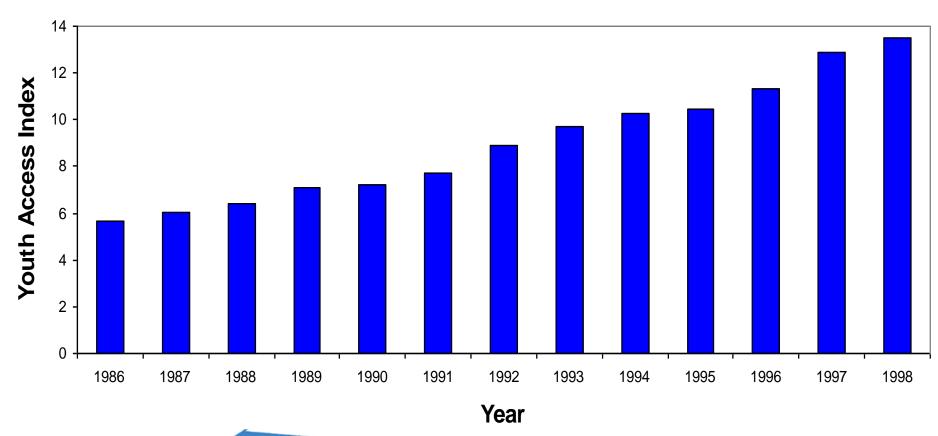
Mean Number of Purchase, Possession, and Use Laws per State* -- United States, 1988-1999



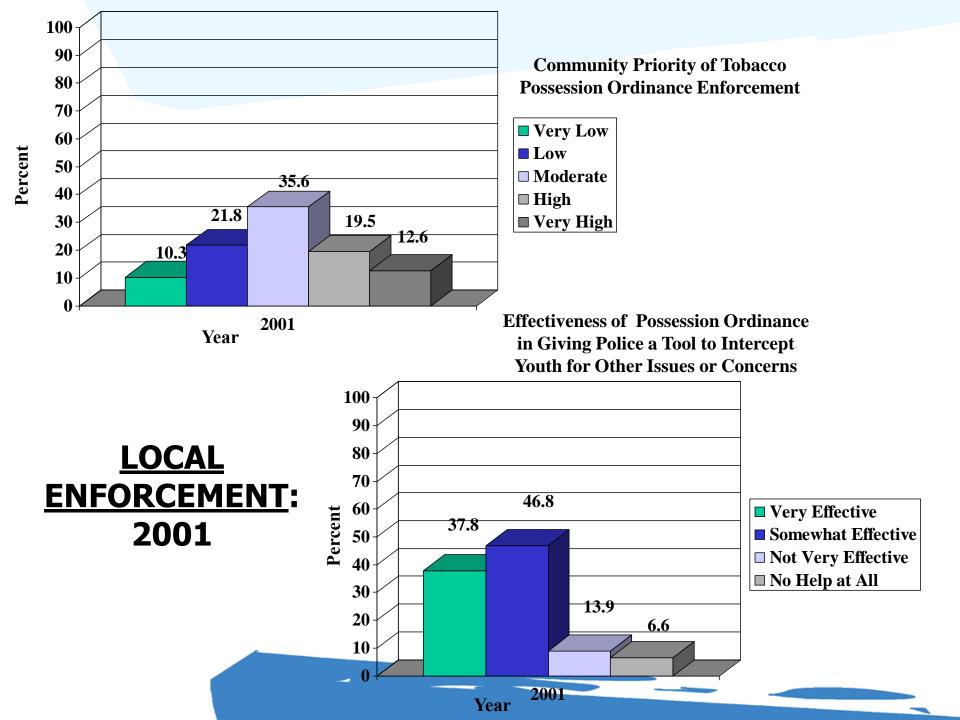


Tobacco Policy Data

Restrictiveness of State Laws Limiting Youth Access to Tobacco

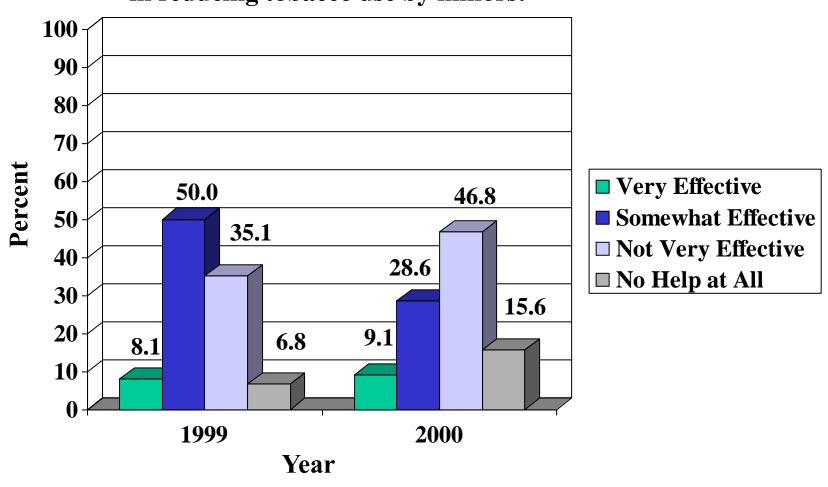






LOCAL PERCEPTIONS

Effectiveness of Possession Ordinance in reducing tobacco use by minors:

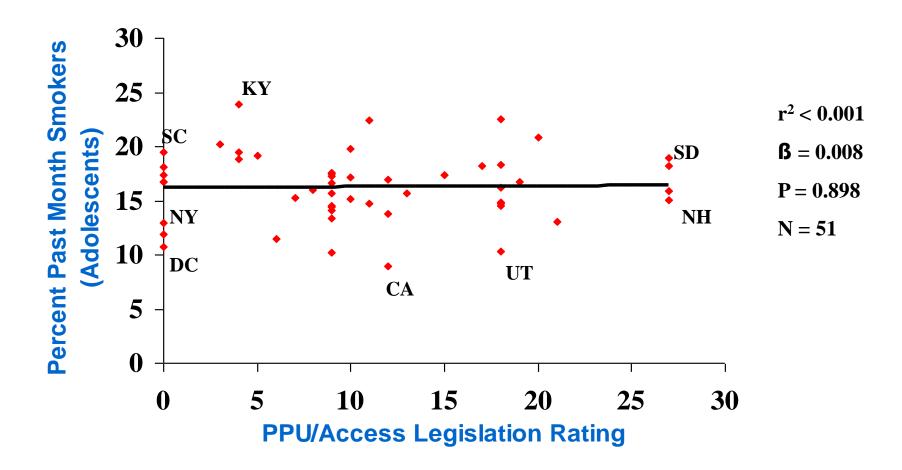


Results – Youth Access Restrictions

- Generally little evidence that restrictions on youth access to tobacco products reduce youth smoking
 - likely due to the generally poor enforcement of these laws
- Growing evidence that increased retailer compliance with limits on youth access (resulting from stronger enforcement) leads to significant reductions in youth smoking prevalence and consumption
 - little impact on youth experimentation
 - impact increases as youth progress to more regular smoking
- Some weak evidence that combination of policies prohibiting youth purchase, possession and use of tobacco products lead to significant reductions in youth smoking
 - effect appears largest on lowest risk youth



Cigarette Smoking Among Youth by the Historical PPU Legislation Rating in 50 States and the District of Columbia, 1999



Sources: 1999 NHSDA (12-17 year olds); ALA's SLATI, CDC's STATE system, and the Roswell Park Cancer Institute

Note: Past Month Smoking = smoked on \geq 1 day during the previous 30 days Historical PPU Legislation Rating = Sum of PPU laws for previous 8 years (0 = no law; 1 = law present)

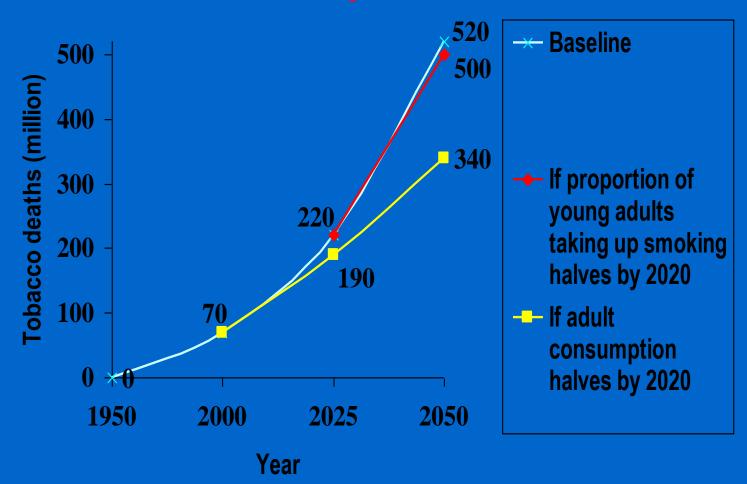
Compliance Check Analysis

- Draws on data from FDA compliance checks done from 1998 through early 2000
 - over 100,000 initial checks
 - control for conditions of check, store characteristics
- > Data on state policies matched based on store location
 - Includes sales to minors policies and policies limiting youth purchase, use, or possession
- > Data on community population characteristics added based on store zip code

Compliance Check Analysis Results

- > Compliance more likely in states with more comprehensive restrictions on sales to minors
- ➤ Compliance less likely in rural, low-income, and/or minority neighborhoods
 - ➤ Compliance not significantly related to state policies limiting youth purchase, use, or possession of tobacco products
 - weak evidence that compliance is higher in states with these policies

Unless current smokers quit, smoking deaths will rise dramatically over the next 50 years

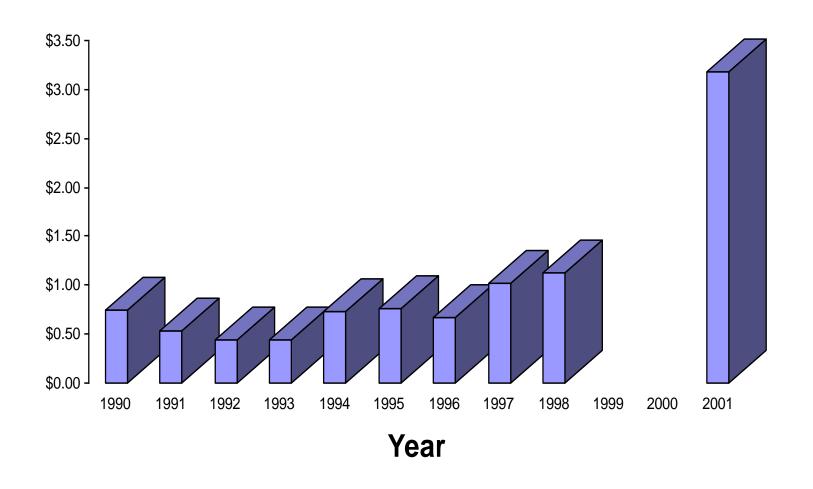


Source: Peto and Lopez, 2000

Research – Preemption and Smoker Protection Laws

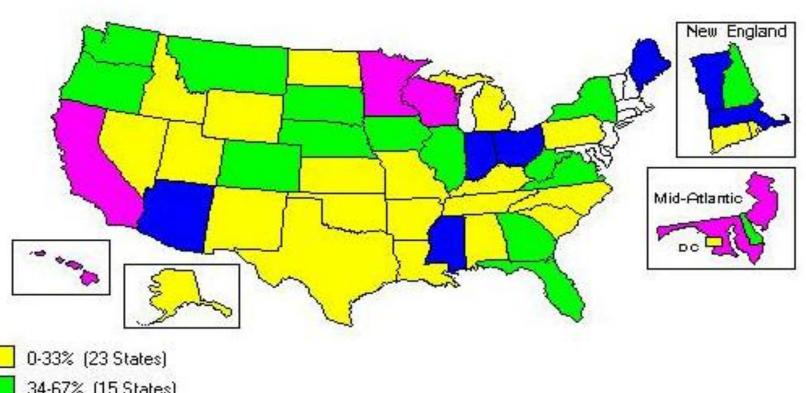
- Growing evidence that state preemption of stronger local tobacco control ordinances results in greater smoking among youth and adults
 - Evidence that smoker protection laws result in higher youth smoking prevalence, likely due to the more favorable social norms about smoking reflected by these laws

Per Capita Tobacco Control Spending



Per capita spending figures in July 2001 dollars

State Tobacco Control Funding as Percentage of CDC Minimum, 2001



34-67% (15 States)

68-99% (6 States)

equal or greater than 100% (7 States)

Source: Centers for Disease Control and Prevention

Source: CDC

CALIFORNIA: 87-Cents Per Pack

California's tobacco control program began in January 1989, when the excise tax was increased from \$0.10 to \$.35 per pack of cigarettes. On November 3, 1998 California voters approved Proposition 10, a measure that increased the state tax on cigarettes by 50 cents per pack starting January 1, 1999, to a total of 87 cents tax per pack. The increase made California's tax per pack of cigarettes the fourth highest amongst the states - only New York's, Hawaii's, and Alaska's taxes are greater.

Initially, Consumption Decreased Rapidly

Initially, following the 1989 excise tax increase, consumption decreased rapidly.

Further Decline Throughout the 1990's

Overall tobacco use in California declined throughout the 1990s at a rate two or three times faster than that in the rest of the country. Between 1988 and 1999, per capita cigarette use in California declined by almost 50%, while in the rest of the country it declined by only about 20%.

Prevalence Among Youth Declined

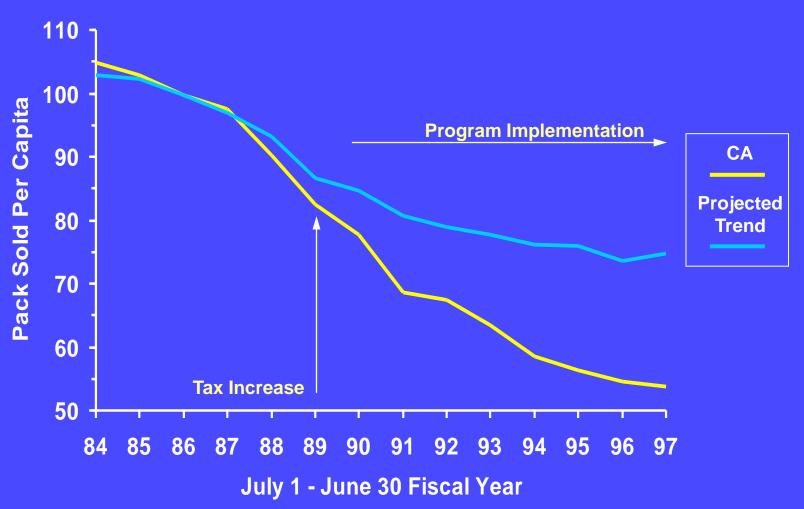
Between 1995 and 1999, the prevalence of cigarette use among youth dropped by 43% in California.

Tobacco-Related Deaths Reduced

By virtue of its duration and intensity, the California program also has the distinction of being the first program to demonstrate a reduction in tobacco-related deaths.

Source: Investment in Tobacco Control: State Highlights 2001; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease prevention and health Promotion, Office on Smoking and Health.

Per Capita Consumption Trends California versus Projected Trend, 1984-1997



Source: CDC

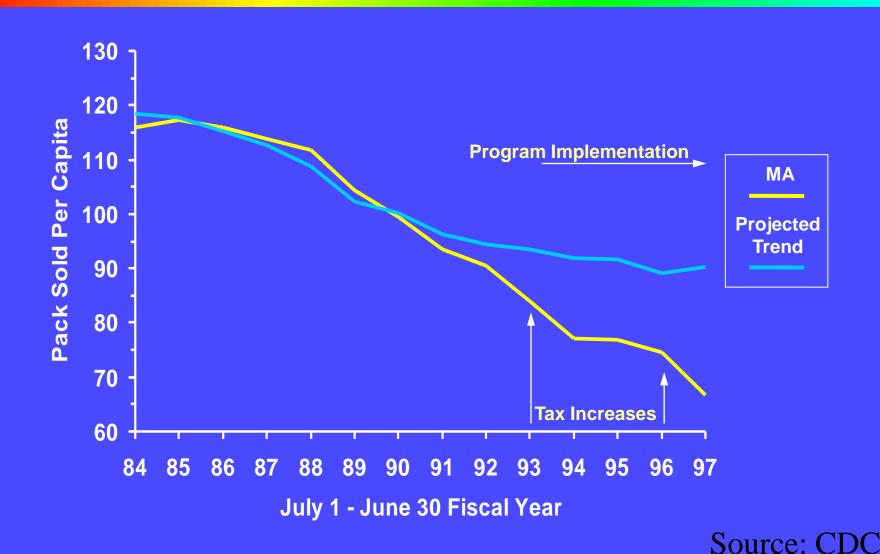
MASSACHUSETTS: 76-Cents Per Pack

The Massachusetts Tobacco Control Program (MTCP) was created through a statewide referendum held in November 1992 and is entirely funded by a tax on cigarettes and smokeless tobacco products. Since its introduction through June 1999, program successes include:

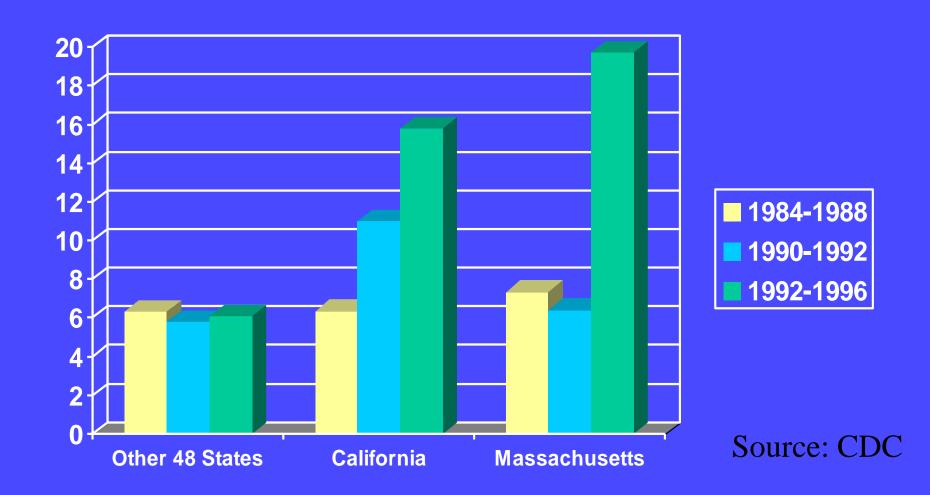
- •Massachusetts has seen more rapid declines than states without tobacco control programs in the overall prevalence of tobacco use among adults.
- •More recently, rates of smoking among Massachusetts youth have declined sharply, with current smoking dropping 70% among 6th graders from 1996 to 1999.
- •Cigarette consumption has fallen by 33%, while consumption in the rest of the country declined just 10%
- The number of adult smokers has declined
- •Smoking during pregnancy dropped sharply, from 25% to 13%
- •Youth smoking rates in Massachusetts from 1996-1999 have declined at a greater rate than the rest of the country
- •The number of smokers planning to quit has increased, and those who try to quit are more successful.

Source: State of Massachusetts, Department of Public Health

Per Capita Consumption Trends Massachusetts versus Projected Trend, 1984-1997



Change in Per Capita Cigarette Consumption Before and After an Excise Tax Increase and an Antismoking Campaign California & Massachusetts versus Other 48 States, 1986 to 1996



New Econometric Research – Comprehensive State Programs

- Data on expenditures on various tobacco control programs, including: NCI's ASSIST program, CDC's IMPACT program, RWJF's SmokeLess States program, and state programs funded by earmarked tobacco taxes or tobacco settlement funds
 - Data on overall smoking patterns based on tax paid statelevel cigarette sales per capita
 - Data on youth smoking prevalence and consumption from Monitoring the Future Surveys of 8th, 10th, and 12th grade students, 1991-1998, and CDC's National Youth Risk Behavior Surveys, 1991-1999

Research Findings – Comprehensive Programs and State Cigarette Sales

• Higher spending on tobacco control efforts significantly reduces overall cigarette consumption

Elasticity estimates for current year spending center on –0.006; estimate for cumulative spending: –0.025

- Marginal impact of tobacco control spending greater in states with higher levels of cigarette sales per capita; average impact significantly higher in states with larger programs
 - Disaggregated program spending suggests that impact of spending on programs focusing on policy change is greater than spending on other programs

Sources: Farrelly, et al. 2001; Liang et. al 2001

Research Findings – Comprehensive Programs and Youth Smoking

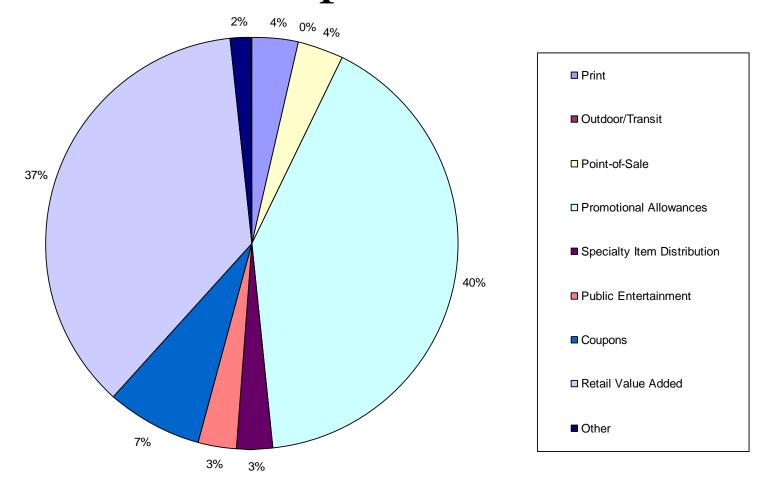
• Higher spending on tobacco control efforts significantly reduces youth smoking prevalence and cigarette consumption among young smokers

Elasticity estimate for youth smoking prevalence: -0.011; estimate for conditional demand: -0.012 (MTF data)

- Estimated impact of spending at CDC recommended levels: minimum: 7.7% reduction in youth smoking prevalence; maximum: 22.2% reduction
 - Estimates based on YRBS data suggest that greatest impact of spending on tobacco control programs is on earlier stages of youth smoking uptake

Sources: Farrelly, et al. 2001; Chaloupka et. al 2001

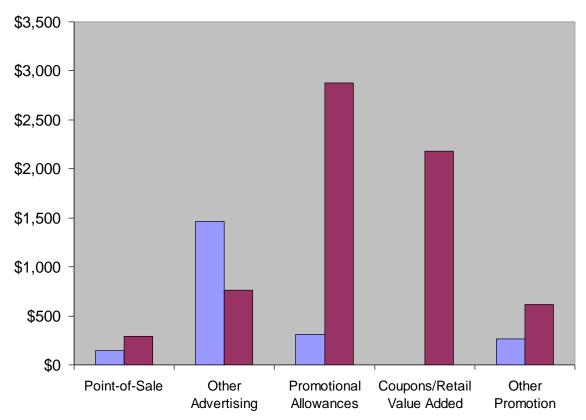
US Cigarette Advertising and Promotional Expenditures, 2000



Source: Federal Trade Commission (2002), Report to Congress Pursuant to the Federal Cigarette Label and Advertising Act, 2000

Cigarette Advertising and Promotion, 1978-2000

(millions of 2000 dollars)



Source: Federal Trade Commission (2002), Report to Congress Pursuant to the Federal Cigarette Label and Advertising Act, 2000, and author's calculations







Advertising and Tobacco Use

- "Logical Arguments" imply that increased advertising increases tobacco use
- Substantial evidence from survey research and experiments concludes that:
 - cigarette advertising captures attention and is recalled
 - strength of interest is correlated with current or anticipated smoking behavior and initiation

Advertising and Tobacco Use

- Other Empirical Research:
 - Youth who own tobacco company promotional items more likely to become smokers (Pierce, et al. 1998; Biener & Siegel 2000; Sargent et al. 2000)
 - Youth smoking much more responsive to advertising than adult smoking (Pollay, et al. 1996)
 - Econometric studies generally find small or negligible impact of advertising on overall cigarette sales (Chaloupka and Warner 2000; Saffer 2000)
 - Econometric methods poorly suited for detecting impact of advertising on demand

Restrictions on Advertising and Tobacco Use

 Relatively comprehensive restrictions on advertising and promotion significantly reduce cigarette consumption

 estimate more than a 6 percent reduction in consumption in response to comprehensive ban

Sources: Saffer (2000); Chaloupka and Warner (2000); Saffer and Chaloupka (2000)

Restrictions on Advertising and Tobacco Use

• Limited/partial restrictions on advertising and promotion have little or no impact on cigarette consumption

induce substitution to other media and new promotional efforts

1999 Cigarette Billboard Ban

- ImpacTeen in field as cigarette billboards came down under Master Settlement Agreement
 - > Found:
 - multipack discounts, gifts with purchase, cents off coupons more likely after billboard ban
 - exterior and interior store advertising more pervasive after billboard ban
 - functional objects more frequent after billboard ban
- Will the same happen in 2002 as major cigarette companies pull out of magazines?

Tobacco Marketing and Community Characteristics

- Link data on local population characteristics to store observation data at census block group level
 - > Find that tobacco company marketing efforts vary with respect to key community characteristics
 - Marlboro prices significantly lower in neighborhoods with greater youth and young adult populations
 - cigarettes more likely to be available for self service in neighborhoods with larger youth population
 - more interior and exterior cigarette advertising in lowincome neighborhoods
- •Earlier analysis found more advertising/promotion in states with comprehensive programs

Tobacco Marketing and Youth Smoking

- Link data on point-of-purchase tobacco company marketing efforts with aggregated MTF data on youth smoking behavior
 - > Preliminary findings from 1999 data suggest:
 - Youth smoking prevalence is inversely related to cigarette prices
 - Cigarette consumption by young smokers is inversely related to price
 - Cigarette consumption by young smokers is higher when tobacco company promotions are more prevalent





Conclusions

- Substantial increases in excise taxes on cigarettes and other tobacco products significantly reduce the prevalence of tobacco use and, as a result, sharply reduce the public health toll caused by tobacco use.
- Comprehensive set of tobacco control policies and comprehensive approach to tobacco control lead to large reductions in youth and adult cigarette smoking, other tobacco use, and the death and disease caused by smoking.

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