

# **The Impact of Cigarette Advertising on Youth Smoking**

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## **Background**

**Youth smoking increasing throughout much of the 1990s:**

**50% increase in smoking prevalence among 8<sup>th</sup>/10<sup>th</sup> grade students**

**20% rise among high school seniors**

**6,000 youth try a cigarette for the first time each day; half become regular smokers**

**up to half of all regular smokers will die prematurely from smoking related diseases, with half of these deaths in middle age**

## **Background**

**Cigarette advertising and promotion rising over time:**

**1996: \$5.1 billion spent on cigarette advertising and promotion in US; continuation of upward trend of past decade**

**shift over time away from traditional, image-oriented advertising to other promotional activities**

## **Background**

**Policy efforts increasingly focusing on youth, advertising and promotion:**

**Numerous policies directed at reducing youth smoking; most notably the Synar amendment and FDA rules related to youth access to tobacco products**

## **Background**

**FDA rules also include significant limits on cigarette advertising and promotion**

**State and local governments restricting advertising and promotion**

**Multi-state tobacco settlement includes ban on billboard and transit cigarette advertising, elimination of advertising/promotion targeting youth, prohibition on use of cartoon characters in ads, and other restrictions**

# **Cigarette Advertising and Adult Smoking**

**Large number of econometric studies on the impact of aggregate cigarette advertising expenditures on aggregate measures of smoking produce mixed evidence that suggests advertising has little or no impact on cigarette demand**

**Saffer (1998) and other critics of econometric studies based on aggregate data argue that econometric methods are ill-suited to examining the impact of advertising on demand**

# **Cigarette Advertising and Adult Smoking**

**Smaller number of studies look at the impact of a ban on cigarette advertising in one or a few media on demand, again producing mixed evidence**

**partial bans unlikely to be effective given potential for substitution away from banned media towards other marketing activities**

**A few recent studies, including Saffer and Chaloupka (1999), conclude that comprehensive bans on advertising and promotion will lead to significant reductions in smoking**

# Cigarette Advertising and Youth Smoking

**Relatively small econometric literature on the impact of cigarette advertising on youth smoking:**

- **Lewit, Coate, and Grossman (1981):**
  - **data from 1966-1970, US Health Examination Survey**
  - **measures of self-reported television watching combined with information on cigarette advertising and counteradvertising**
  - **find evidence that televised pro-smoking cigarette advertising significantly increased youth smoking while anti-smoking ads significantly reduced youth smoking**

# Cigarette Advertising and Youth Smoking

**Beales (1996):**

- **1990 California Tobacco survey data**
- **monthly magazine, newspaper, newspaper supplement, out-of-home, and special market advertising data for 5 CA media markets provided by RJ Reynolds**
- **concludes advertising has no impact on youth smoking**
- **numerous methodological problems**

# Cigarette Advertising and Youth Smoking

**Pollay, et al. (1996):**

- **data on brand choice from several surveys of youth and adult smokers combined with brand-specific advertising expenditure data**
- **looks at impact of "share of advertising voice" on brand choice**
- **concludes that brand choice among younger smokers about 3 times more sensitive to advertising than among older smokers**

# Cigarette Advertising and Youth Smoking

**Large non-economics literature concludes that: cigarette advertising is effective in getting children's attention; youth recall cigarette ads; and strength of interest is correlated with current or anticipated smoking behavior or smoking initiation**

- generally do not adequately account for the potential endogeneity between and interest in smoking and smoking behavior**

## **Cigarette Smoking/Socioeconomic/ Demographic Data**

**1992, 1993, 1994 Monitoring the Future  
Surveys of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> grade  
students**

- 82,995 students, mostly ages 12-18  
years; restricted to those living in  
metropolitan statistical areas given  
the availability of other data**
- three indicators of cigarette smoking:**
  - smoking in past 30 days**
  - average daily cigarette  
consumption for smokers**
  - ordered measure of smoking  
frequency**

## **Cigarette Smoking/Socioeconomic/ Demographic Data**

**Wide variety of socioeconomic and demographic information:**

- race/ethnicity, gender, age, age squared, family structure, religiosity, parents' education, average real weekly income, hours worked weekly, mother's work status, marital status, grade, and more**

**By special arrangement, identifiers for each youth's county of residence were added to the survey data**

## **Advertising Data**

**Alternative measures of magazine cigarette and other tobacco advertising expenditures constructed from several sources:**

- **Annual cigarette advertising expenditures for approximately 190 leading magazines from Leading National Advertisers**
- **Annual magazine circulation, by metropolitan statistical area for several hundred magazines from the Audit Bureau of Circulation**
- **Fraction of circulation accounted for by households with youth ages 12 to 17 years from Mediamark Research, Inc.**

# Advertising Data

- **Gross advertising expenditures**
- **Advertising expenditures per capita**
- **Advertising expenditures per household**
  
- **Total tobacco advertising**
- **Cigarette advertising only**

# Price and Tobacco-Related Policy Data

## Cigarette Prices

- **Tobacco Institute**
  - **state-level weighted average price per pack of 20 cigarettes**
  - **price differential for youth living in counties within 25 miles of state with lower cigarette prices**
  - **indicators for youth living near Mexico and Canada**

## **Price and Tobacco-Related Policy Data**

### **Tobacco Control Policies**

- **Coalition on Smoking OR Health and Office on Smoking and Health, Centers for Disease Control and Prevention**
  - **variety of state tobacco related policies including: restrictions on smoking in various public places and private worksites, limits on youth access to tobacco products, indicator for states that earmark tobacco tax revenues for anti-smoking campaign, smoker protection policies**

### **NCI/ANR**

- **local tobacco control policies related to restrictions in smoking in public places/private worksites and limits on youth access to tobacco products**

## Estimation

- **Cragg's Two-Part Model:**
  - **Probit estimates of smoking/smokeless tobacco use prevalence equations**
  - **Least squares estimates of conditional cigarette demand and frequency of smokeless tobacco use**
- **Ordered probit estimates for categorical measure of smoking**
- **Multiple model specifications**
  - **multicollinearity vs. omitted variables bias**
- **Subsamples defined by gender and race**
- **Standard errors unadjusted and adjusted to account for the clustered nature of the MTF samples**

## Results

### **Cigarette/Tobacco magazine advertising:**

- **Estimates mixed across measures of advertising and measures of cigarette smoking:**
  - **Gross advertising expenditures (tobacco, cigarette, and youth specific) generally positive for all measures of smoking; rarely significant**
  - **Per household or per capita measures generally negative, with exception of conditional demand equations**

## Results

- **Somewhat more consistent findings for gender-specific population subgroups:**
  - **Generally positive effects of advertising on smoking among young women; often significant in equations for frequency of smoking and smoking prevalence**
  - **Mixed effects for advertising and smoking among young men, with most consistent finding a positive effect on conditional demand**
- **Mixed evidence for subgroups based on race, with exception of generally consistent positive and significant effects on conditional demand**

# Results

## **Cigarette Prices:**

- **Negative and significant effects in all equations**
- **Evidence of border crossing in response to interstate price differentials**
- **Significant differences by race and gender**

## **Smoking Restrictions:**

- **Strong limits on smoking in public places/private worksites significantly reduce the probability of youth smoking; little impact on conditional demand**

# Results

## **Limits on Youth Access to Tobacco Products:**

- **Estimates suggest that comprehensive set of policies limiting youth access to tobacco can reduce youth smoking**

## **Other Tobacco Related Policies:**

- **Cigarette Tax Earmarking:**
  - **Strong negative and significant impact on both smoking prevalence and cigarette consumption by smokers**
- **Smoker protection legislation:**
  - **Unexpected positive effects on youth smoking**

## Summary/Future Plans

**Estimates provide mixed evidence concerning the relationships between cigarette advertising and youth smoking; in general, supportive of a positive relationship between advertising and smoking, but rarely significant**

- **Likely due to the less than ideal measures of exposure to cigarette advertising**

## Summary/Future Plans

- **Better measures:**
  - **More “youth oriented” measures based on youth magazine readership data from Simmons Marketing Research**
  - **More comprehensive measures of cigarette and other tobacco advertising being collected in ImpacTeen**

**Youth and young adult smoking very sensitive to price**

**Other tobacco control policies significantly reduce youth smoking, although magnitude of effects is relatively small**

