

# Cigarette Marketing at the Point-of-Sale and Youth Smoking

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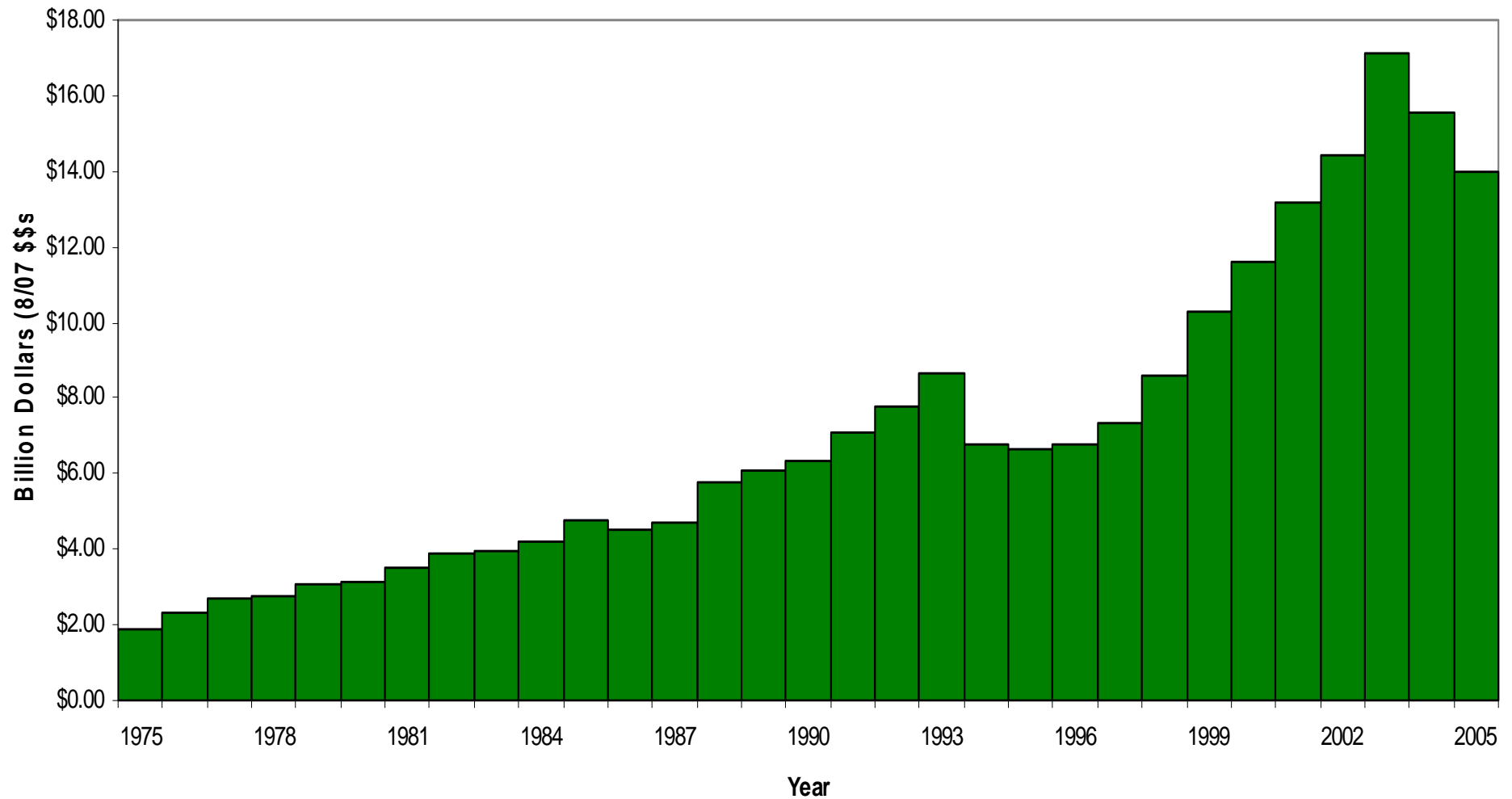
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# Overview

- Brief review of recent trends in cigarette company marketing expenditures and impact on price
  - Changes over time
- 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

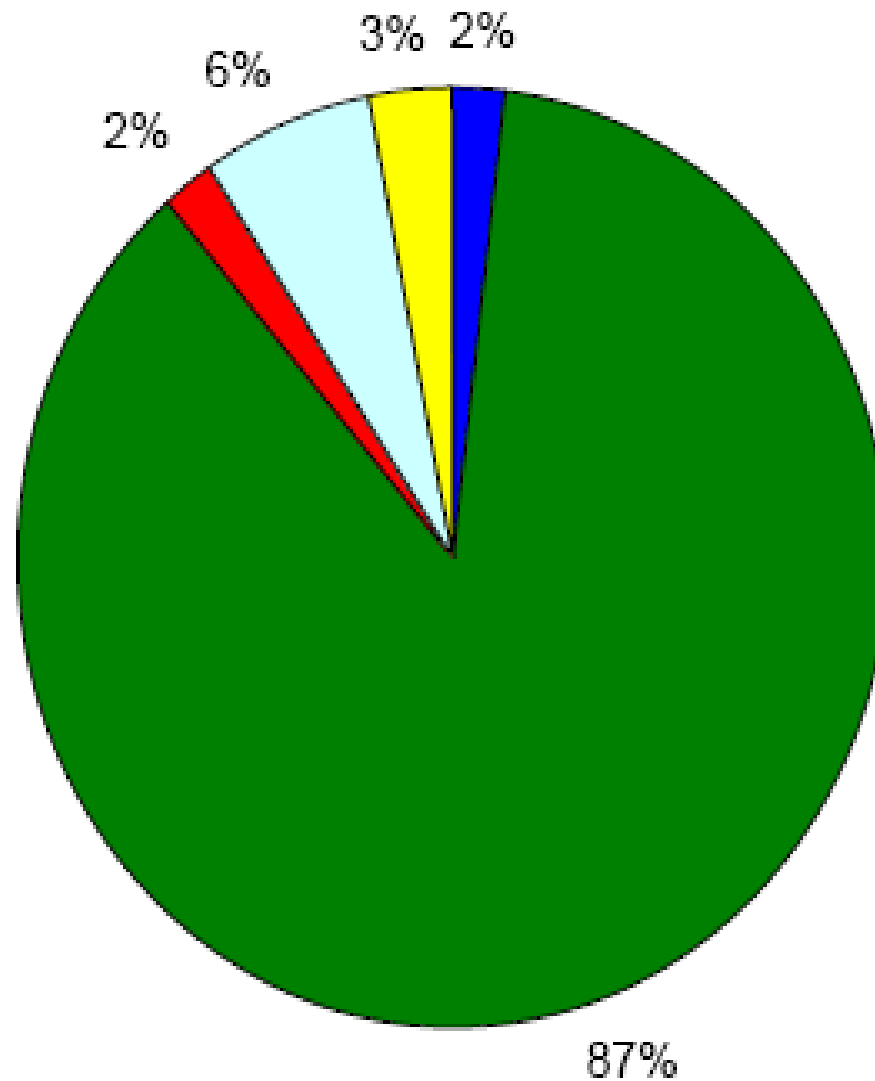


# Marketing Activities

- 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

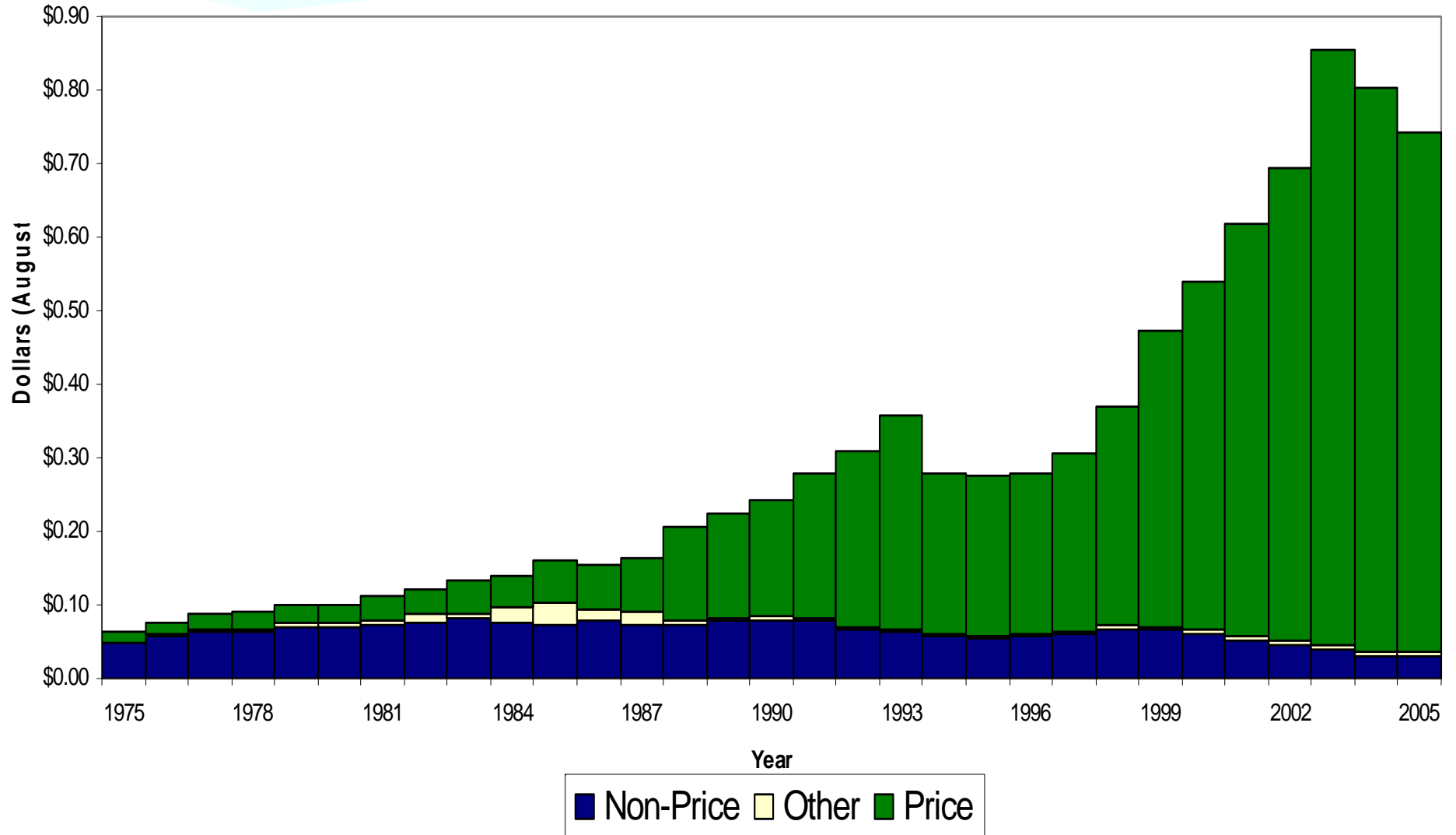


■ image ■ price ■ merchandise ■ promotional allowances ■ other

# 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

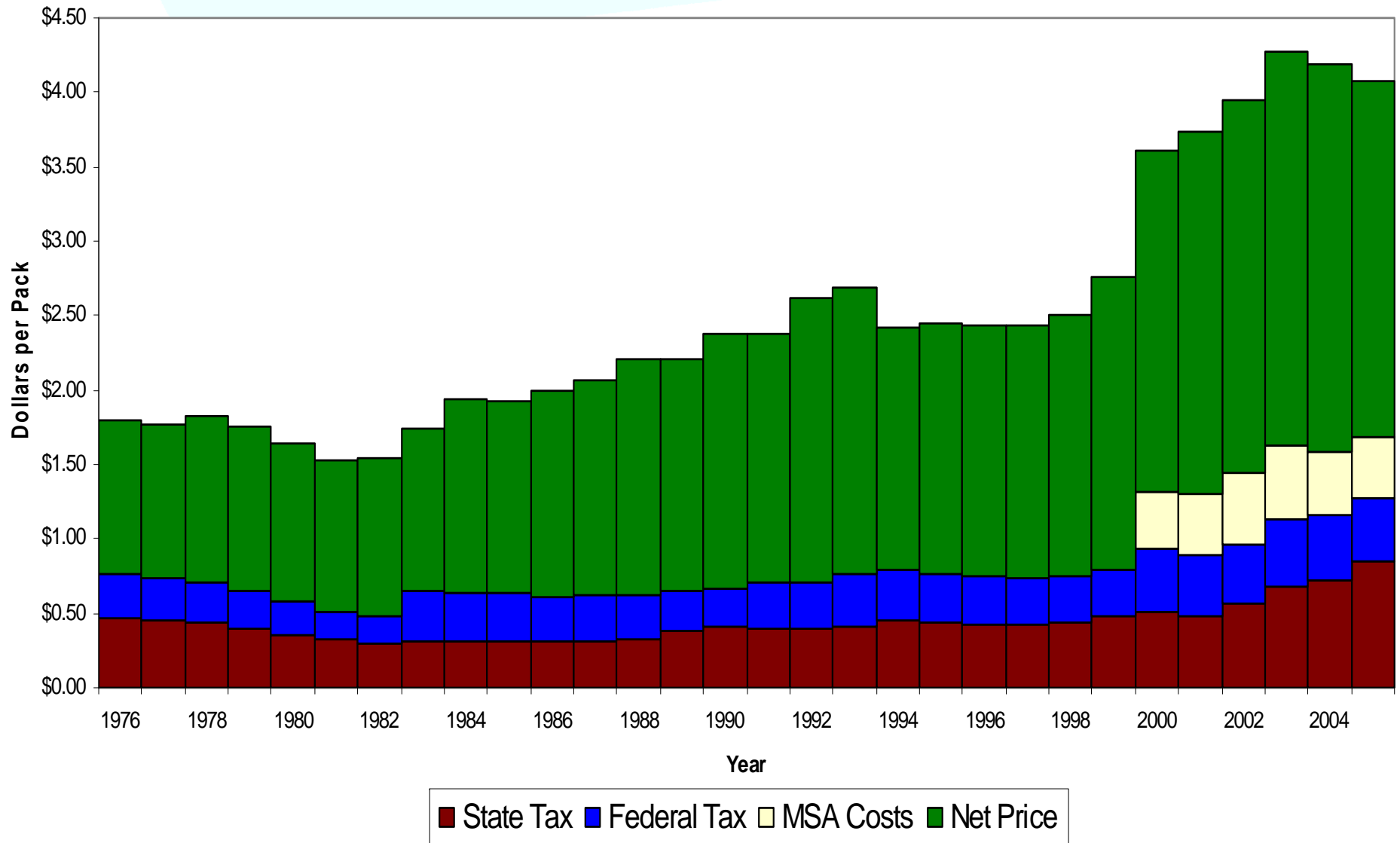


# Price-Related Cigarette Marketing and Tobacco Control

- 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)
- More marketing in stores that are more frequented by youth than in other stores (Henriksen, et al., 2004)



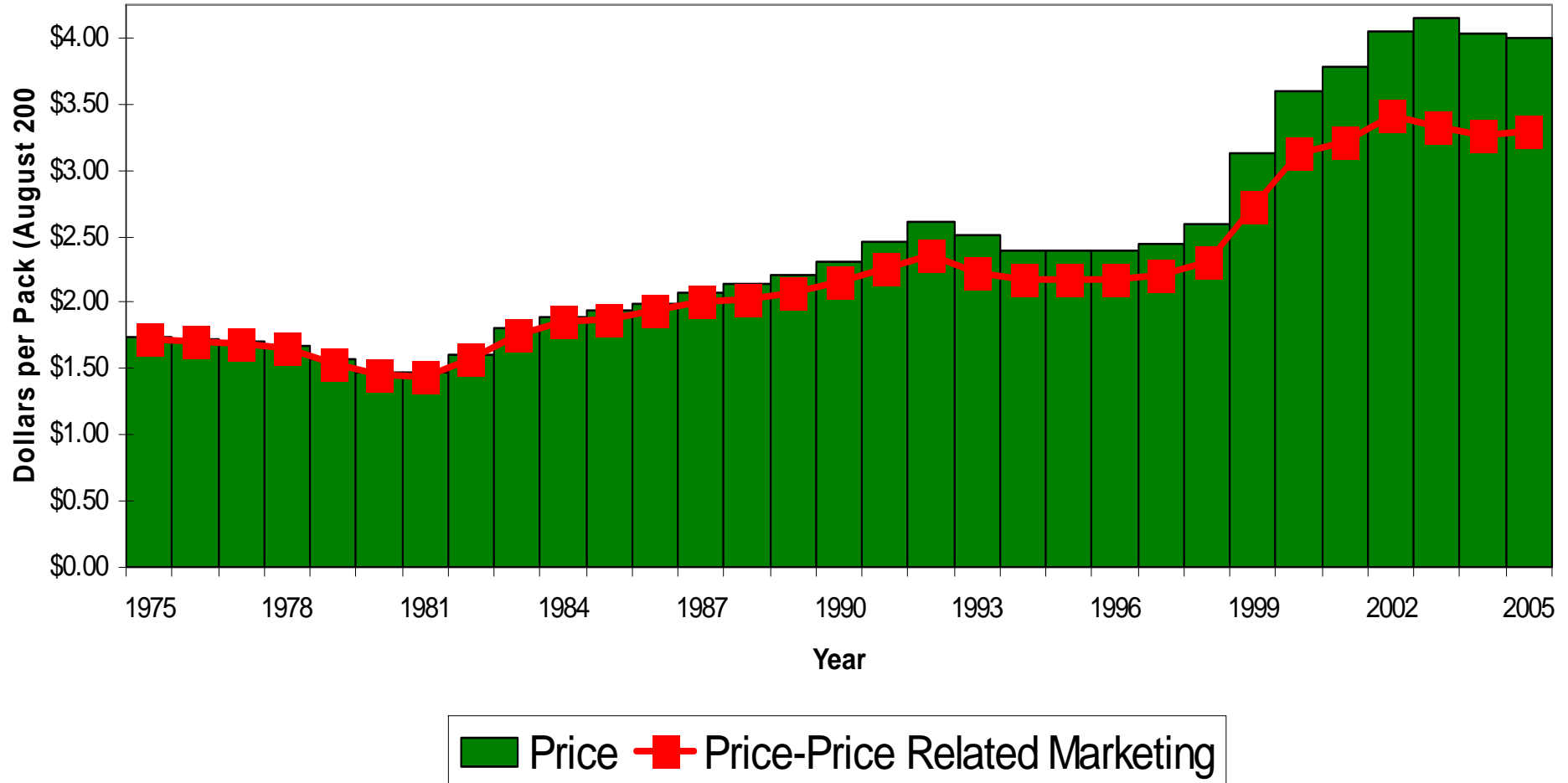
# Cigarette Taxes and Prices, 1976-2005



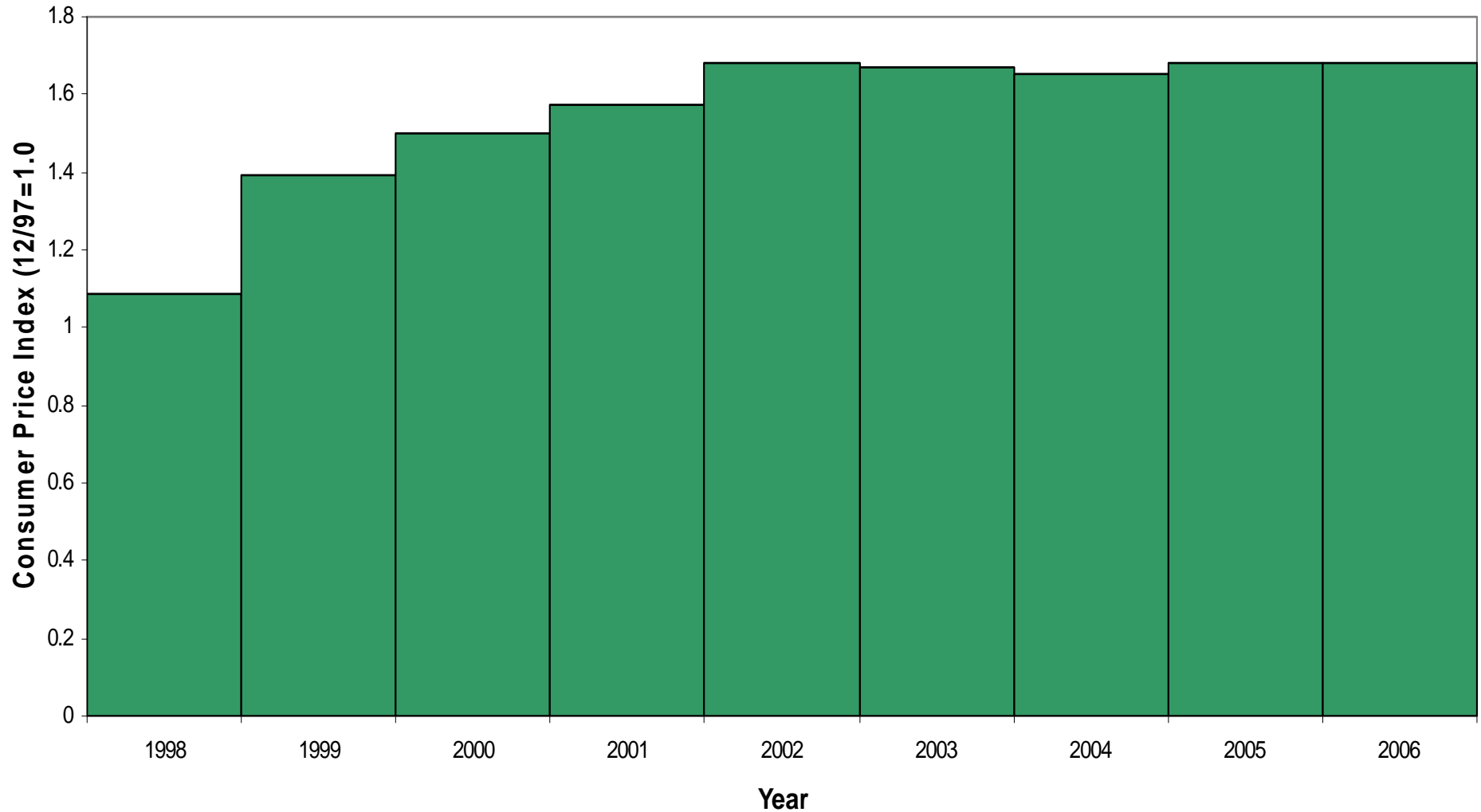
Sources: *Tax Burden on Tobacco*, 2007, FTC, 2007, and author's calculations

# Average Cigarette Prices, 1975-2005

## Inflation Adjusted



## 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

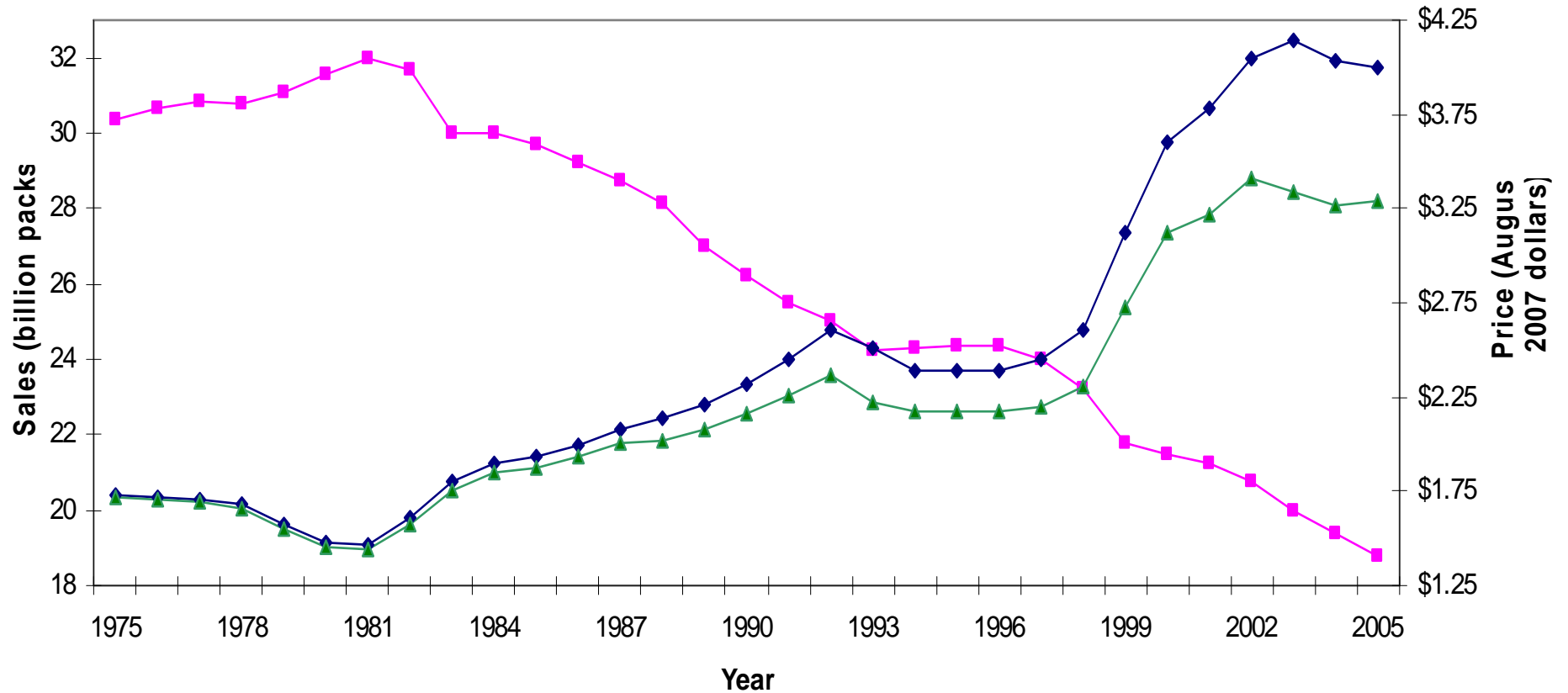
Source: Chaloupka *et al.*, 2000; Chaloupka, in press

# Cigarette Marketing and Smoking

- Mixed evidence from many studies of cigarette marketing expenditures and cigarette sales
  - small positive impact or no effect
  - Econometric approach limited given data
  - Better evidence from studies of restrictions on cigarette marketing
    - Comprehensive bans can reduce smoking by 6-8% (Saffer and Chaloupka, 2000)
- One recent study looks at post-MSA period
  - Keeler, et al., *Applied Economics*, 2004
  - Post-MSA increases in advertising significantly increased cigarette sales
    - Offset impact of price increases by 33-57%

# Cigarette Sales and Cigarette Prices

## United States, 1975-2005

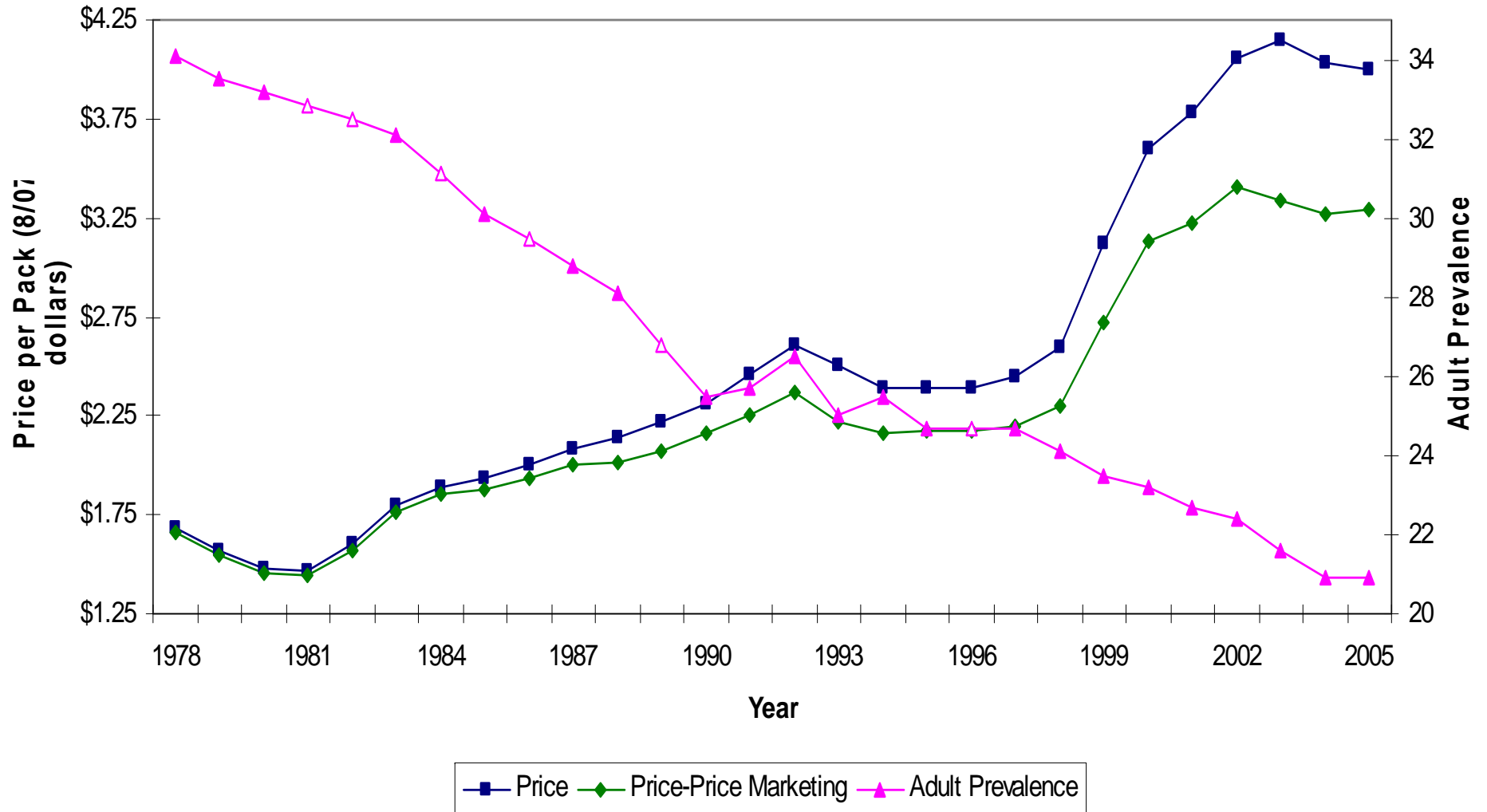


■ Sales 
 ◆ Price 
 ▲ Price-Price Marketing



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

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



Source: NHIS; *TBOT*, 2007, FTC 2007; and author's calculations

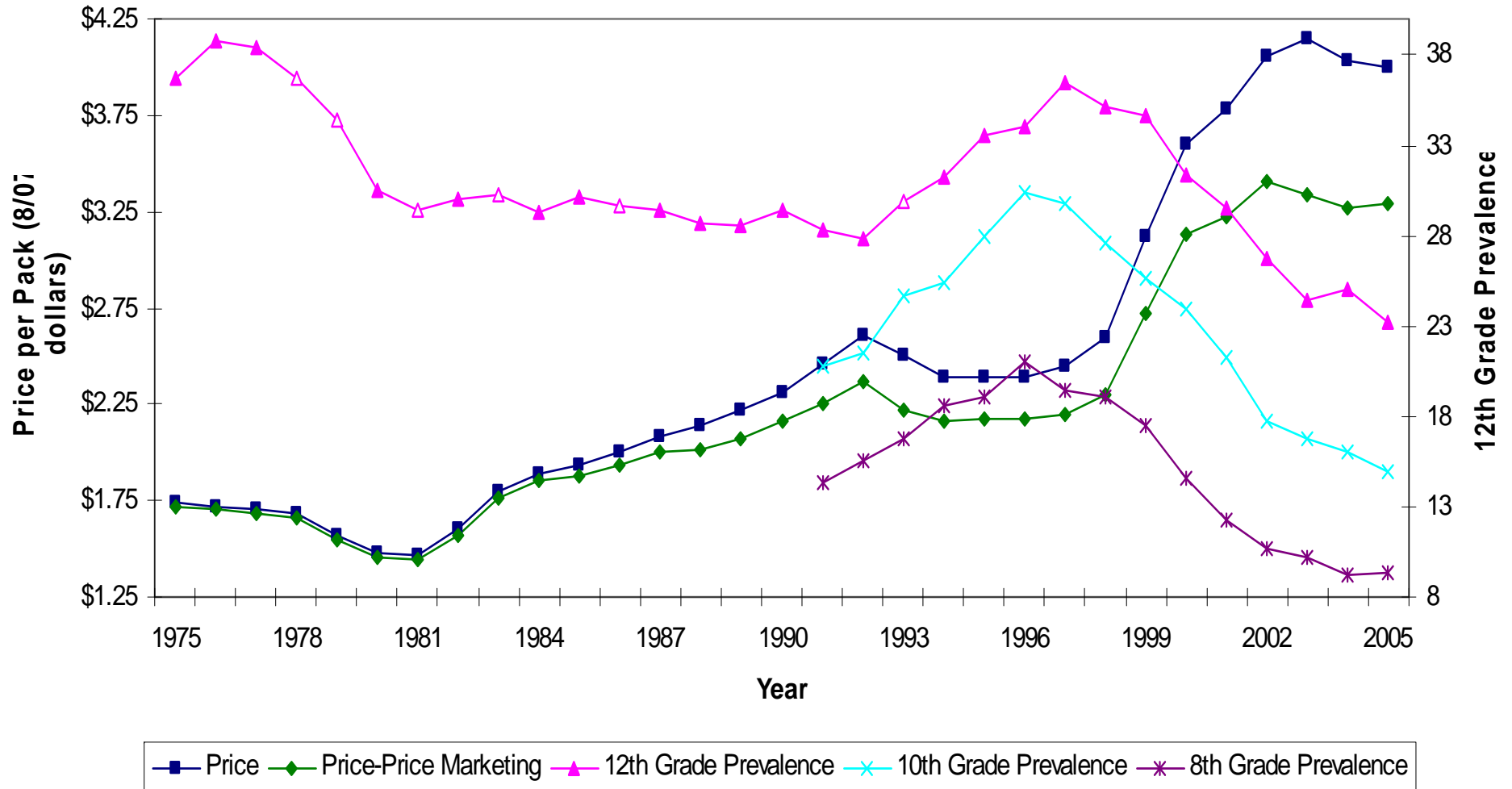
# Cigarette Prices And Youth Smoking

- Estimates indicate youth smoking two to three times more responsive to price than adult smoking
  - Largely reduced initiation
- Recent focus on where in the uptake process price has its greatest impact
  - Relatively limited impact on experimentation
  - Greatest impact of transitions to regular smoking – e.g. daily or heavy daily smoking

Sources: Chaloupka, in press; Tauras, *et al.*, 2001; Ross, *et al.*, 2001



# Cigarette Prices and Youth Smoking Prevalence United States, 1975-2005



Source: MTF; *TBOT*, 2007; FTC 2007, and author's calculations

# POS Cigarette Marketing and Youth Smoking Uptake

- Many previous studies use self-reported measures of exposure to or interest in cigarette marketing to look at impact of marketing on youth smoking-related outcomes
  - Unclear whether marketing causes smoking or interests in smoking result in greater awareness of cigarette marketing
  - Difficult to obtain exogenous measures of marketing exposure
- Recent experimental studies link exposure to tobacco marketing with changes in smoking-related attitudes, perceived availability, and smoking intentions
  - e.g. Wakefield et al., 2006

# Marketing and Youth Smoking

- Recent meta-analysis by Wellman and his colleagues (2006)
  - 51 studies of relationships between youth tobacco use and tobacco marketing or tobacco use in film
  - two categories of exposure:
    - low-engagement (e.g. point-of-sale marketing)
    - high-engagement (e.g. receptivity to advertising)
  - two outcome categories
    - cognitive (e.g. smoking related attitudes and intentions)
    - behavioral (e.g. smoking initiation, uptake, and prevalence)
- Key findings:
  - behavioral outcomes affected by both low and high-engagement exposure
  - cognitive outcomes more affected by high-engagement exposure

# 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 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> 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



# Exterior





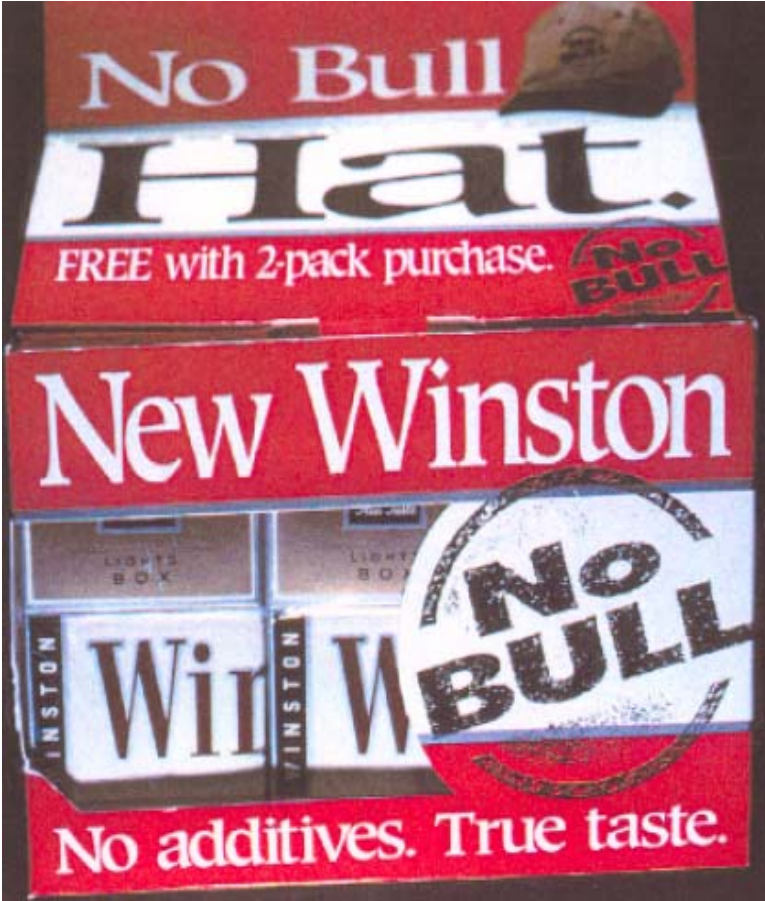
# Special Price Offers



# Multi-Pack Deals



Gifts  
With  
purchase



# 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%

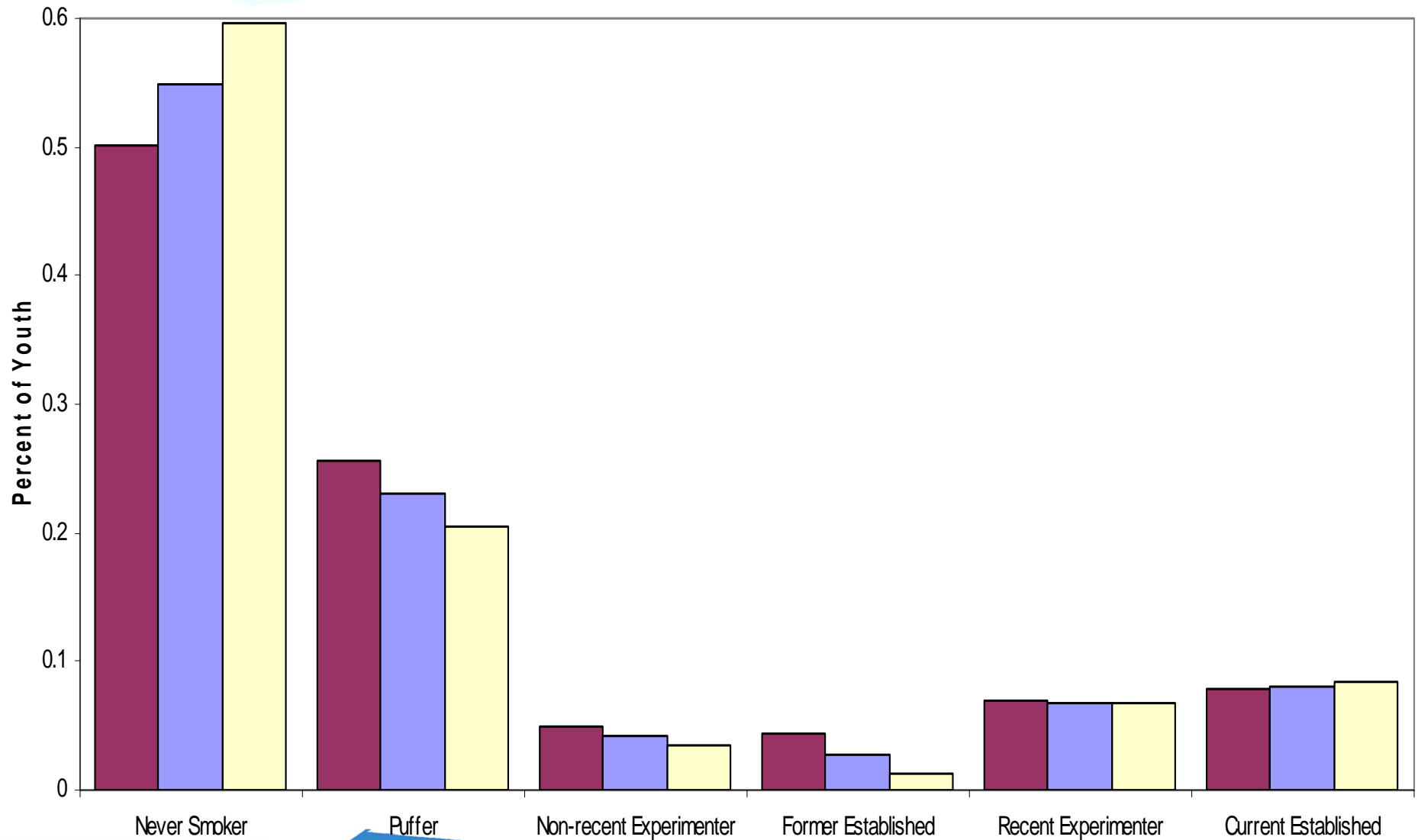
# POS Marketing and Youth Uptake

- 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

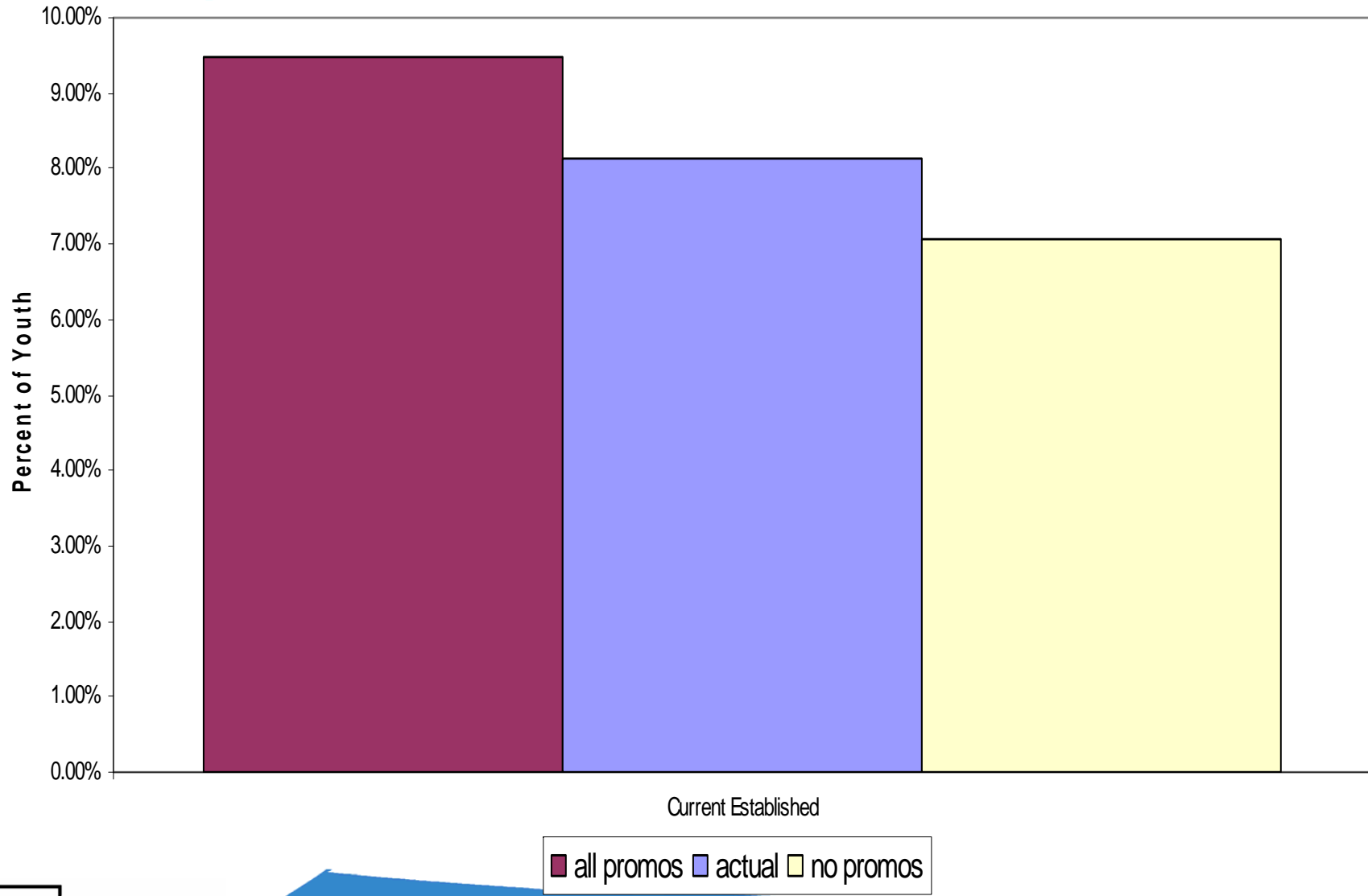




# POS Marketing and Youth Uptake

- 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



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