

Why is Tobacco Price Manipulation a Problem? Point-of-Sale Marketing and Cigarette Smoking

Frank J. Chaloupka

Director, ImpacTeen Project and
International Tobacco Evidence Network

fjc@uic.edu

www.impactteen.org

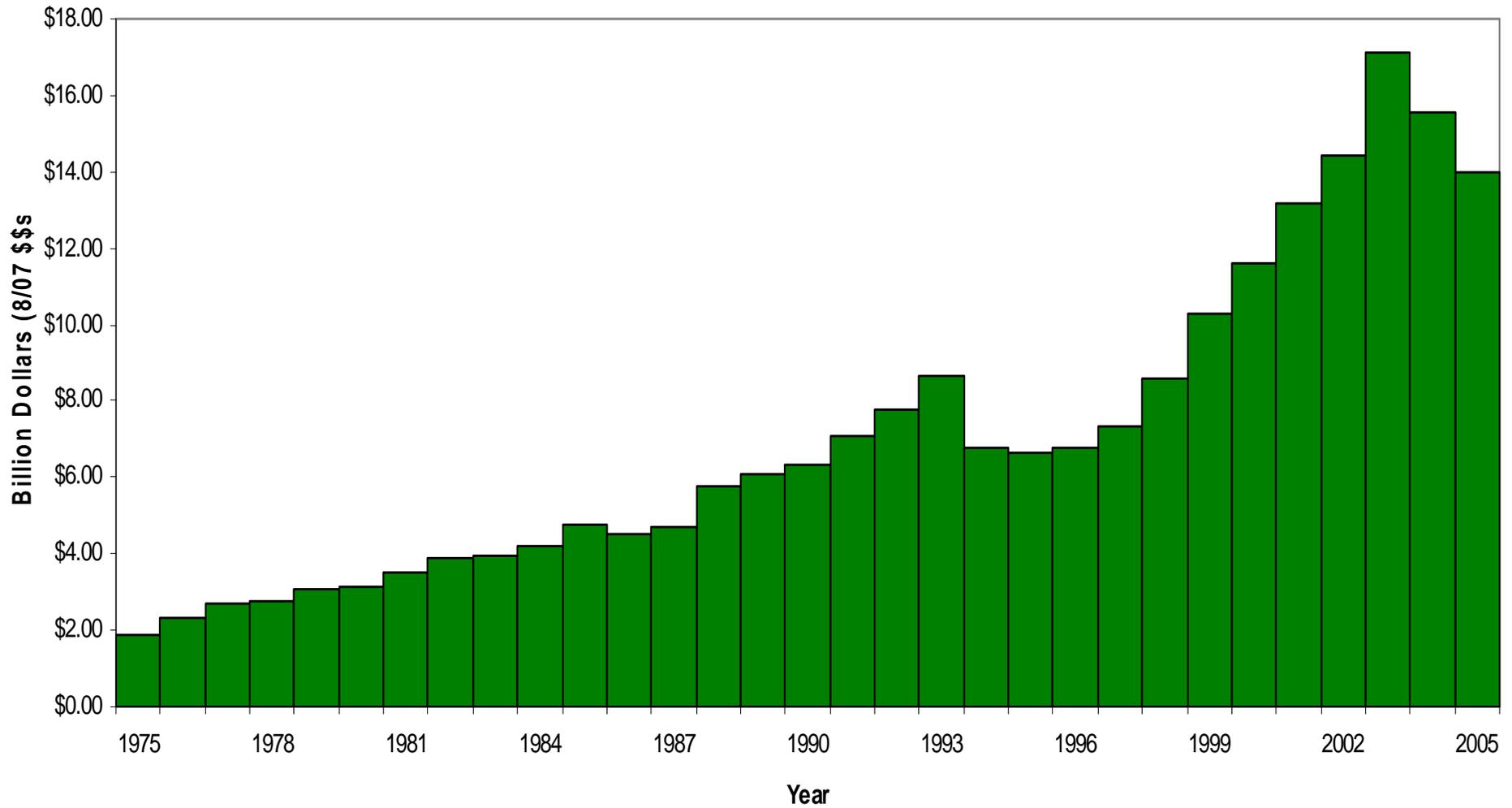
www.tobaccoevidence.net

Summit to Identify Policy Strategies to Address
Retail Tobacco Price Manipulation
San Francisco, CA May 29, 2008

Overview

- Brief review of recent trends in cigarette company marketing expenditures and impact on price
- Brief review of literature on impact of cigarette marketing on youth and adult cigarette smoking
- Effects of POS cigarette marketing on youth smoking uptake
 - Focus on recent *Archives of Pediatrics & Adolescent Medicine* paper by Slater et al. (2007)

Cigarette Marketing Expenditures Inflation Adjusted, 1975-2005

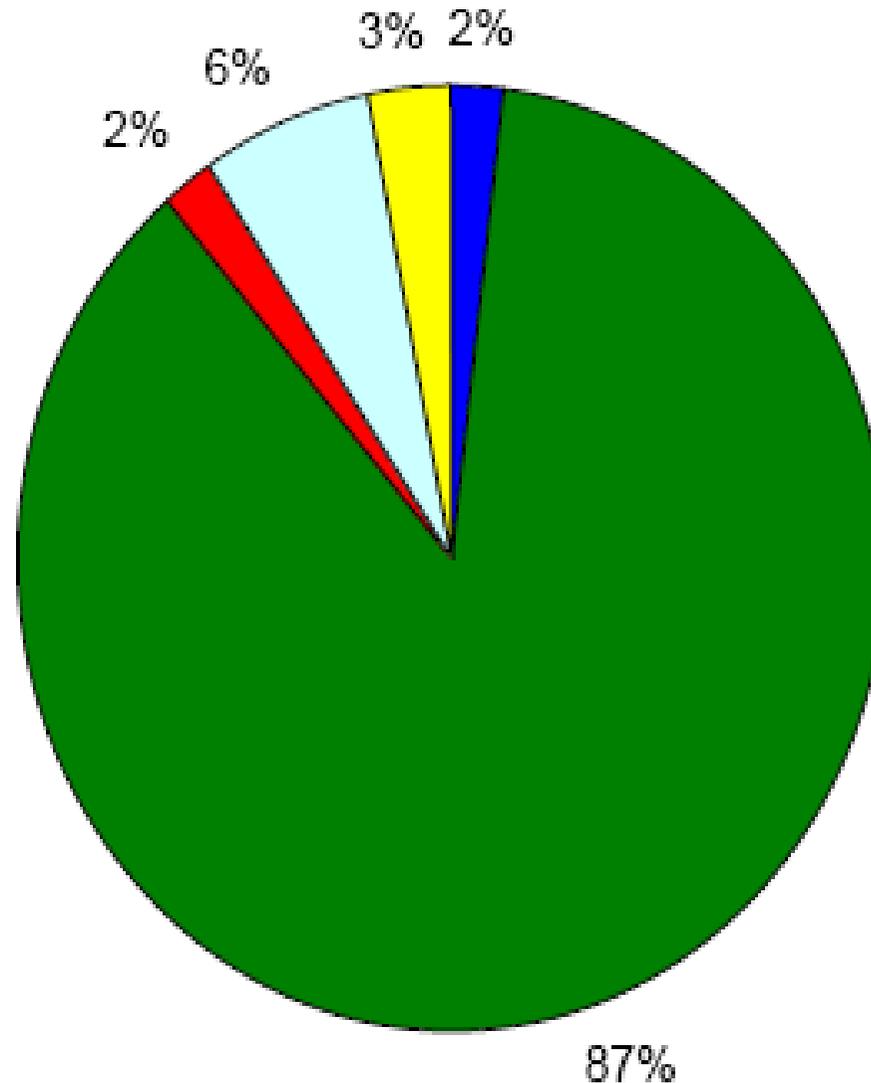


Marketing Activities

- Image oriented
 - Newspaper, magazine, outdoor, transit, and point-of-sale advertising; company websites and other Internet
- Price related
 - Price discounts, coupons, free samples, multi-pack deals
 - most at POS
- Promotional Allowances
 - Retail and wholesale level; other
- Merchandise
 - Specialty item distribution (branded and unbranded); retail value added (gifts with purchase)
 - Some at POS
- Other
 - Sponsorships, direct mail and telephone

Source: Federal Trade Commission, 2005 and author's groupings

2005 Cigarette Marketing Expenditures by Category

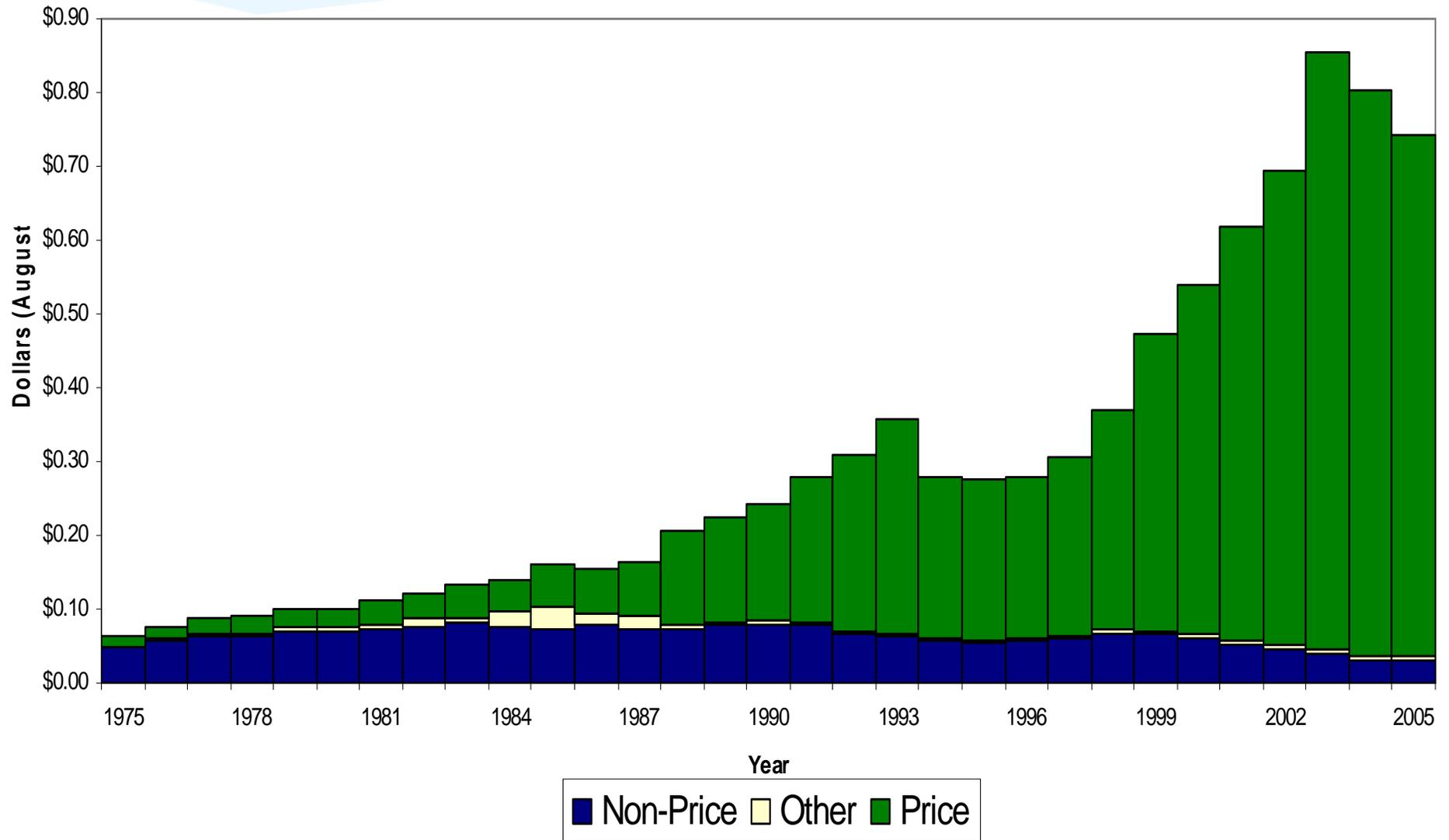


■ image ■ price ■ merchandise ■ promotional allowances ■ other

Shift in Marketing Activities

- Rise in marketing spending in unconstrained venues following the MSA
 - Significant increases in point-of-sale marketing following the implementation of the 1999 ban on billboard advertising (Wakefield, et al., 2002)
 - Consistent with empirical evidence on impact of marketing restrictions on smoking behavior (Saffer and Chaloupka, 2000)
- Shift over time to price-related marketing activities
 - Appears to follow release of the first economic studies on the impact of price on youth and adult smoking behavior in early 1980s (Chaloupka, 2005)
 - Accelerates following the MSA

Cigarette Marketing Expenditures per Pack Inflation Adjusted, 1975-2005



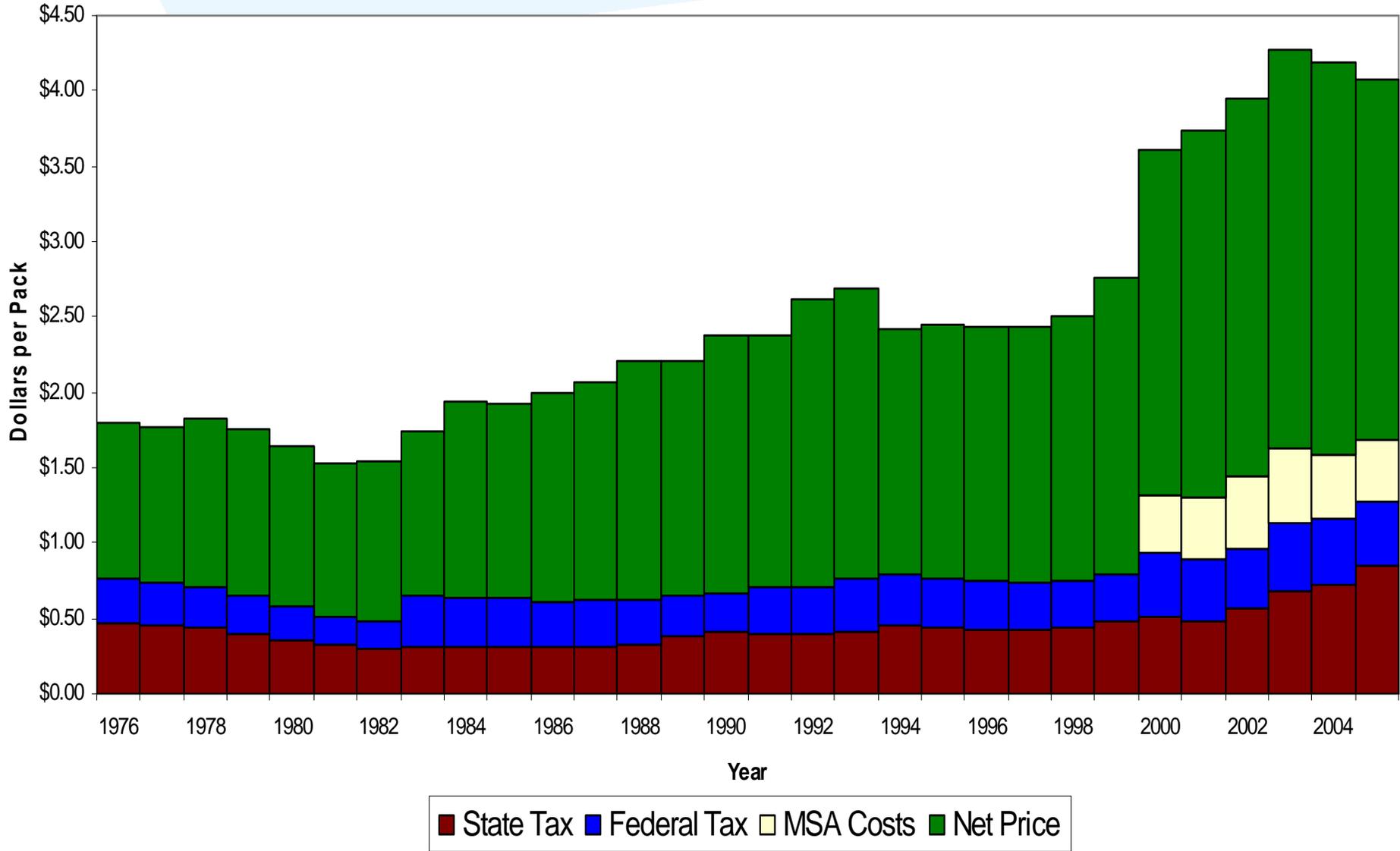
Price-Related Cigarette Marketing and Tobacco Control

- Evidence from internal documents that price-related marketing used to soften impact of tax increases (Chaloupka et al., 2002; Chaloupka et al., 1998)
- Greater price-related marketing since the MSA (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)

Price-Related Cigarette Marketing and Tobacco Control

- More marketing in stores that are more frequented by youth than in other stores (Henriksen, et al., 2004)
- 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)
 - Percentage of stores in California with at least one ad featuring sales promotion rose from 68% in 2002 to 79% in 2005
 - More rapid increases in stores located in neighborhoods with higher than average proportion of African-Americans

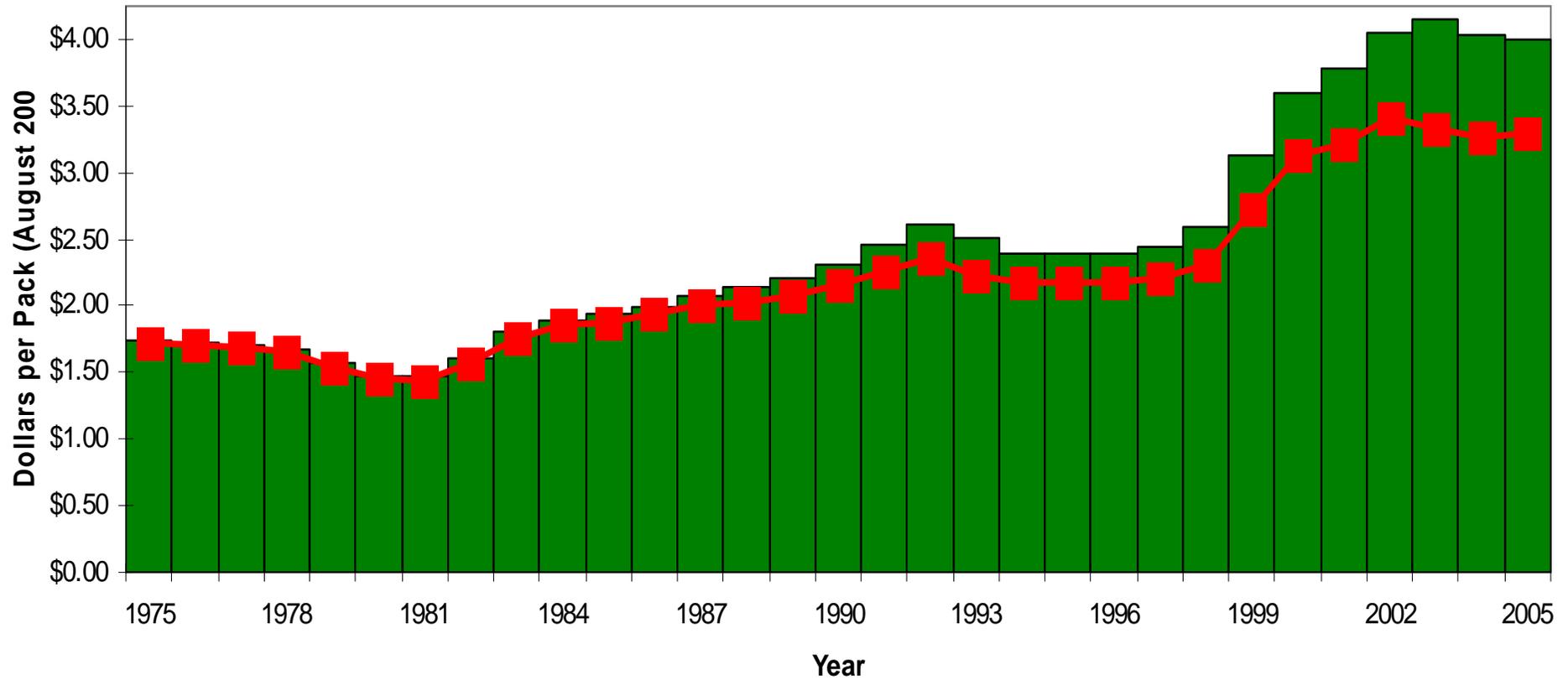
Cigarette Taxes and Prices, 1976-2005



Sources: *Tax Burden on Tobacco*, 2007, FTC, 2007, and author's calculations

Average Cigarette Prices, 1975-2005

Inflation Adjusted

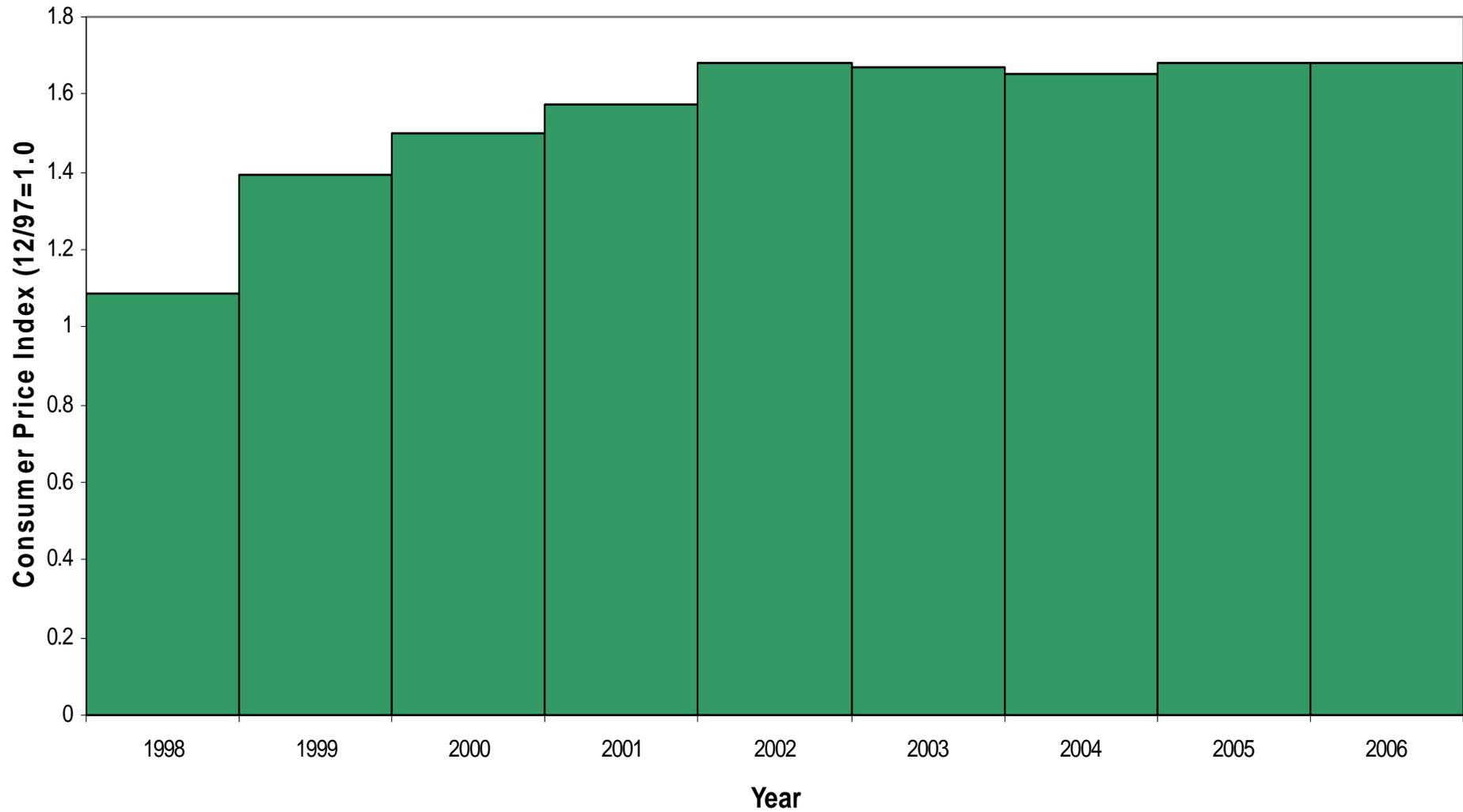


Price Price-Price Related Marketing



Sources: *Tax Burden on Tobacco*, 2007, FTC, 2007, and author's calculations

Consumer Price Index, Cigarettes 1997-2006

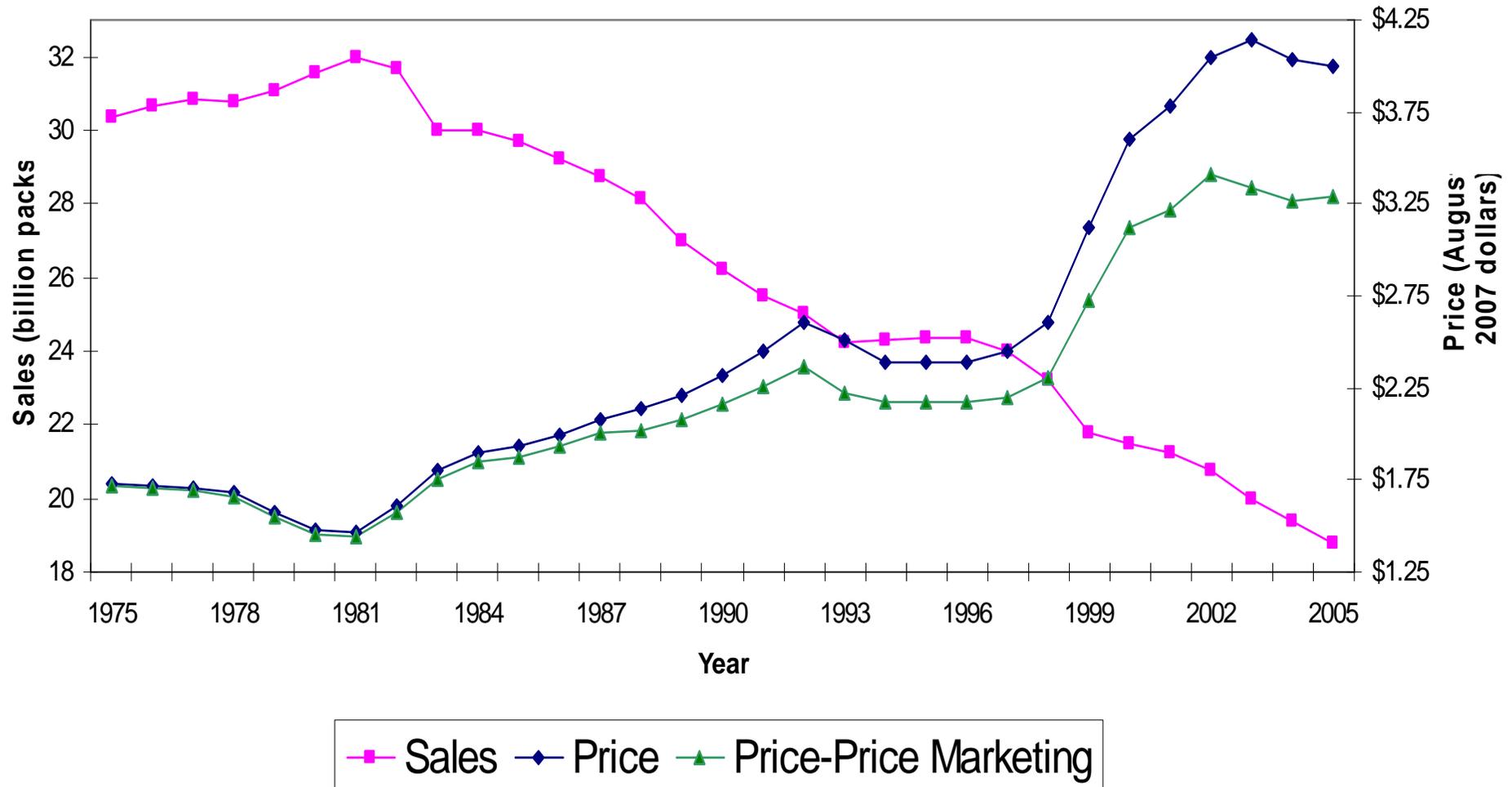


Cigarette Prices and Smoking

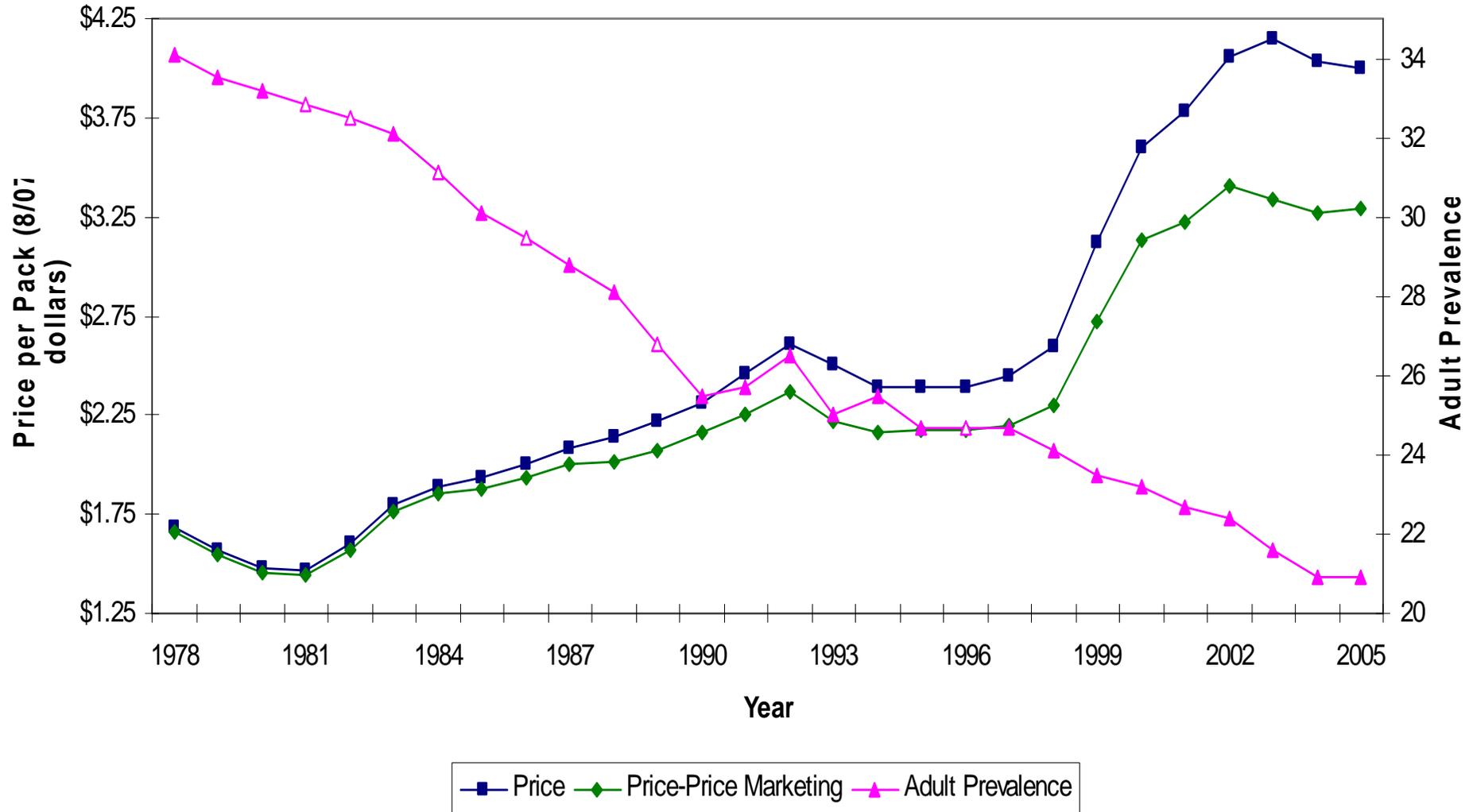
- Higher cigarette prices induce quitting, prevent relapse, reduce consumption and prevent initiation
 - marketing efforts that lower price will offset impact of taxes and other factors that raise cigarette prices
- 10 percent price rise reduces overall cigarette consumption by 4 percent
 - Half of impact on smoking prevalence
 - 10% price rise leads 10-12% to try and quit; about 2% successful
 - Half of impact on consumption among continuing smokers
 - Smoking in low-income populations more sensitive to price

Source: Chaloupka *et al.*, 2000; Chaloupka, in press

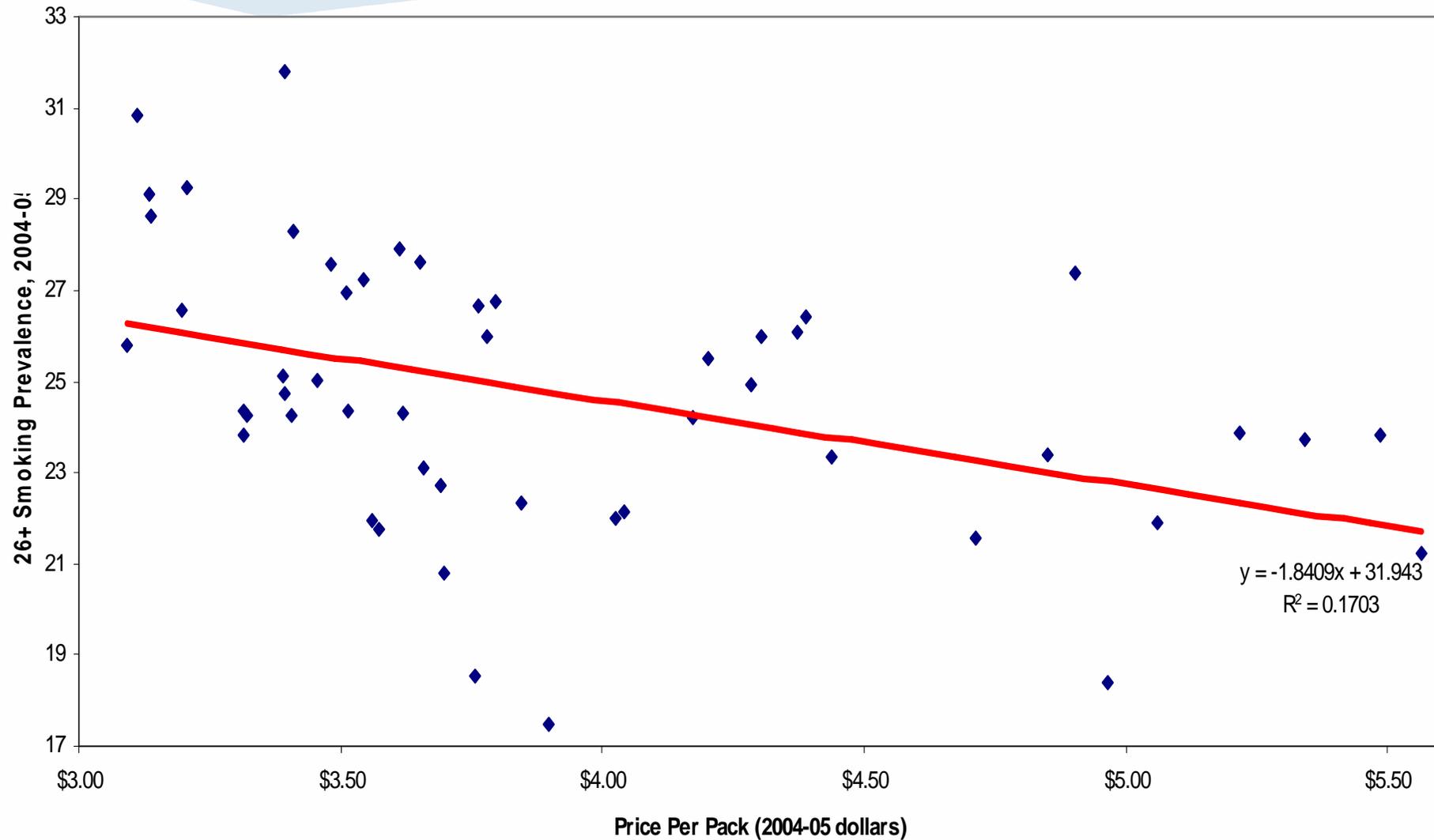
Cigarette Sales and Cigarette Prices United States, 1975-2005



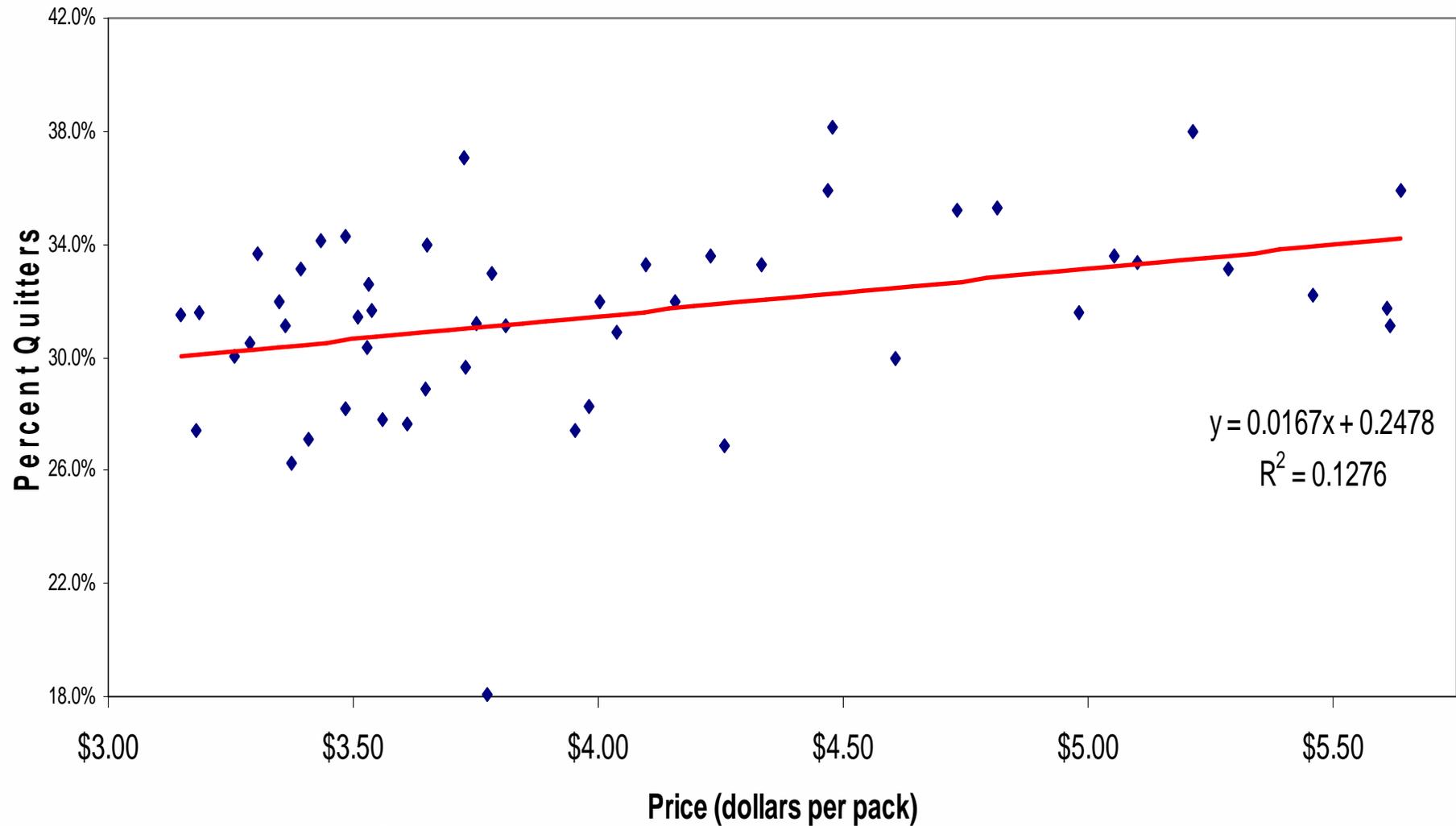
Cigarette Prices and Adult Smoking Prevalence United States, 1978-2005



Cigarette Prices and Adult (26+) Smoking Prevalence US State-Level Data, 2004-05



Cigarette Prices and Percentage of Ever Smokers Who Have Quit Smoking



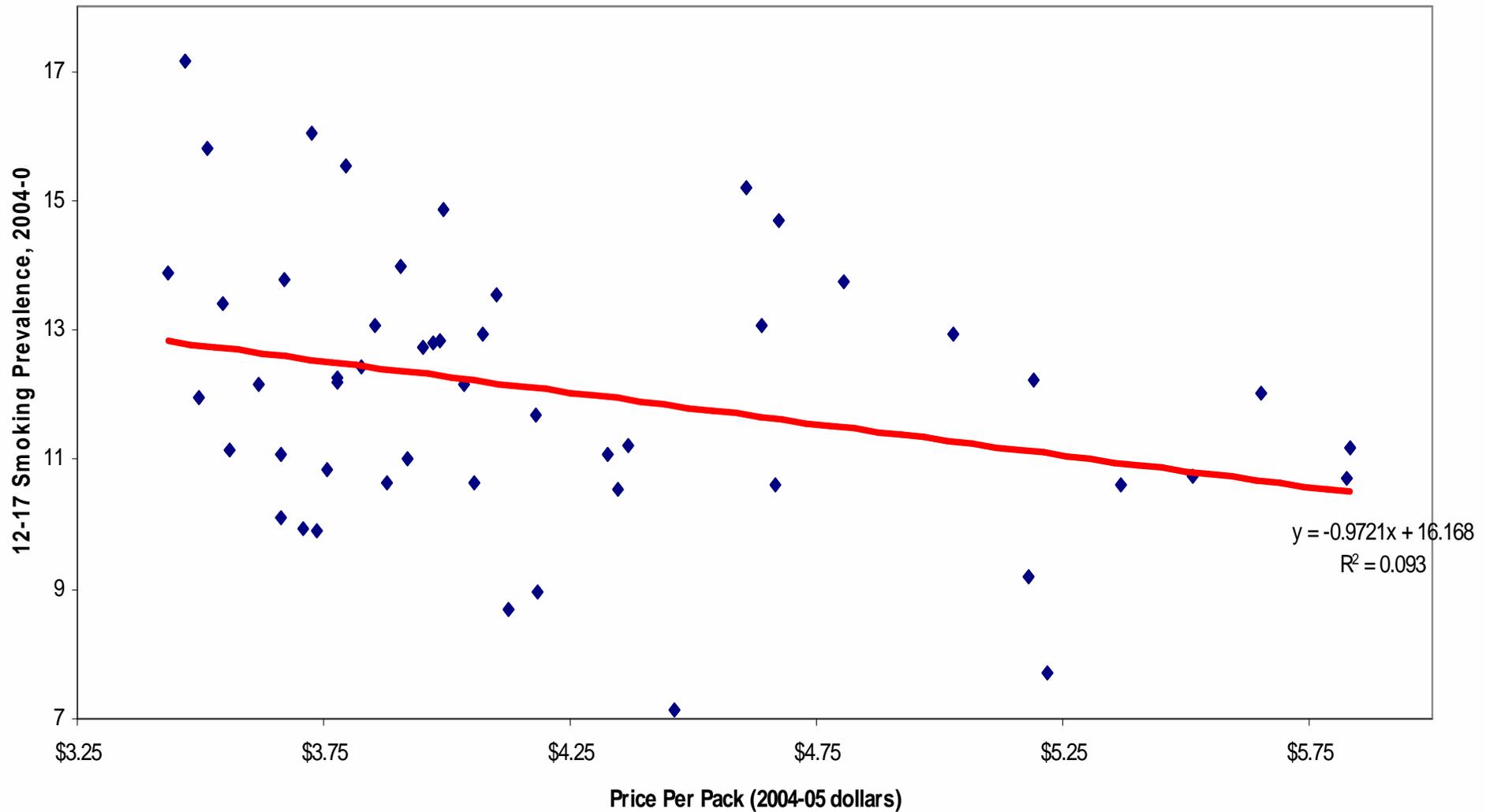
Young People More Responsive to Price Increases

- Proportion of disposable income youth spends on cigarettes likely to exceed that for adults
- Peer influences much more important for young smokers than for adult smokers
 - recent estimates indicate about 1/3 of overall impact of price on youth accounted for by indirect impact through peers
- Young smokers less addicted than adult smokers
- Young people tend to discount the future more heavily than adults
- Other spillover effects
 - for example, through parental smoking

Cigarette Prices And Youth

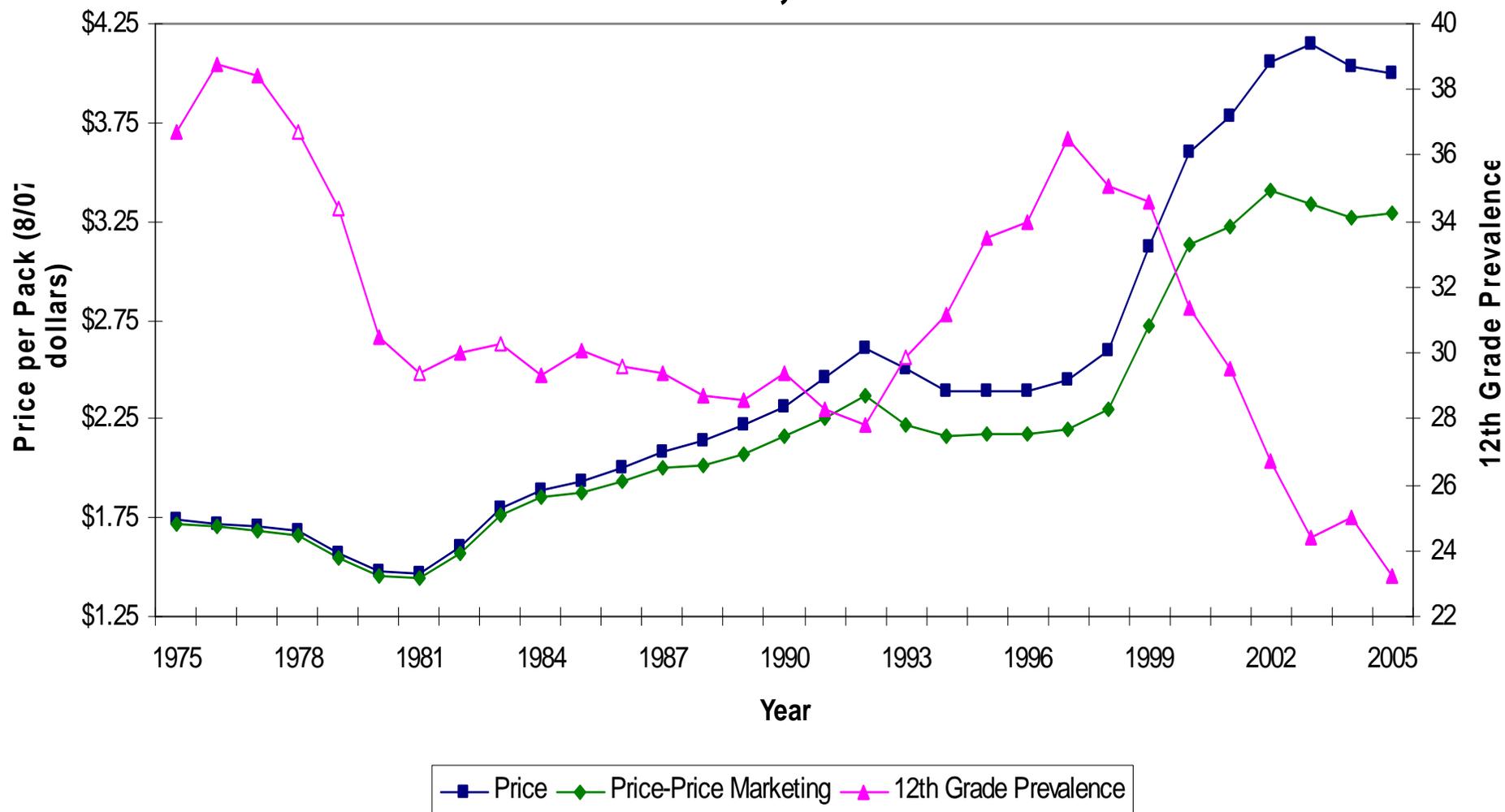
- A 10% increase in price reduces smoking prevalence among youth by nearly 7%
- A 10% increase in price reduces average cigarette consumption among young smokers by over 6%
- Higher cigarette prices significantly reduce teens' probability of becoming daily, addicted smokers; prevent moving to later stages of uptake.
 - 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%

Cigarette Prices and Smoking Prevalence Ages 12-17, State-Level Data, 2004-05



Cigarette Prices and Youth Smoking Prevalence

United States, 1975-2005



POS Cigarette Marketing and Youth Smoking Uptake

- **Bridging the Gap**
 - Funded by Robert Wood Johnson Foundation since late-1997
 - Focus on adolescent tobacco, alcohol, and illicit drug use; more recently on physical activity, diet, and obesity
- **ImpacTeen project (UIC)**
 - collected observational data on community level cigarette marketing at the point-of-sale from 1999 through 2003
 - detailed state tobacco control policy data
 - Much more
- **Youth, Education and Society Project (U. of MI, ISR)**
 - Builds upon Monitoring the Future study funded by the National Institute on Drug Abuse and conducted by Lloyd Johnston and colleagues
 - Focuses on school policies, programs, and other influences on youth tobacco use

POS Cigarette Marketing and Youth Smoking Uptake

- Design
 - observational data collection at the point-of-sale in communities around schools participating in the Monitoring the Future survey
 - approximately 200 schools per year
 - about equally divided between 8th, 10th, and 12th grade schools
 - census of retail outlets selling tobacco in most communities
 - random sample of 30 in larger communities
 - identified from business lists, verification calls, and on-site
 - average of 18.1 stores per community
 - 17,476 stores observed 1999-2003

POS Cigarette Marketing and Youth Smoking Uptake

- Collected data on variety of cigarette marketing at the point-of-sale
 - in-store, exterior, and parking lot measures of advertising
 - low-height advertising and functional objects
 - Promotions: cents-off specials, on-pack coupons, multi-pack discounts, gifts with purchase (Marlboro and Newport)
 - Cigarette prices (Marlboro, Newport, and lowest price)
 - Placement (self-service vs. clerk assisted only)
- Measures used in analyses reflect the proportion of stores in a given community with different types of marketing
 - price is average price of premium brands

POS Marketing and Youth Uptake

- Marketing Measures:

Advertising Scale (0-5)	2.56
No self-service placement	83%
Any vs. no promotions	48%
Premium price	\$3.62

POS Marketing and Youth Uptake

- Outcome:
 - Youth smoking uptake – 6 levels based on past and current smoking behavior and future intentions to smoke
 - Validated with longitudinal MTF data
 - 26,301 students

Stage	% of youth
Never smoker	53.7%
Puffer	20.7%
Nonrecent Experimenter	4.1%
Former Established Smoker	3.1%
Recent Experimenter	6.9%
Current Established Smoker	11.5%

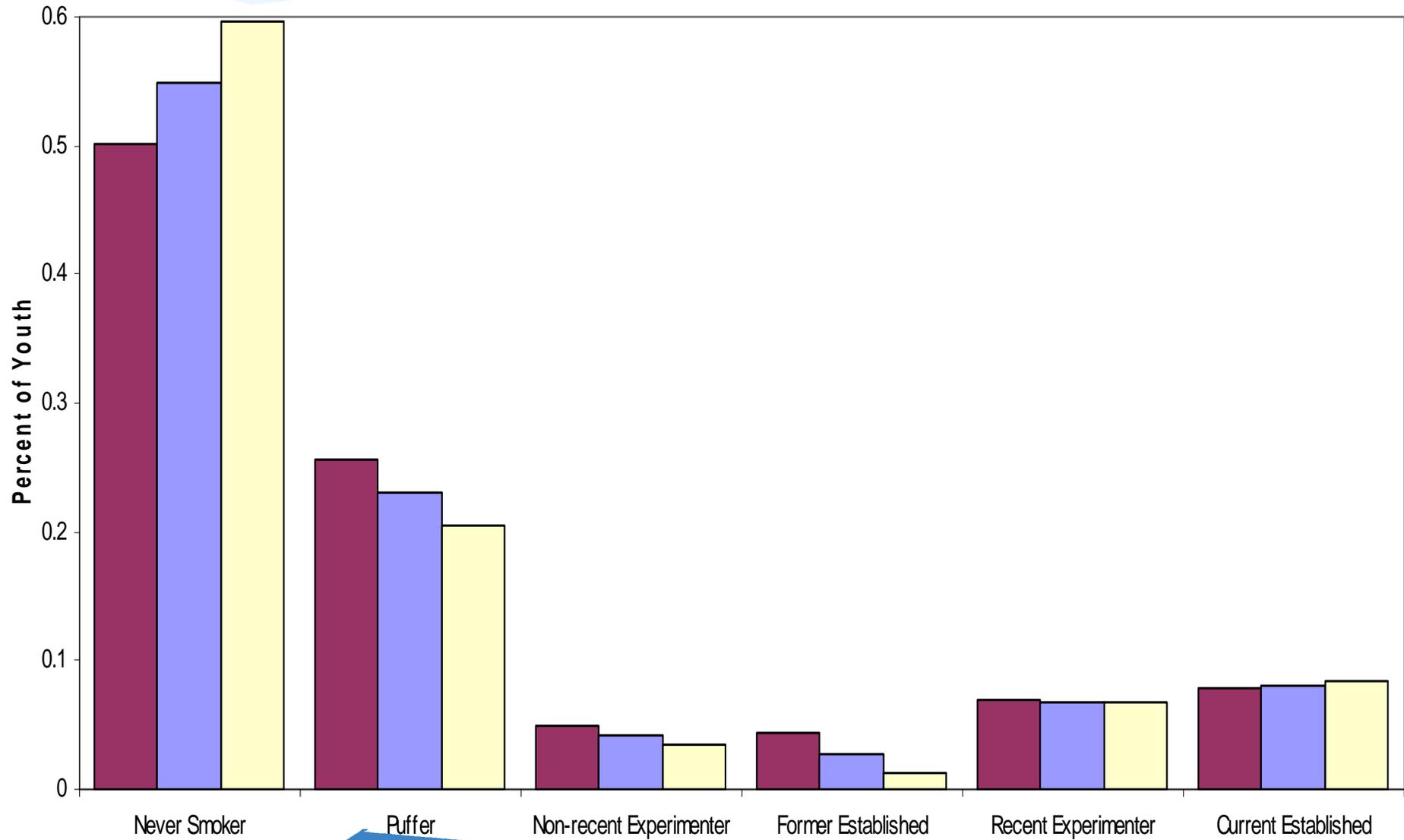
POS Marketing and Youth Uptake

- Methods:
 - Generalized ordered logit model
 - Allows impact of explanatory variables to have different impact on movement between levels of smoking uptake
 - Account for complex survey design
 - sampling weights; clustering (school-level) adjustment
 - Variety of individual-level control variables
 - gender, race/ethnicity, grade, student's income, parents' education, live with both parents
 - State tobacco control policies
 - smoke-free air index
 - youth access index
 - purchase-use-possession index
 - Other variables
 - year, urban/suburban/rural

POS Marketing and Youth Uptake

- Findings:
 - Significant impact of advertising on early stages of uptake (from non-smoker to puffer)
 - effect declines as move to later stages of uptake
 - statistical significance declines as move to later stages
 - Simulations look at impact of different levels of advertising on stages of uptake
 - If all stores had no advertising, estimate that prevalence of never smoking would rise by nearly 9%

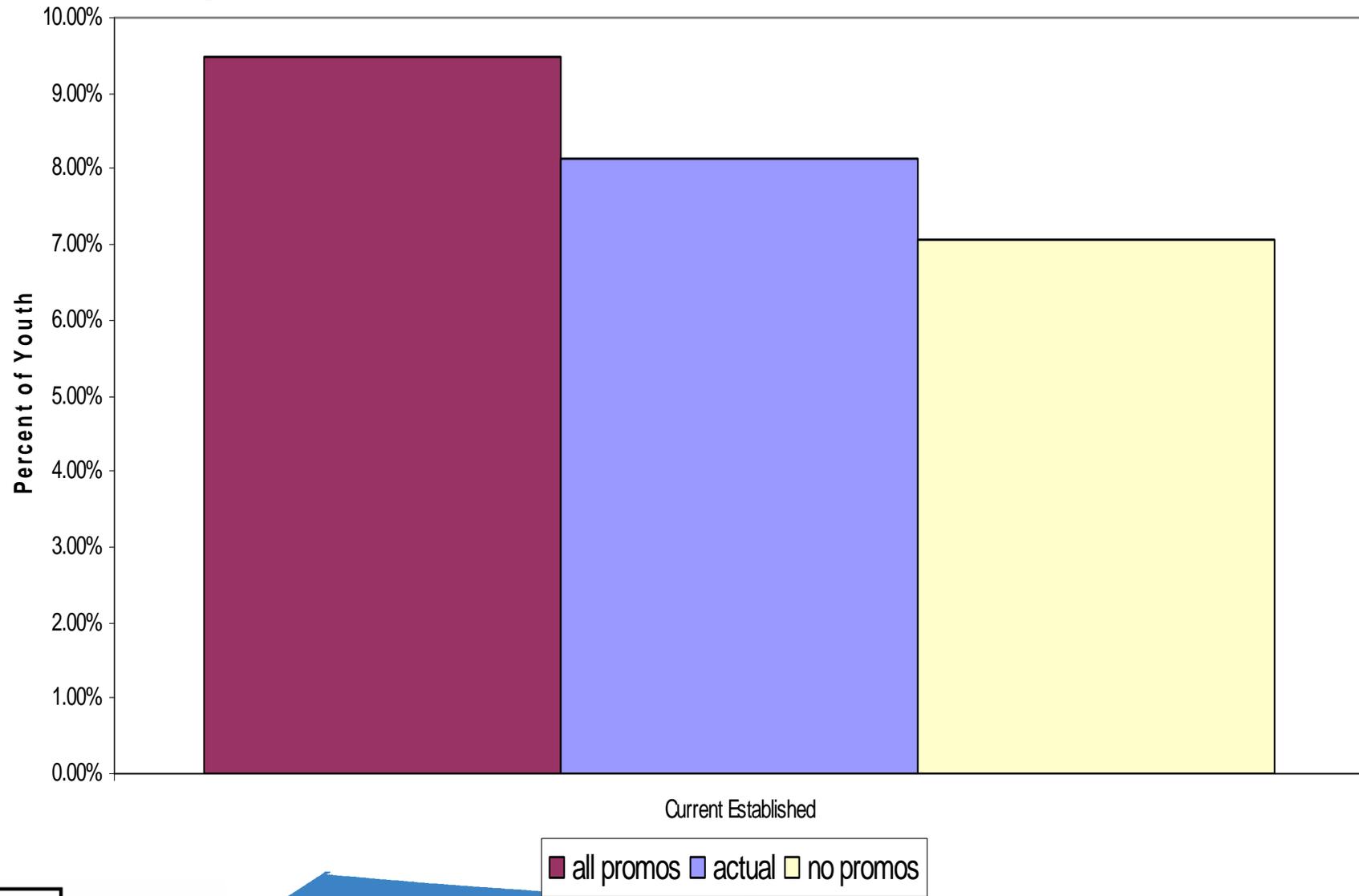
Advertising and Youth Smoking Uptake Simulations



POS Marketing and Youth Uptake

- Findings:
 - Significant impact of promotions on later stages of uptake
 - effect rises as move to later stages of uptake
 - statistical significance increases as move to later stages
 - Simulations look at impact of different levels of advertising on stages of uptake
 - If all stores had no promotions, estimate that prevalence of current established smoking would fall by over 13%

Promotions and Youth Smoking Uptake Simulations



POS Marketing and Youth Uptake

- Findings:
 - Youth smoking uptake negatively associated with higher cigarette prices
 - small, statistically insignificant impact on transition from never smoking to puffing
 - large, statistically significant and consistent impact on transitions between other stages of uptake
 - \$1.00 increase in price would reduce the odds of moving from one stage to next by 24%
 - Consistent with other recent evidence on price and youth smoking uptake
 - Weak association between self-service only placement and youth smoking uptake
 - not statistically significant; somewhat stronger for later stages of uptake

POS Marketing and Youth Uptake

- Limitations:
 - Cross-sectional data limits ability to assess causal impact of POS marketing on youth smoking uptake
 - Relatively crude measures of cigarette marketing
 - Inability to match store-specific data to youth based on stores they frequent most

POS Marketing and Youth Smoking

- Recent analysis by Feighery and her colleagues (2006)
 - data on POS marketing collected observationally from 53 stores located near 3 California middle schools
 - branded signs
 - functional objects
 - shelving units & product displays
 - shelf-space for specific brands
 - Based on observation data and youth self-reports of shopping behavior, four measures of advertising exposure constructed:
 - shopping frequency in stores with more cigarette advertising
 - shopping frequency in stores that sell cigarettes
 - exposure to brand impressions in stores where students shop
 - self-reported exposure to cigarette advertising

POS Marketing and Youth Smoking

- Recent analysis by Feighery and her colleagues (2006)
 - youth smoking behavior:
 - ever smoking
 - susceptibility to smoking
 - Key findings:
 - ever smoking and susceptibility to smoking positively and significantly associated with alternative measures of advertising exposure in all but one of the models estimated
 - estimate that youth who are highly exposed to marketing are 2-3 times more likely to have ever smoked than youth with low exposure to cigarette marketing
 - Similar limitations

Summary

- Cigarette marketing expenditures have increased sharply since the MSA
 - some recent declines, but per-pack amount more than double spending prior to the MSA
- Cigarette marketing increasingly dominated by spending on price-reducing promotions
- Higher cigarette prices encourage smokers to quit smoking, prevent former smokers and youth from starting, and reduce consumption among continuing smokers
 - increases in price-lowering promotions offsets the impact of higher cigarette taxes on youth and adult smoking
- Youth smoking uptake associated with point-of-sale cigarette marketing
 - advertising has greatest impact on early stages
 - price and price-promotions have greater impact on later stages



Frank J. Chaloupka

fjc@uic.edu

www.impactteen.org

www.tobaccoevidence.net